STAFF REPORT

TO:	CHIEF ADMINISTRATIVE OFFICER
FROM:	BRIGID REYNOLDS, CONSULTING TOWN PLANNER
SUBJECT:	DP2025-11 – 456 WINTER DR
MEETING DATE:	OCTOBER 28, 2025
SUBJECT PROPERTY:	LOT 2, SECTION 6, RENFREW DISTRICT, PLAN EPP138345 (PID 032-429-568)

PURPOSE

The purpose of this application is to approve a development permit for the construction of a single family dwelling within the Watercourse & Streamside Protection Development Permit Area (DPA 1) adjacent to a stream.

BACKROUND

The subject property is located on a 1,480 m2 (0.36 ac) parcel, located at 456 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 on the north corner of the property.

Reports submitted in support of this application include:

- Riparian Areas Protection Regulation: Assessment Report, prepared by Bob Crandall, dated June 9, 2025
- Tree Assessment, prepared by Beechwood Consultancy and Tree Services, dated May 12, 2025

The lot was recently subdivided and three covenants were registered on the title of the property for 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 Bob Crandall, dated June 9, 2025, establishes the SPEA at 10.0 m from the natural boundary. The conditions of this permit are intended to minimize any negative impacts to the SPEA.

The arborist, Beechwood Consultancy, evaluated the health of trees within the 30 m riparian assessment area and development permit area and recommended that 13 trees, some with multiple stems, should be removed. These are recommended to be removed because adjacent land clearing has exposed them to strong winds and therefore has weakened them. Four of these trees are in the SPEA and covenant area. As a result, replacement trees are required to be planted. The Ministry of Environment establishes a tree replacement ratio and given the size of the trees, 10 trees must be replanted as a condition of this development permit. The arborist's assessment forms part of the Riparian Area Assessment and attachment 3 includes the Provincial riparian tree replanting best practices memo and the list of appropriate tree species for replanting. This DP approves the removal of these trees.

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

Recommendation

The contract planner recommends approving DP2025-11 for the property located at 456 Winter Rd, legally described as Lot 2, Section 6, Renfrew District, Cowichan Lake District, Plan EPP138345 (PID 032-429-568 VIP88703 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 9, 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.
    c. Provide a landscape bond for the value of the replacement trees, including labour, to secure the replanting of 10 appropriate tree species as outlined in Attachment 3
3. Prior to occupancy permit issuance:
    a. Install some form of permanent demarcation of the SPEA line.

Signed:

Brigid Reynolds

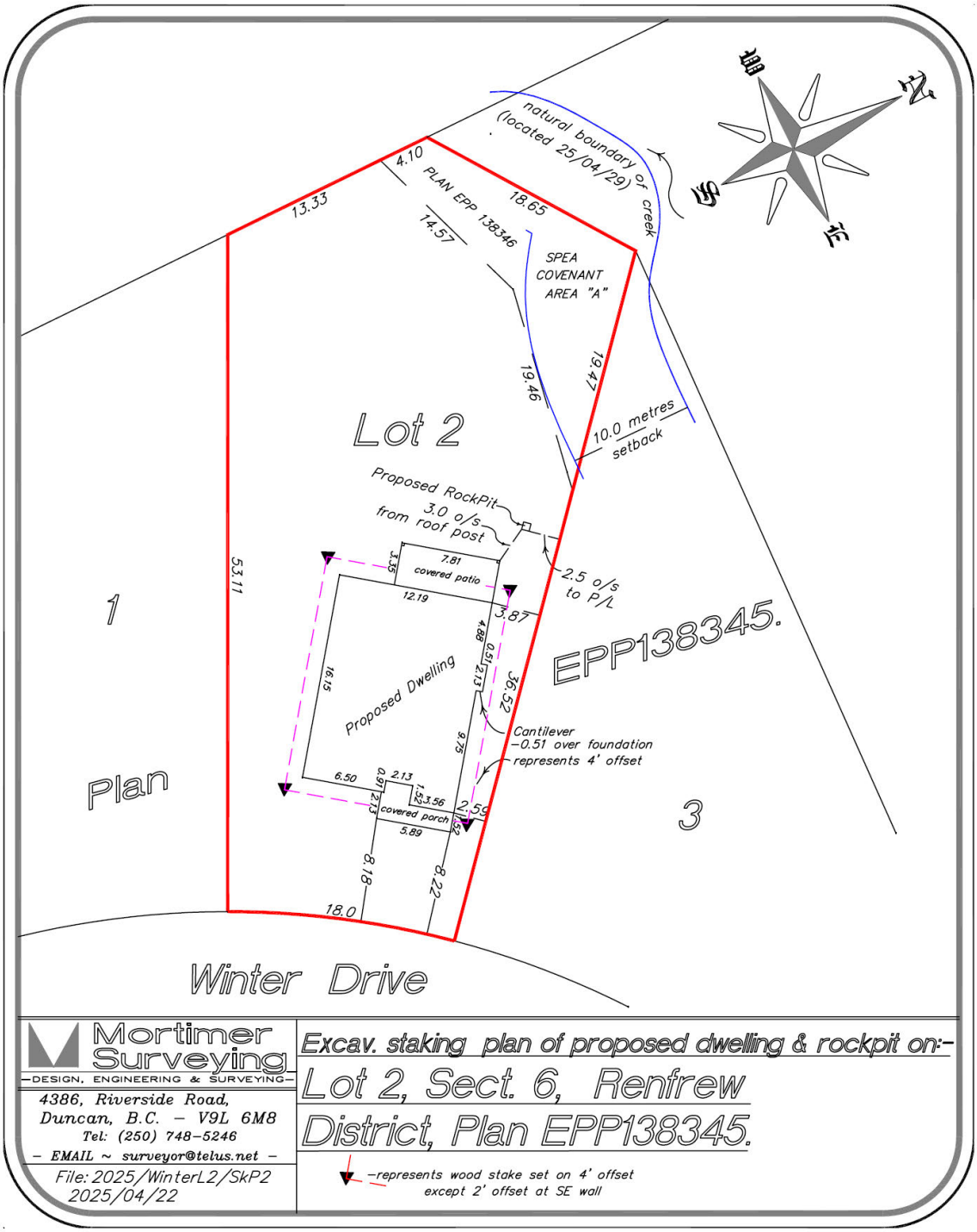
Brigid Reynolds RPP MCIP
Contract Planner

Concurrence:

John T

John Thomas
Chief Administrative Officer

ATTACHMENT 1
SITE PLAN



Attachment 2
RIPARIAN AREA ASSESSMENT REPORT

Riparian Areas Protection Regulation: Assessment Report

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

Date: June 9th 2025

I. Primary QEP Information

First Name	Robert	Middle Name	William
Last Name	Crandall		
Designation	Technologist QEP ASTTBC	Company	Swordfern Environmental
Registration #	27767	Email	[redacted]
Address	[redacted]		
City	[redacted]	Postal/Zip	[redacted]
Prov/state	[redacted]	Country	Canada
		Phone #	[redacted]

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

First Name		Middle Name	
Last Name			
Designation		Company	
Registration #		Email	
Address			
City		Postal/Zip	Phone #
Prov/state		Country	

III. Developer Information

First Name	Rick and Jodi	Middle Name	
Last Name	Hill		
Company			
Phone #	[redacted]	Email	[redacted]
Address	[redacted]		
City	[redacted]	Postal/Zip	[redacted]
Prov/state	[redacted]	Country	

IV. Development Information

Development Type	Residential single family		
Area of Development (ha)	0.03	Riparian Length (m)	42.22
Lot Area (ha)	0.14	Nature of Development	New Residential
Proposed Start Date	July 15th 2025	Proposed End Date	Sept. 15th 2027

V. Location of Proposed Development

Street Address (or nearest town)	Town of Lake Cowichan						
Local Government	Town of Lake Cowichan			City	Lake Cowichan		
Stream Name	Beadnell (east tributary).						
Legal Description (PID)	032-429-568			Region	Vancouver Island		
Stream/River Type	Creek (tributary)			DFO Area	South Coast		
Watershed Code	9202577582						
Latitude	48	50	12.7	Longitude	124	03	15.6

Table of Contents for Assessment Report

Number **Page**

Section 1. Description of Fisheries Resources Values and a Description of the Development proposal

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 winter and spring. After leaving the salmon hatchery the stream "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)
15.2 West Fork R1 (9/12/98)
13.4 R5 (9/12/98)
17.2 R1 (8/18/04)

Min Disch. (m^3) . .0025 (9/19/87) R1
.0028 (8/18/04) R1
R2 0
R3 0
R4 0 for the first100 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)
Mainstem								
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 Beadnell (also called 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

This proposed house will be wood framed and have storm water best management practices in place before, during and after the project is complete. This is a single family residence construction project. It will include periodic Environmental Monitoring and Reporting.

Historical Property Information Related:

A ditch was created to collect all of the seeps and braids of flowing storm water across a very large parent property of 14.32 hectares. This was long ago, the constructed ditch was connected to a flow that drops down to a glade with Elk beds and confluences with the main stem of Beadnell Creek.

The subject property has been a site of many concepts. Several Engineering firms have been involved with attempts of how-to layout lots around the watercourse. Years ago, Ministry of Environment Director Peter D. Law came on site and solved an issue of flows and wildlife corridors. The property has been well grubbed and cleared for decades. The lower part of the tributary (as part of Phase V) flows through a forest that offers plenty of leaf litter and insect drop as well as some shade. This stream eventually drops down into a ravine gully/draw and joins Beadnell Creek main stem where it is in this area that many Roosevelt Elk bed down each day/night in the canopy of forest and fresh water. At night they cross the Beadnell Creek and cause sediment to flow downstream to the Salmon Hatchery where we filter out that sediment each day.

Riparian Assessment Area:

A slope of 2 - 4% over Lot 2 is measured. Leaving the property at west property line a slope of 7- 9% is present. Subject property in riparian assessment area has the following species of vegetation: Sedges such as Carex reed grass, Soft Rush, Sword fern, Salal, Himalayan Blackberry, B.C. Trailing Blackberry, Holly, Red alder, Nootka rose, Willow, Western Red Cedar, Grand Fir, Red Huckleberry, Foxglove, Thistle, Scottish Broom, Trillium, Dock, Mountain Ash, ornamental Fruit trees, Oregon grape, Thimbleberry, Salmonberry, Skunk cabbage, Horsetail (Mairs tail) and Western Hemlock. The watercourse falls into a ravine when leaving subject property that is heavily forested with all conifers and large deciduous trees.

Slopes into the ravine were measured at 17 to 19%. This area is outside of the proposed Development, off subject property and not assessed.

2. Results of Detailed Riparian Assessment

Refer to Section 3 of Technical Manual

Date: June 9th 2025

Description of Water bodies involved (number, type)	1 stream Tributary of Beadnell Creek
Stream	X
Wetland	
Lake	
Ditch	
Number of reaches	1
Reach #	1

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	0.9		2.0
upstream	0.8d		
	0.9		
	1.0		
	2.8		
downstream	3.2d		3.9
	2.7		
	2.0		
	2.3		
	2.5		
	1.8		
Total: minus high /low	16.9		5.9
mean	1.87		2.95
	R/P	C/P	S/P
Channel Type	X		

I, (Robert Crandall), hereby certify that:
a) I am a qualified environmental professional, as defined in the Riparian Areas Protection Regulation made under the *Riparian Areas Protection Act.*
b) I am qualified to carry out this part of the assessment of the development proposal made by the developer (*Rick and Jodi Hill*).
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.

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

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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.

		LC	SH	TR	Method employed if other than TR
Polygon No:					
SPVT Type					
Polygon No:					
SPVT Type					
Polygon No:					
SPVT Type					

Zone of Sensitivity (ZOS) and resultant SPEA

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)	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)						

Ditch Fish Bearing	Yes		No		If non-fish bearing insert no fish bearing status report	
SPEA maximum		(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)				

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:

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

b) I am qualified to carry out this part of the assessment of the development proposal made by the developer *(Rick and Jodi Hill)*.

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

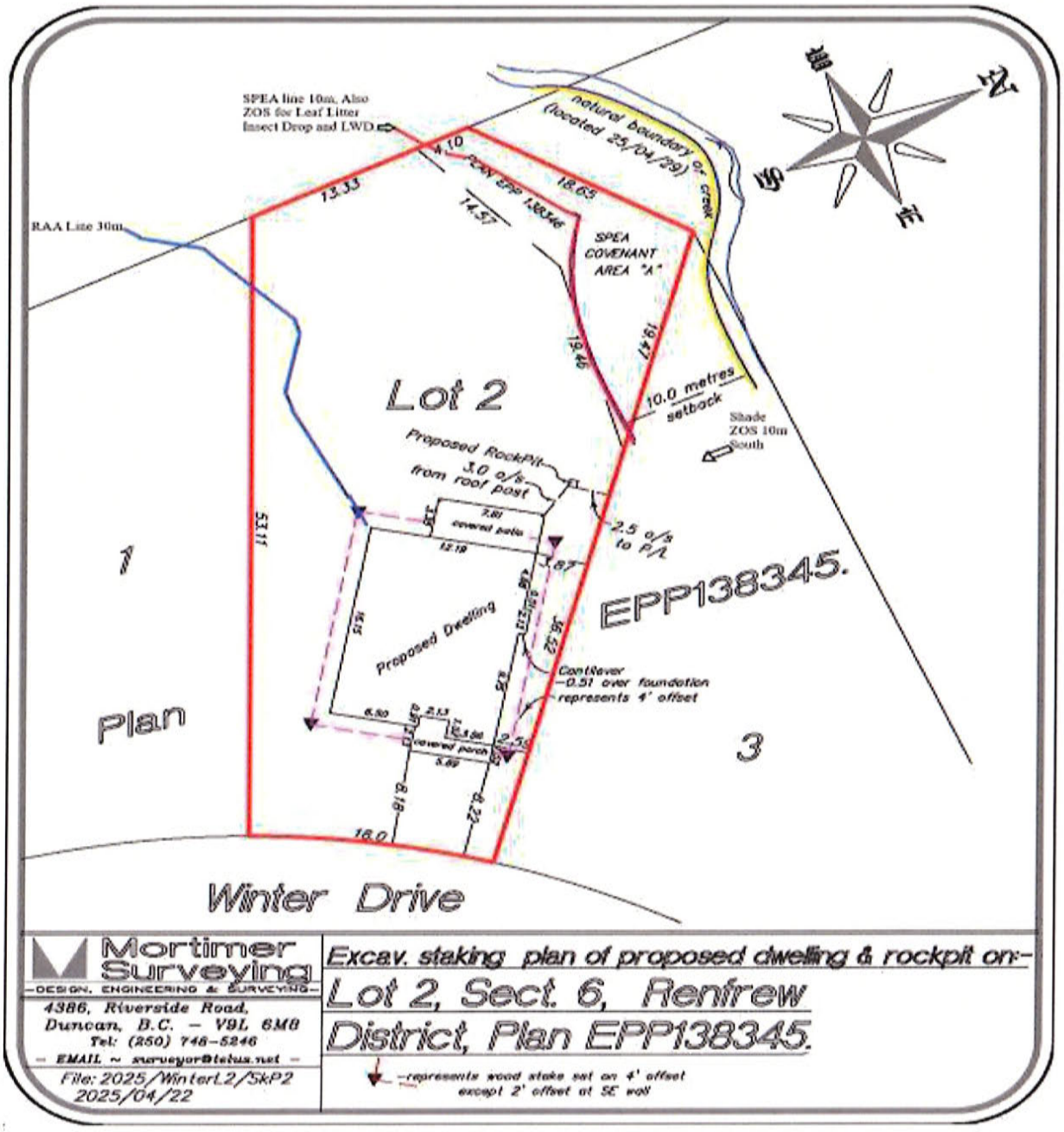
d) In carrying out my assessment of the development proposal, I have followed the technical manual to the Riparian Areas Protection Regulation.

Comments

Parent subdivision approved RAPR# 8805 has SPEA of 10m approved due to east side orientation of subject property in relation to stream boundary. This lot (subject property) is included in RAPR assessment 8805 approval mapping.

Section 3. Site Plan…next page:

Site Plan



Survey Site Plan.

Section 4. Measures to Protect and Maintain the SPEA

1. Danger Trees	An arborist Report is within and loaded up into RARNS for this subject. Some hazardous trees will be removed as the concern is windthrow. A tree cut permit has been issued by local government for the hazard trees and is included in this assessment.
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 (Rick and Jodi Hill); g) 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.	
2. Windthrow	Winds from the west in the fall and winter are strong and cause non wind firm trees to blowdown which has happened on nearby similarly oriented properties with damages occurring. The Arborist Report covers these concerns. A tree cut permit has been issued by local government for the hazard trees and is included in this assessment.
I, (Robert Crandall), hereby certify that: a. I am a qualified environmental professional, as defined in the Riparian Areas Protection Regulation made under the *Riparian Areas Protection Act*; b. I am qualified to carry out this part of the assessment of the development proposal made by the developer (Rick and Jodi Hill); 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.	
3. Slope Stability	The build site is on stable well established soils and slope stability is not a concern here.
I, (Robert Crandall), hereby certify that: a. I am a qualified environmental professional, as defined in the Riparian Areas Protection Regulation made under the *Riparian Areas Protection Act*; b. I am qualified to carry out this part of the assessment of the development proposal made by the developer (Rick and Jodi Hill)); 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.	
4. Protection of Trees	SPEA flagging and stakes are in place to mark SPEA line and prior to construction a sediment silt fence will be installed between the build site and the SPEA line. The Arborist Report and Tree Cut Permit limit the tree cutting to hazardous trees only and none of them are within the SPEA. No excavation will take place within the tree root zone of the SPEA trees.
I, (Robert Crandall), hereby certify that: a. I am a qualified environmental professional, as defined in the Riparian Areas Protection Regulation made under the *Riparian Areas Protection Act*. b. I am qualified to carry out this part of the assessment of the development proposal made by the developer (Rick and Jodi Hill); 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.	
5. Encroachment	A permanent denotation/demarcation of the SPEA line will take place along the SPEA line to stop encroachment. Following build out. During construction the sediment fence will be a physical and visible barrier with riparian

	flagging to stop encroachment. Permanent demarcation will be a row of boulders, live fence or a split rail fence. Landowner desires to install an Elk fence along SPEA line to keep Elk from property.
I, (Robert Crandall), hereby certify that: a. I am a qualified environmental professional, as defined in the Riparian Areas Protection Regulation made under the *Riparian Areas Protection Act*. b. I am qualified to carry out this part of the assessment of the development proposal made by the developer (Rick and Jodi Hill). 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.	
6. Sediment and Erosion Control	Best management practices (BMP s) for Erosion and Sediment Control (ESC) will be implemented. A sediment fence will be installed between the construction works and the SPEA line. Straw bale/s will be available on site to disperse over disturbed soils to prevent rill erosion. Soil piles will be tarped prior to precipitation events.
I, (Robert Crandall), hereby certify that: a. I am a qualified environmental professional, as defined in the Riparian Areas Protection Regulation made under the *Riparian Areas Protection Act*. b. I am qualified to carry out this part of the assessment of the development proposal made by the developer (Rick and Jodi Hill). 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.	
7. Stormwater Management	An infiltration chamber/pit will be excavated near to northwest corner of house for perimeter drains and rooftop gutters/eves troughs to connect to so that storm water infiltrates back into ground (outside of SPEA). This system will be tested with garden hose flow over roof tops.
I, (Robert Crandall), hereby certify that: a. I am a qualified environmental professional, as defined in the Riparian Areas Protection Regulation made under the *Riparian Areas Protection Act*. b. I am qualified to carry out this part of the assessment of the development proposal made by the developer (Rick and Jodi Hill); 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.	
8. Floodplain Concerns (highly mobile channel)	The footings of house will be well above flood plain levels and local Building Inspector will not allow construction until floor joists are above 200 yr flood plain levels.
I, (Robert Crandall), hereby certify that: a. I am a qualified environmental professional, as defined in the Riparian Areas Protection Regulation made under the *Riparian Areas Protection Act*. b. I am qualified to carry out this part of the assessment of the development proposal made by the developer (Rick and Jodi Hill); 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.	

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 the contractor and landowner to finalize construction plans and ensure that no impacts will occur to protected areas. Erosion and Sediment Controls. Best Management Practices (BMPs) will be discussed. Spill Response measures will be reviewed. Installation of barrier/sediment fence will take place. Spill kit will be brought on site. Plans to permanently denote SPEA line will be established.

Construction

The site will be monitored during construction. A sediment/construction barrier fence will be installed prior to construction and maintained during construction. Straw bale/s 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. Silt/Sediment fencing will be on hand for installation along SPEA as required.

Post Construction

A post construction report that describes SPEA protection compliance status following build out and makes recommendations for future action s will be prepared. It is at this time that the sedimentation fence will be removed, and the temporary silt/sediment fence will be removed. The storm water infiltration system will be tested with garden hose flow over roof tops. Permanent denotation of SPEA line will be installed at this stage.

Initial Site Visit:

Prior to commencing any construction or demolition activities on a lot, a Qualified Environmental Professional or Environmental Monitor 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.

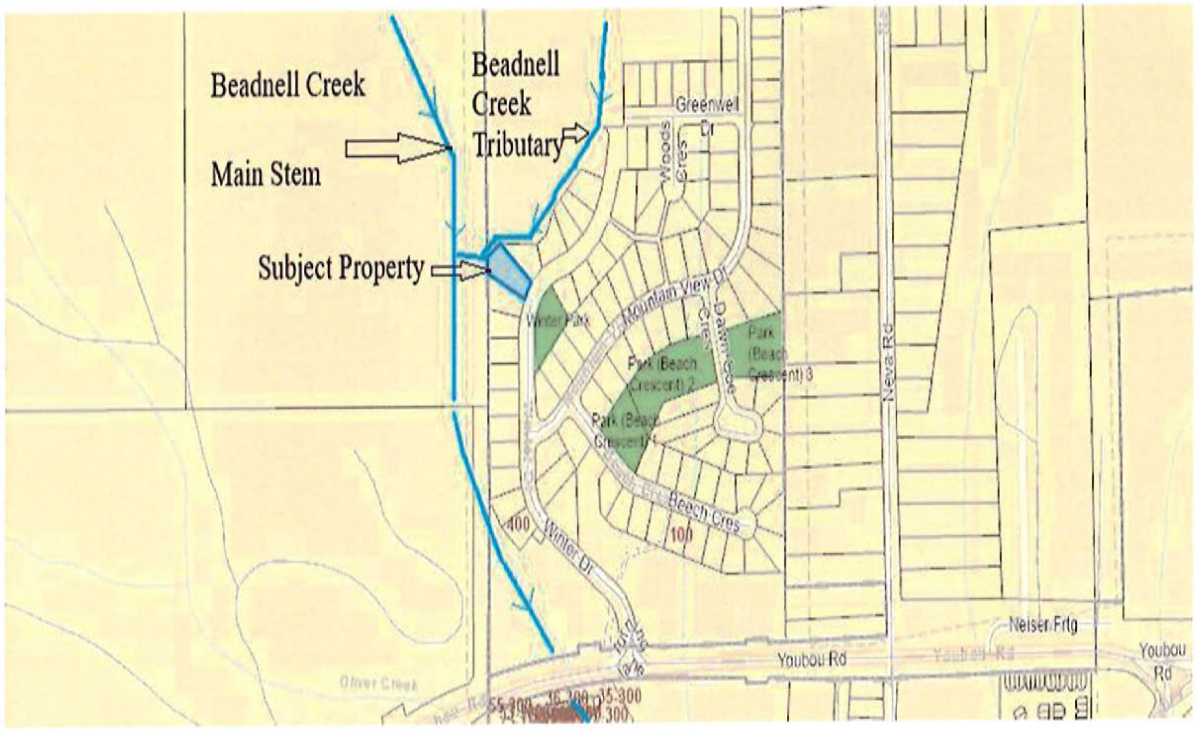
Post Construction Site Visit:

The Riparian Assessment requires that a post-development visit and report be prepared by a QEP to certify that "the conditions set out in assessment reports have been properly implemented". Specifically, the QEP should ensure that all measures to protect the SPEA were properly followed. Submission of a post-development report is a suggested requirement to obtain the occupancy permit.

Additional Site Visit:

The potential need for additional site visits will be discussed during the pre-work meeting. The communications plan developed at the initial site visit will provide the contact number for the environmental monitor who must be contacted in the event of an environmental emergency.

Section 6. Photos



Civic map

Aerial View subject property shaded in blue.

Standing in steam alongside lot 3, crosshairs are right of subject property. Grade 3.9% here.

Looking upstream from forest edge while in stream, subject property on right (Lot 2).

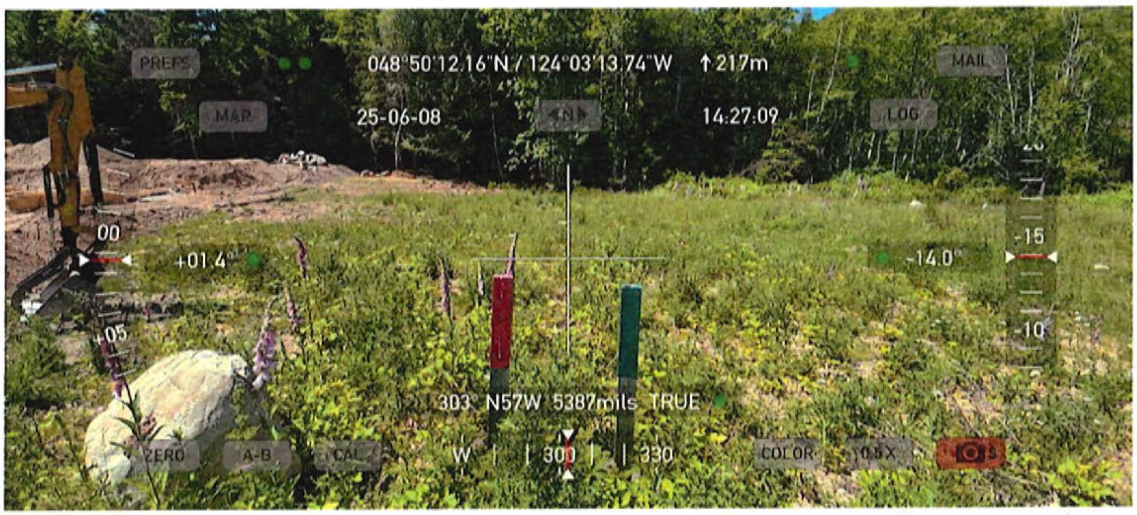
Looking from forest edge (outside of SPEA) (in RAA) toward house site. Lot 1(right) non-riparian under house construction.

SPEA line at back of lot. Looking outward to street.

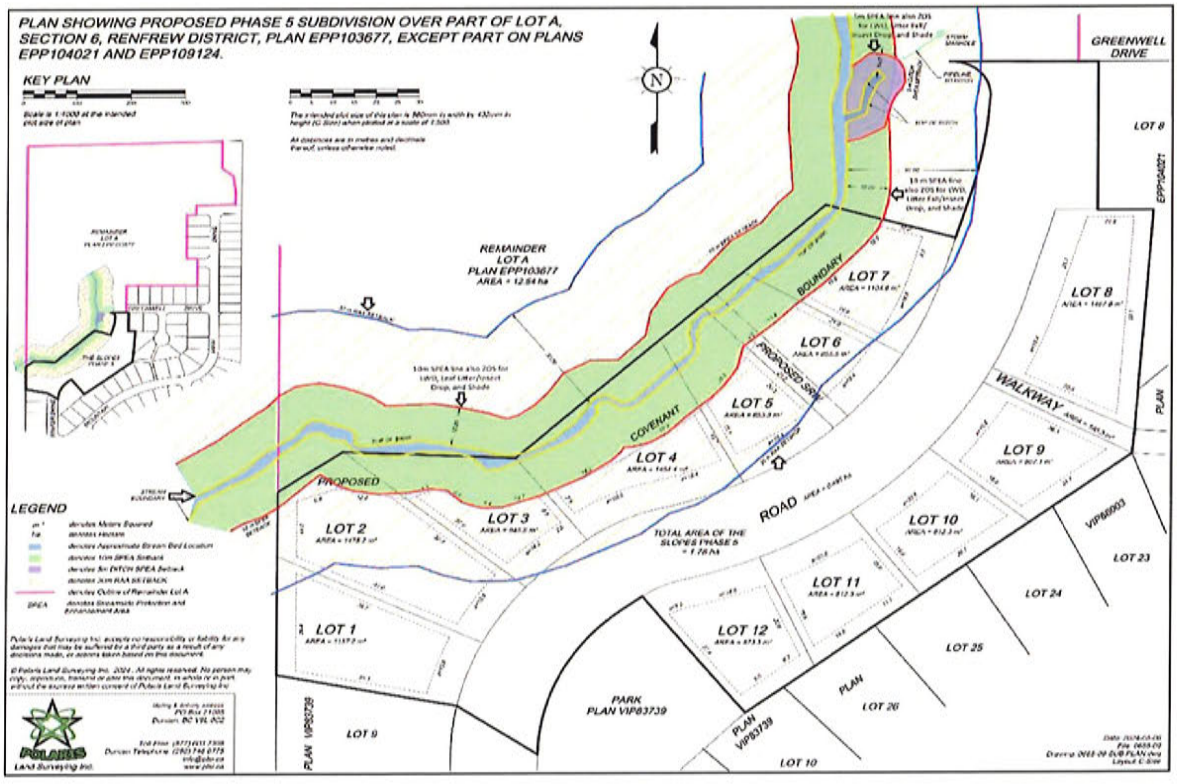
Following SPEA line along back of property.

SPEA line along back of property.

BCLS lot corner pin and guard/witness post for corner of Lot1 and Lot 2 (subject property.



Looking from Winter Drive into subject property Lot 2. Lot 1 (non riparian) construction ongoing on left side of photo.



Parent property site plan.

Section 7. Professional Opinion

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

Date [June 9th 2025]

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 *(Rick and Jodi Hill)*_____, 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) [X] 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.

Arborist Report Next Pages:

BEECHWOOD
Consultancy & Tree Service
4300 Riverside Road
Duncan BC V9L 6M8
Ph: 250-715-7910
Email: jens@beechwoodtrees.com

May 12, 2025

Rick Hill
Lot 2, Winter Drive
Lake Cowichan.

Re: Stability of trees in the 15 to 30 meter riparian area at lot 2, Winter Drive, Lake Cowichan.

Dear Mr. Rick Hill,

I have inspected and evaluated the trees in the 15 to 30 meter riparian area on your property to determine their stability and the potential of them falling on people and the planned house construction. The attached map shows tree locations and the table details the trees.

My assessment and evaluation skills include over 20 years of education, experience, and arboriculture and urban forestry training. The tools I use are limited to visual and external means and can include diameter tape, binoculars, and a rubber mallet for sounding. I do not implement invasive techniques such as drilling or coring unless I deem it necessary to determine the presence and extent of internal defects.

The assessed trees are a mixture of Red alders (*Alnus rubra*), Bitter cherries *(Prunus emarginata*), Western redcedars (*Thuja plicata*) and Douglas firs (*Pseudotsuga menziesii*). Their health ranges from average to fair; the exception is the Red alders; many are dead or dying.

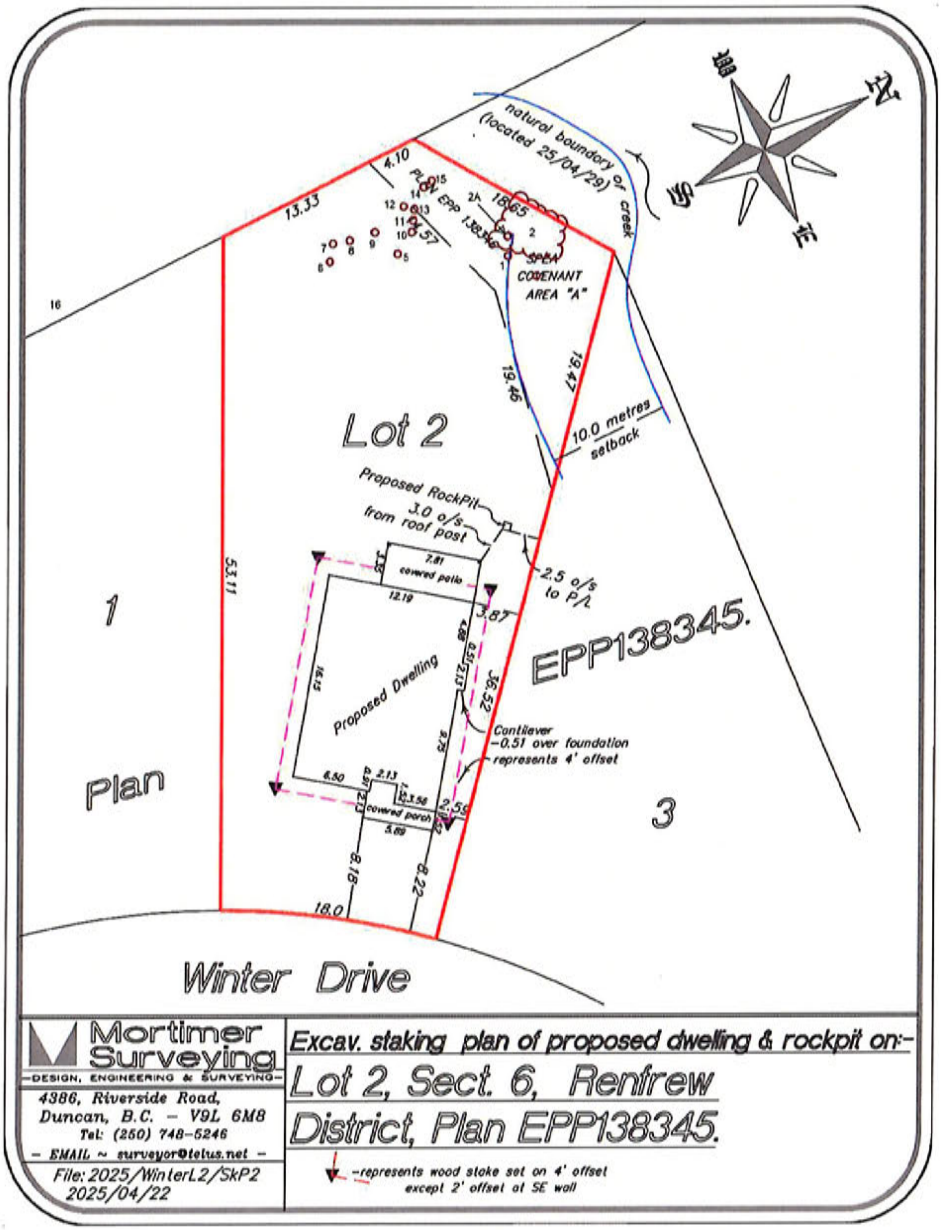
The trees are all in the 15 to 30 meter riparian area. They have recently been exposed to stronger winds as trees on this lot and adjacent lots to the south, east, and north have been cleared of trees. The clearing has increased the trees' likelihood of failure, and many can reach the planned house and people near them if they fall in that direction. A few trees near the 15-meter riparian delineation line can be retained as they can't reach the planned house, and they are also moderately protected from stronger winds by the riparian area trees.

The site map on the next page shows tree locations and the table on the last page details each tree with recommendations. I recommend removing the trees before house construction starts; the retained trees should be evaluated again in one year.

Sincerely,

Jens Barsballe
Registered Consulting Arborist #570
ISA Board Certified Master Arborist PN-2741B
ISA Tree Risk Assessment Qualified
Wildlife Danger Tree Assessor P2370

Site map with tree locations



I am not a surveyor; the tree locations are approximate. The lot's property pins were used as field references for plotting the trees

Tree assessment table with recommendations for trees in the 15–30-meter riparian area

Tree #	Species	DBH (cm)	Health	Defects	Recommendations
1	Bigleaf maple	10-30	Average	A five-trunk tree situated on the upper edge of a small bank and is poorly anchored and likely to fail.	These trees are exposed to stronger winds as the areas to the south, east, and north have been cleared of trees, thus increasing their likelihood of failure. They can potentially fall onto the planned house or people near it. According to the property owner and the QEP, trees in the 15 to 30 meter riparian zones on adjacent properties have failed and struck property recently. I recommend removing these trees to prevent them from falling on people and property. They should be removed prior to the start of construction.
2	Alders	10-20	Poor/dead	Nine tall and skinny trees in a grouping. They are dead or dying. Some have partially fallen and are leaning against adjacent trees.	
2A	Alder	23	Average	No major structural defects found. Lot clearing and clearing of trees on adjacent lots has exposed this tree to stronger winds from all directions except the west.	
3	Alder	14	Fair	The tree shifted recently, likely due to stronger wind exposure from recent lot clearing. The tree is likely to fall over.	
4	Redcedar	27	Average	No major structural defects found. Tree clearing on this and the adjacent lots has exposed this tree to stronger winds.	
5	Redcedar	50	Average	No major structural defects found. Tree clearing on this and the adjacent lots has exposed this tree to stronger winds.	
6	Bitter cherry	22	Fair	The tree is poorly anchored due to missing and broken roots on the south side, making the tree unstable. It is also exposed to stronger winds due to lot clearing.	
7	Douglas fir	21	Average	The tree is poorly anchored due to missing and broken roots on the south side, making the tree unstable. It is also exposed to stronger winds due to lot clearing.	
8	Bitter cherry	23	Fair	The tree is poorly anchored due to missing and broken roots on the south side, making the tree unstable. It is also exposed to stronger winds due to lot clearing.	
9	Redcedar	26	Average	The tree is poorly anchored due to missing and broken roots on the south side, making the tree unstable. It is also exposed to stronger winds due to lot clearing.	
10	Alder	27	Fair	No major structural defects found. Clearing of trees on this and the adjacent lots has exposed this tree to stronger winds.	
11	Douglas fir	62	Average	A tall tree with a canopy extending above the adjacent tree canopies increases its likelihood of failure due to stronger wind exposure from the clearing of lots. The tree can reach the planned house if it falls in that direction.	
12	Alder	22	Poor	Leaning toward the south. The top broke off halfway up the trunk in the past; the two new tops that have developed are poorly attached due to decay in the main trunk. Tree parts can fall on people near it.	
13	Douglas fir	24	Fair	These three trees are close together and near the 15-meter riparian line; they have no major structural defects. They are mostly protected from stronger wind exposure by the riparian area trees, and they cannot reach the planned house and people near it if they fall.	Retain
14	Redcedar	33	Fair		
15	Douglas fir	26	Average		

Local Government Tree Cut Permit next pages:

TOWN OF LAKE COWICHAN
Box 860, Lake Cowichan, British Columbia, V0R 2G0

TREE CUTTING PERMIT

Permit No. 2025-01

FOR TREES 1 THROUGH 12 PER ASSESSMENT ATTACHED.

APPLICANT AND REGISTERED OWNER

Approval is hereby granted to the undersigned to cut trees as applied for in the tree cutting application and as described herein:

Registered Owner's Name Rick Hill and Jodi Hill.

Address [redacted] Postal Code [redacted]

Telephone [redacted]

Office use only:

Approval Signature B Smith

Date June 5/25

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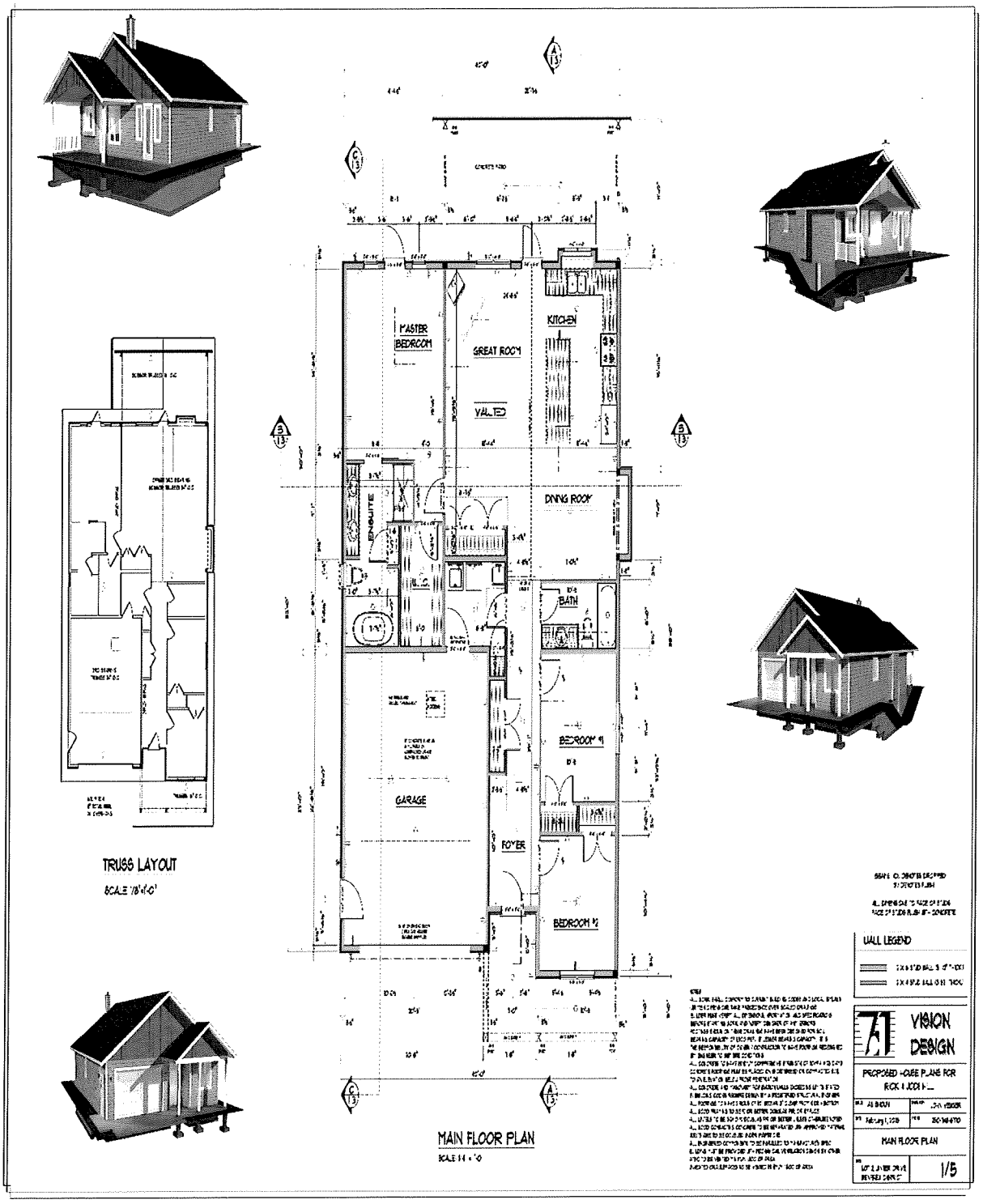
Designs on next pages: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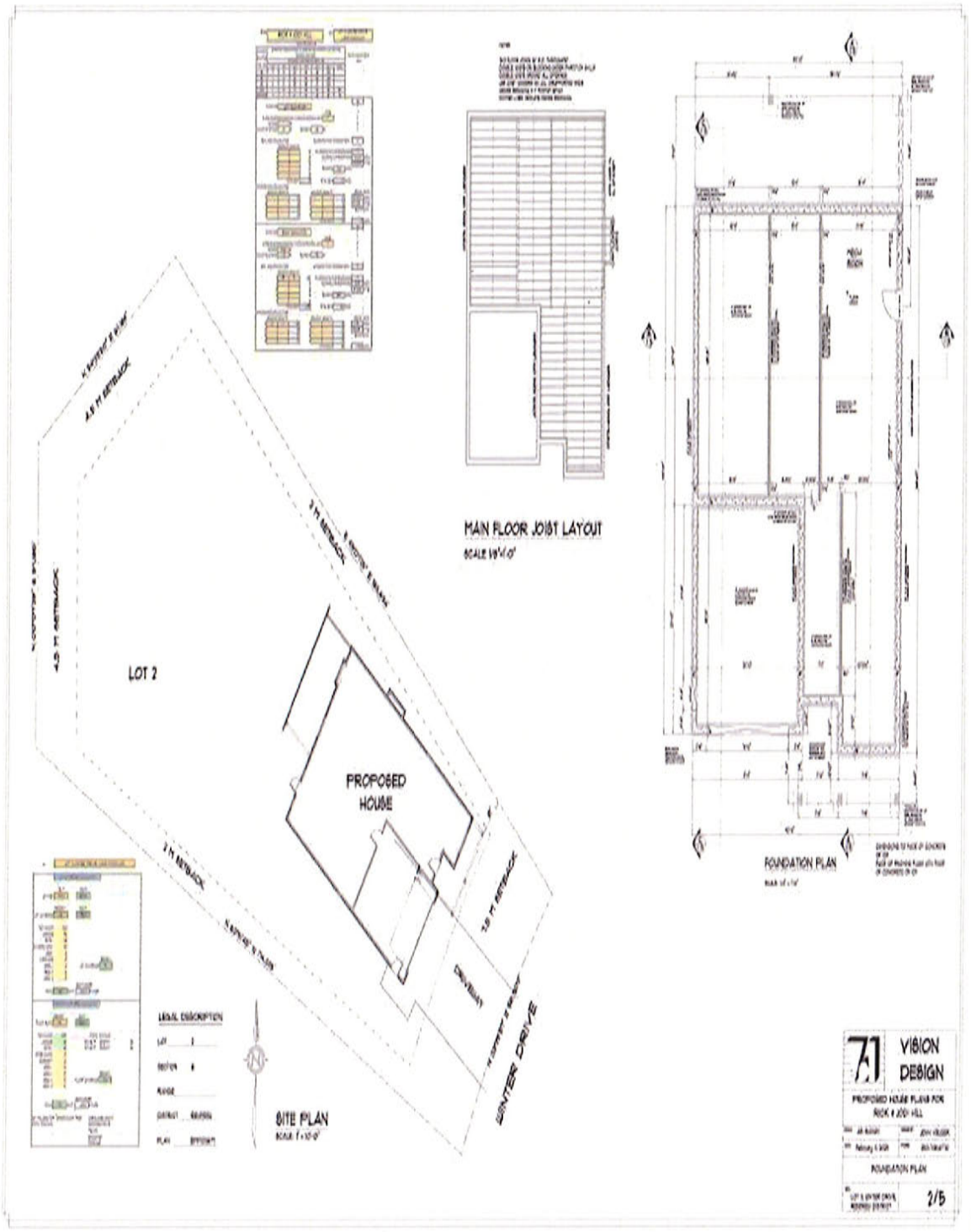
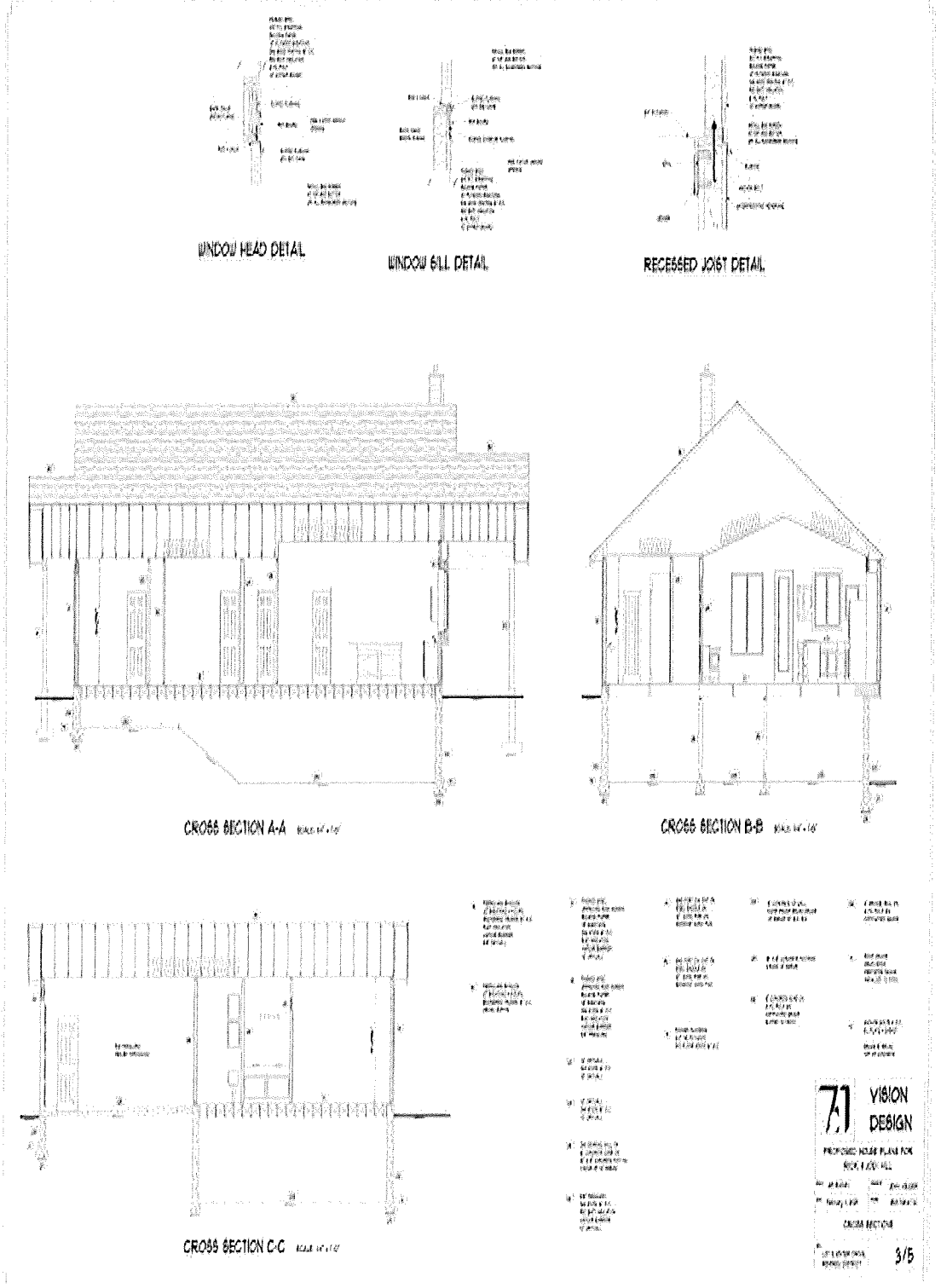
GREAT ROOM
KITCHEN
VAULTED
DINING ROOM
ENSUITE
BATH
BEDROOM #1
GARAGE
FOYER
BEDROOM #2
TRUSS LAYOUT
MAIN FLOOR PLAN
WALL LEGEND
VISION DESIGN
MAIN FLOOR PLAN
1/5


MAIN FLOOR JOIST LAYOUT
FOUNDATION PLAN
LOT 2
PROPOSED HOUSE
SITE PLAN
LEGAL DESCRIPTION
VISION DESIGN
FOUNDATION PLAN
2/5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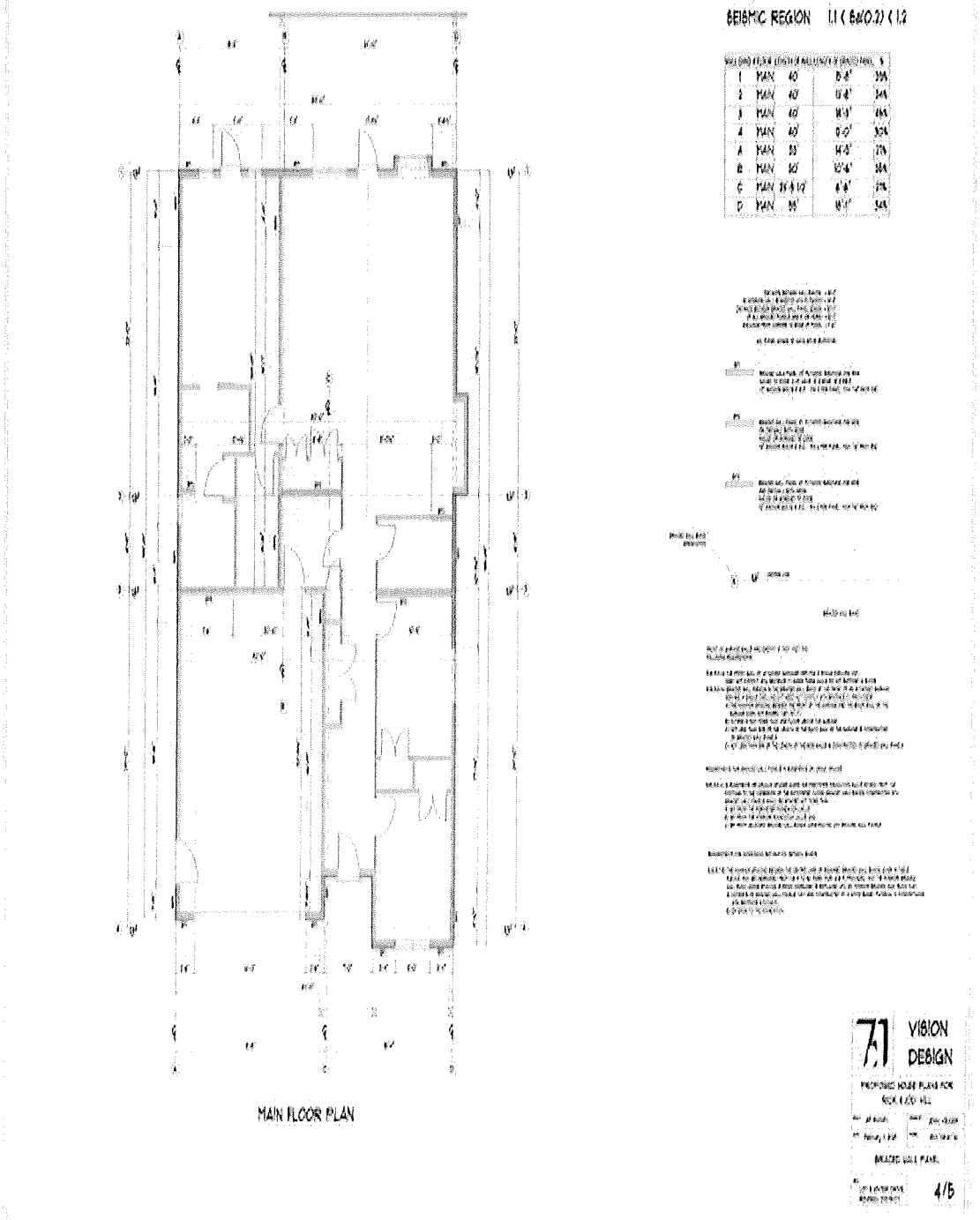
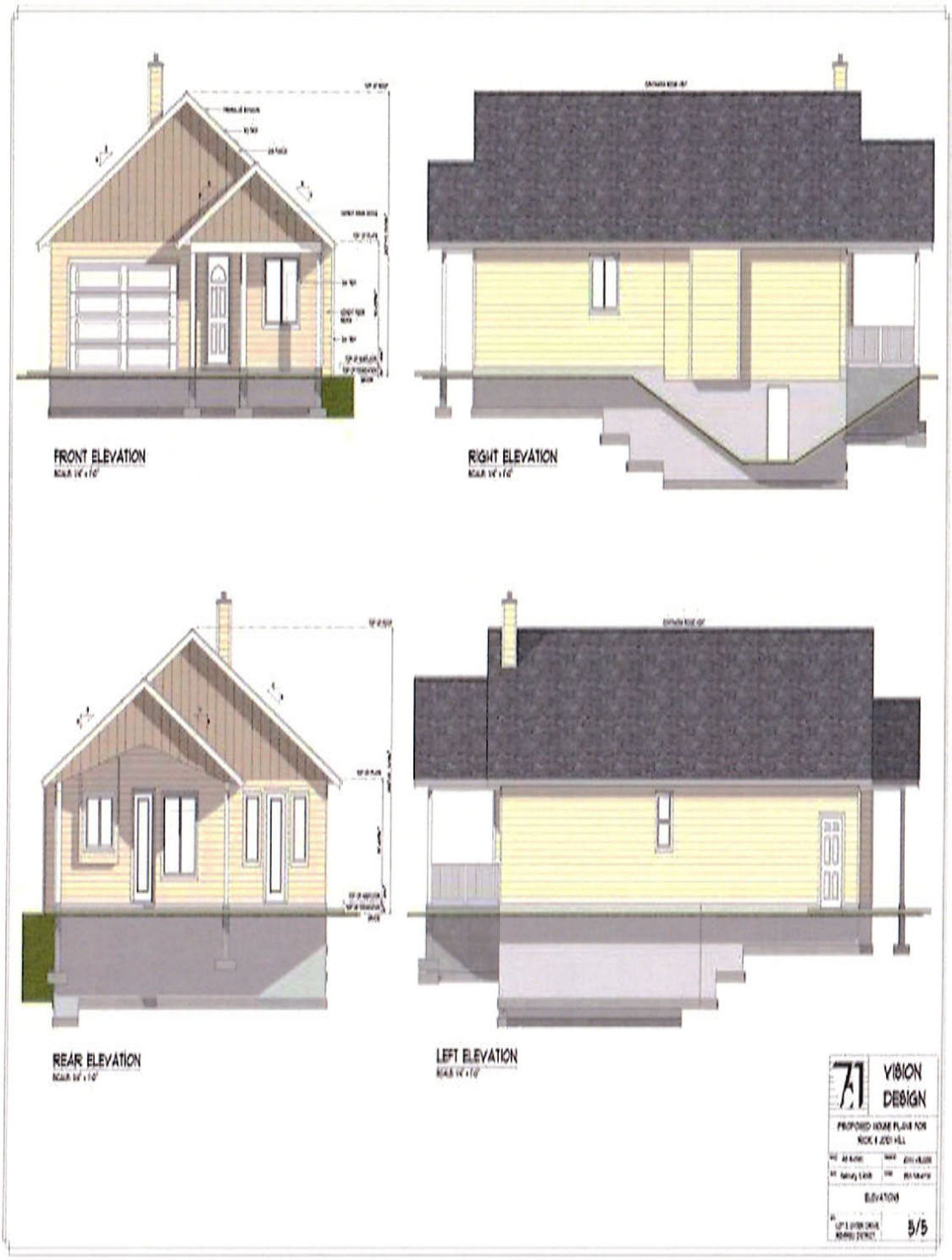
RECESSED JOIST DETAIL
CROSS SECTION A-A
CROSS SECTION B-B
CROSS SECTION C-C
VISION DESIGN
3/5


SEISMIC REGION
MAIN FLOOR PLAN
VISION DESIGN
4/5


FRONT ELEVATION
RIGHT ELEVATION
REAR ELEVATION
LEFT ELEVATION
VISION
DESIGN
ELEVATIONS
5/5

ATTACHEMENT 3
PROVINCIAL TREE REPLACMENT DOCUMENTS

BRITISH COLUMBIA

INFORMATION

November 1996

TREE REPLACEMENT CRITERIA:

The criteria below apply to the replacement of trees authorized for removal under the *Fisheries Act*, *Wildlife Act* or *Land Title Act* by BC Environment, Fish, Wildlife and Habitat Protection. Requests for authorization should be accompanied by a tree survey and replacement planting plans completed by a professionally certified environmental consultant and detailing numbers, sizes and species. Species suitable for replacement will be based on site specific conditions.

- 0 mm - 151 mm (6") dbh◆ — 2 replacement trees (min height 1.5 m), or, 4 shrubs (for up to 50% of trees being replaced in this range);
- 152 mm - 304 mm (12") dbh — 3 replacement trees (min height 1.5 m);
- 305 mm - 456 mm (18") dbh — 4 replacement trees (min height 2.0 m);
- 457 mm - 609 mm (24") dbh — 6 replacement trees (min height >✶ 2.0 m);
- 610 mm - 914 mm (36") dbh — 8 replacement trees (min height > 2.0 m).

Trees > 914 mm dbh (36") will require individual approval and replacement criteria prior to removal.

Every effort must be made to retain 20% of trees > 304 mm dbh (12") as wildlife snags at minimum height of 3 m.

◆ dbh = diameter breast height
✶ > = greater than

For further information, please contact the following:
Ecosystem Planning & Protection
BC Environment, Lower Mainland Region
10470-152nd St.
Surrey BC V3R 0Y3
Phn: (604) 582-5235
Fax: (604) 582-5305
Web-site: http://wlapwww.gov.bc.ca/sry

Ministry of Environment, Lands and Parks
BC Environment
Lower Mainland Region
Mailing/Location Address:
10470 152 Street
SURREY BC V3R 0Y3
Telephone: (604) 582-5200
Facsimile: (604) 930-7119

Attachment 3
Replacement Tree

APPENDIX 3. PLANT LIST (Note: This plant list describes common riparian species but is not considered complete. Further research is recommended during plant species selection.)

Species	Latin	Soil moisture regime	Soil nutrient regime	Shade tolerance	Planting zone	Ecosystem Type				Comments
						Coastal - Dry (CDF, CWH - dry)	Coastal - Moist/Wet (CWH - moist, wet)	Southern Interior - Dry (PP IDF MS)	Southern Interior - Moist (ICH)	
Deciduous trees:										
Bigleaf maple	*Acer macrophyllum*	dry to moist	rich to very rich	H	floodplains	Y				Does well on disturbed sites
Red alder	*Alnus rubra*	wet	rich to very rich	M	streambanks, active floodplains, disturbed sites	Y	Y			Nitrogen-fixing; ferns, grasses and sedges grow well beneath whereas acid loving salal and vaccinium species do not; fast-growing; reproduces vegetatively from stump sprouts
Paper birch	*Betula papyrifera*	moist, well-drained soils	medium to rich	M	moist forest, seepage sites, floodplains,	Y	(Y)	Y	Y	Reproduces vegetatively from stump sprouts; unable to tolerate long periods of drought or saturated soils
Pacific dogwood	*Cornus nuttallii*	moderately dry to moist, well-drained soils	poor to rich	M	along streams or gullies, open to dense forests	Y				
Pacific Crabapple	*Malus fusca*	moist to wet	medium to rich	M	edges of standing and flowing water, upper beaches	Y	Y			
Black Cottonwood	*Populus balsamifera* ssp. *Trichocarpa*	moist to very moist	rich to very rich	L	floodplains, streambanks, lakeshores, seepage sites	Y	Y	Y	Y	Reproduces by root suckers and stem sprouts; low seed viability
Trembling Aspen	*Populus tremuloides*	slightly dry	medium to rich	L	open forest, edges of grasslands			Y	Y	Unable to tolerate long periods of saturated soils; reproduces by root suckers and stem sprouts; low seed viability
Bitter cherry	*Prunus emarginata*	slightly dry to moist	poor to very rich	M	along streams, logged areas	Y	Y		Y	Occurs on logged sites
Choke Cherry	*Prunus virginiana*	dry to moist	rich moist to disturbed sites	L	adapted to a wide range of sites			Y		Leaves, bark, stem and cherry pit are toxic. Good for erosion control due to spread by rhizomes and tendency to create thickets.

Species	Latin	Soil moisture regime	Soil nutrient regime	Shade tolerance	Planting zone	Ecosystem Type				Comments
						Coastal - Dry (CDF, CWH - dry)	Coastal - Moist/Wet (CWH - moist, wet)	Southern Interior - Dry (PP IDF MS)	Southern Interior - Moist (ICH)	
Conifers:										
Amabalis fir	*Abies amabilis*	moist to very moist, deep, well-drained	poor to rich	H			Y			Grows with western hemlock, sitka spruce and western redcedar; produces abundant understorey due to high shade tolerance
Grand fir	*Abies grandis*	slightly dry to very moist	very rich	H		Y		Y	Y	Grows with Douglas-fir
Western larch	*Larix occidentalis*	moderately dry to slightly dry	medium to rich	L	open forest			Y	Y	
Englemann Spruce	*Picea engelmannii*	slightly dry to very moist	poor to rich	M	seepage sites, floodplains, lakeshores		Y	Y	Y	
White Spruce	*Picea glauca*	slightly dry to very moist	medium to very rich	M	wet draws, floodplains, seepage sites			Y	Y	
Sitka Spruce	*Picea sitchensis*	moist to very moist, well-drained soils	rich to very rich	M	alluvial floodplains	(Y)	Y			Shallow rooted
Lodgepole Pine	*Pinus contorta*	very dry to moist	very poor to medium	L	dry rocky slopes to deep rich soils	Y	Y	Y	Y	Tolerant of poor soils and compacted soils
Western White Pine	*Pinus monticola*	dry to moist	poor to rich to very rich	M	moist creek bottoms, benches	Y			Y	Drought tolerant
Ponderosa Pine	*Pinus ponderosa*	very dry to moderately dry	medium to very rich	L	open forests			Y	(Y)	Very drought tolerant
Douglas-fir	*Pseudotsuga menziesii*	dry to moist	medium	L-H	dense to open forest	Y	Y	Y	Y	Does not tolerate saturated soils
Western Redcedar	*Thuja plicata*	slightly dry to wet seepage sites	poor to very rich	H	alluvial sites	Y	Y	Y	Y	Tolerates saturated soils; Low drought resistance

Species	Latin	Soil moisture regime	Soil nutrient regime	Shade tolerance	Planting zone	Ecosystem Type				Comments
						Coastal - Dry (CDF, CWH - dry)	Coastal - Moist/Wet (CWH - moist, wet)	Southern Interior - Dry (PP IDF MS)	Southern Interior - Moist (ICH)	
Western Hemlock	*Tsuga heterophylla*	moist to very moist; prefers soils with high organic content (acidic)	Very poor to medium	H	moist creek bottoms, seepage sites	Y	Y		Y	Creates dense canopy limiting understorey growth; not drought tolerant
Shrubs:										
Vine Maple	*Acer circinatum*	moist to wet	medium	H	under forest cover, open areas, stream banks	Y	Y			
Douglas Maple	*Acer glabrum*	dry to moist but well-drained	medium	H	open sites, moist open forests, seepage sites, moist gullies	Y		Y	Y	
Mountain alder	*Alnus tenuifolia*	very moist to wet; poorly drained sites	rich to very rich	M	steamside, pond and lake edges			Y	Y	Reproduces vegetatively from stump sprouts
Sitka alder	*Alnus viridis* ssp. *sinuata*	moist	tolerates low nutrient levels	M	streambanks, edges of wet meadows, well-drained upland forests		Y		Y	Nitrogen fixing; good for poor soils
Saskatoon	*Amelanchier alnifolia*	dry to moist	medium	M	open forest, meadows; moist gullies in grasslands, disturbed sites	Y		Y	Y	Easily propagated from wild seedlings or root cuttings
Red-Osier Dogwood	*Cornus stolonifera*	moist to wet	tolerates low nutrient levels	H	streamside, open forest, disturbed sites	Y	Y	Y	Y	Easily propagated from cuttings or layering from suckers. Excellent species for environmental plantings on moist soils.

Species	Latin	Soil moisture regime	Soil nutrient regime	Shade tolerance	Planting zone	Ecosystem Type				Comments
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Beaked Hazelnut	*Corylus cornuta*	moist but well-drained sites	medium	H	open forest, well-drained streamside, shady openings	Y	Y	Y	Y	
Black Hawthorn	*Crataegus douglasii*	moist	tolerates low nutrient levels	L	streamside, lake shores, open areas and forest edges, open deciduous forest	Y	Y	Y	Y	
Salal	*Gaultheria shallon*	dry to wet	tolerant of poor soils	H	coniferous forests, shoreline	Y	Y			Forms thickets; highly adaptable to a wide range of sites
Oceanspray	*Holodiscus discolor*	dry to moist sites	tolerates low nutrient levels	M	open areas, ravine edges	Y	Y	Y	Y	
Black Twinberry	*Lonicera involucrata*	wet to moist sites to rocky slopes	medium	H	streamside, forests and openings, seepage areas, edges of wetlands		Y	Y	Y	
Dull Oregon-grape	*Mahonia nervosa*	dry to moist	poor to rich	H		Y	Y			
Mock Orange	*Philadelphus lewisii*	moist rich sites to dry rocky soils	tolerates low nutrient levels	M	open forest, forest edges, open brushy areas	Y	Y	Y	Y	
Pacific Ninebark	*Physocarpus capitatus*	moist to wet	tolerates low nutrient levels	M	streamside, forest edges	Y				
Cascara	*Rhamnus purshiana*	moist to wet	medium to very rich	H	mixed forest, south aspect	Y	Y		Y	Grows with red alder and vine maple at the coast
Black gooseberry	*Ribes lacustre*	moist to dry to wet	poor to rich	M	streamside, forest, open seepage areas, dry areas	Y	Y	Y	Y	Often grows on rotting wood

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Rose sp.	*Rosa spp.*	dry to moist	medium	M	streamside, open habitats, seepage areas	Y		Y	Y	
Salmonberry	*Rubus spectabilis*	moist to wet	tolerates low nutrient levels	H	streamside, forests, disturbed areas	Y	Y			Excellent erosion control due to rapidly spreading underground roots
Willow	*Salix* spp.	wet to dry	tolerates low nutrient levels	M	streamside, lakeshore, alluvial areas, open forests	Y	Y	Y	Y	
Blue Elderberry	*Sambucus cerulea*	moist to meisic	tolerates low nutrient levels	M	along watercourses				Y	
Red Elderberry	*Sambucus racemosa*	moist to wet sites	medium to rich	H	streamside, shaded forests, moist clearings and open forests	Y	Y		Y	
Soopalallie	*Shepherdia canadensis*	dry to moist	tolerates low nutrient levels	M	open forests, openings	(Y)		Y	Y	Nitrogen fixing; good for poor soils
Pink spirea	*Spiraea douglasii*	moist to wet	tolerates low nutrient levels	H	streambanks, lake margins, wet open forests	Y	Y		Y	Readily takes over wet areas due to creeping underground stems
Snowberry	*Symphoricarpus albus*	dry to moist	medium	M	ravines, open forests	Y		Y	Y	Considered poisonous
Western Yew	*Taxus brevifolia*	moist	medium	H	moist depressions and ravines	Y	Y	(Y)	Y	Seeds are poisonous
Huckleberry spp.	*Vaccinum spp.*	moist	tolerates low nutrient levels	M+	Under coniferous trees	Y	Y	Y	Y	
Highbush Cranberry	*Viburnum edule*	wet to moist sites	medium	L	streambanks, seepage areas, wet forests	Y			Y	
Herbs:										

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Oak Fern	*Gymnocarpium dryopteris*	moist to very moist	poor to rich	H	moist forest	Y	Y	Y	Y	
Sword Fern	*Polystichum munitum*	moist to very moist	medium to rich	H	moist forest	Y	Y			
Deer Fern	*Blechnum spicant*	moist to wet	medium to rich	H	moist to wet forests, streambanks, under alder		Y		Y	
Lady fern	*Athyrium dryopteris*	moist to wet	rich	H	moist to wet forests, streambanks, gullies, clearings	Y	Y	Y	Y	
Bunchberry	*Cornus canadensis*	moist to very moist	medium to rich	H	moist forest		Y	Y	Y	
Five-leaved bramble	*Rubus pedatus*	moist to very moist	poor to medium	H	moist forest, streambanks		Y		Y	
Twinflower	*Linnaea borealis*	dry to moist	poor to rich	H	open and dense forest, rocky shorelines	Y	Y	Y	Y	