AKERS PROPERTY SOLUTIONS
805 Osprey Ave.
Campbell River, BC V9H 1V8
Phone: 778-233-0446

30 May 2024

City of Campbell River
301 St. Ann's Rd.
Campbell River, BC V9W 4C7

Attention: Ms. Erin Munsie – Planner II

Dear Madam,

Re: 1505 Croation Road – Show Home ESC Measures Estimate

Please find tabled below the estimate for the ESC measures related to our current application to construct a duplex rancher at our 1505 Croation Rd property. The measures are prescribed in the ESC plan contained withing the approved RAPR report.

Item	Description	Unit	Quant	Rate	Total, $
1	Snow fencing – SPEA barrier	m	70	5.00	350.00
2	Sediment barrier using a windrow BMP	m	70	8.25	577.50
				Total	**927.50**

Should you have any queries or require further information, please do not hesitate to contact the undersigned.

Faithfully,

Glenn Blake, PEng (Non-Practicing), MMCD CA
Development Manager

Riparian Area Assessment
1505 Croation Rd (PID: 025-621-548)
March 2024

Prepared For:
D. Akers Property Solutions Ltd.
801 Osprey Ave.
Campbell River, BC V9H 1V8

Prepared by:
Mac Easton, RBTech
Monica Stewardson, RPBio

MAINSTREAM
Biological Consulting
250·287·2462
www.mainstreambio.ca

Riparian Areas Protection Regulation: Assessment Report

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

Date	March 25, 2024

I. Primary QEP Information

First Name	Monica	Middle Name		
Last Name	Stewardson			
Designation	RPBio	Company	Mainstream Biological Consulting	
Registration #	1291	Email	monica@mainstreambio.ca	
Address	1310 Marwalk Crescent			
City	Campbell River	Postal/Zip	V9W 5X1	Phone # 250-287-2462
Prov/state	BC	Country	Canada	

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

First Name	Mac	Middle Name	Robert	
Last Name	Easton			
Designation	RBTech	Company	Mainstream Biological Consulting	
Registration #	4000	Email	mac@mainstreambio.ca	
Address	1310 Marwalk Crescent			
City	Campbell River	Postal/Zip	V9W 5X1	Phone # 250-287-2462
Prov/state	BC	Country	Canada	

III. Developer Information

First Name	Glenn	Middle Name	
Last Name	Blake		
Company	D. Akers Property Solutions Ltd.		
Phone #	778-233-0446 Ext 102	Email	glenn.b@akerspropertysolutions.ca
Address	801 Osprey Ave		
City	Campbell River	Postal/Zip	V9H 1V8
Prov/state	BC	Country	Canada

IV. Development Information

Development Type	Construction: low density				
Area of Development (ha)	0.046	Riparian Length (m)	72		
Lot Area (ha)	2.35	Nature of Development	New		
Proposed Start Date	May 1, 2024	Proposed End Date	May 1, 2025		

V. Location of Proposed Development

Street Address (or nearest town)	1505 Croation Road							
Local Government	City of Campbell River				City	Campbell River		
Stream Name	Nunns Creek – unnamed tributary							
Legal Description (PID)	025-621-548				Region	Vancouver Island		
Stream/River Type	Ditch				DFO Area	South Coast		
Watershed Code	920-626200, 10.5542212.338031							
Latitude	50	0	36	Longitude	125	15	40	

RAPR Assessment Report Summary

Identified RAPR Drainage(s) and SPEA(s) (Sections 1, 2 and 3)

RAPR Drainages	Type	SPEA
Croation Road South Ditch	Ditch	5 m

Development Activities Considered for this Report (Section 1):

- Site preparation in or adjacent to the footprint of the proposed development.
- Construction of a new multifamily (duplex) dwelling at the north end of the lot.
- Trenching and tying in of sanitary, hydro and water lines to existing services on the property. Refer to the Site Plan in Section 3 for the approximate location of the existing services on the property and the proposed route for the tie-in.
- Installation of rock pits and drainages to the west of the house to allow stormwater to infiltrate to ground.
- Driveway will be installed from the new dwelling outside of the SPEA and connect to the existing driveway outside of the RAA.
- Landscaping around the new structure.

Protection Measures (Section 4):

- The SPEA boundary on the south side of the Croation Road Ditch must be located and marked by a BC Land Surveyor prior to the start of any development activities (including vegetation clearing, earth works or construction).
- A sediment fence must be erected on the SPEA boundary, be verified by the QEP and remain in place during all development activities. The fencing will serve as a temporary SPEA barrier during construction, in addition to protecting the SPEA from turbid surface runoff that may be generated.
- A permanent barrier such as a fence will be required on the SPEA boundaries at the completion of all construction and development activities.
- No disturbance is permitted within the SPEA boundaries and all existing vegetation within the SPEA must be retained.

Environmental Monitoring Requirements (Section 5):

If the QEP is not retained to carry out the field reviews and environmental monitoring, the QEP may not be able to provide assurance that the prescribed protection measures were implemented or that the work was completed to an acceptable standard.

An environmental monitor must be contacted if / when:

- Prior to start of construction to confirm the SPEA boundary has been accurately located and protected with the temporary barrier.
- Heavy rainfall occurs during excavation or construction activities with the potential to cause erosion on the property or transport sediment towards the SPEAs.
- Accidental encroachment into the SPEAs occurs.
- Construction and implementation of protection measures has been completed, to complete a post-development assessment.

Additional QEP Assessment Requirements (Sections 4 and 5):

- If any changes are made to the proposed development activities as outlined in Sections 1 and 3 (summarized above), additional assessment by a QEP is required to ensure that the SPEAs determined during this assessment and the prescribed measures are still appropriate for the proposed development activities.

Required Reports (Sections 4 and 5):

- Environmental Monitoring reports (when applicable)
- Post Development Assessment Report

Table of Contents

Introduction

This report includes the results of the *Riparian Areas Protection Regulation* (RAPR) assessment completed for the proposed development activities at 1505 Croation Road (PID: 025-621-548), Campbell River, BC (Figure 1). The proposed construction of a multi-family dwelling (duplex) within 30 m of the ditch on the south side of Croation Road triggered the requirement to complete a RAPR assessment to support an application for an Environmental Development Permit, as outlined in the City of Campbell River Sustainable Official Community Plan[1] (Figure 2).

A field assessment was completed on March 22, 2024, on behalf of D Akers Property Solutions Ltd. A previous RAPR assessment and report was completed in 2020 for the relocation of the single family house from the south half of the property to the northeast corner (Assessment #6343A). This current report also incorporates information collected during the previous RAPR assessment of the property in 2020[2]. The location of the house following the relocation is shown in Figure 3. A Post Development Assessment (PDA) was completed in June 2022 and no outstanding deficiencies were identified during the PDA.

The property had been previously developed with an existing single-family home, a barn and a detached shop. Most of the property is maintained as an open area dominated by grass and ground cover vegetation. There is an existing gravel driveway at the western property boundary that provides access from Croation Road (Photo 1). A tributary of Nunns Creek flows through the southeast portion of the property, more than 75 m from the proposed new dwelling.

This document presents the Streamside Protection and Enhancement Area (SPEA) for the RAPR ditch identified along the south side of 1505 Croation Road. The SPEA was determined according to the RAPR "Detailed" assessment methodology. Measures to protect the feature, form and function of the SPEA are presented in Section 4 of this report.

A summary of the qualifications of the primary Qualified Environmental Professional (QEP) that completed this assessment is provided in Appendix A. The different phases of the assessment were completed by the following team:

- Field assessment – Mac Easton, RBTech (Dori Manley, RPBio. Former Assessment 6343A).
- Report preparation – Mac Easton, RBTech, Monica Stewardson, RPBio

[1] City of Campbell River Sustainable Official Community Plan Bylaw No. 3475, 2012. Text and Map Amendments Bylaw 3640, 2016.
[2] Mainstream Biological Consulting. 2020. Riparian Area Assessment - 1505 Croation Road, Campbell River, BC. Prepared for Neil Chapman. Assessment # 6343A

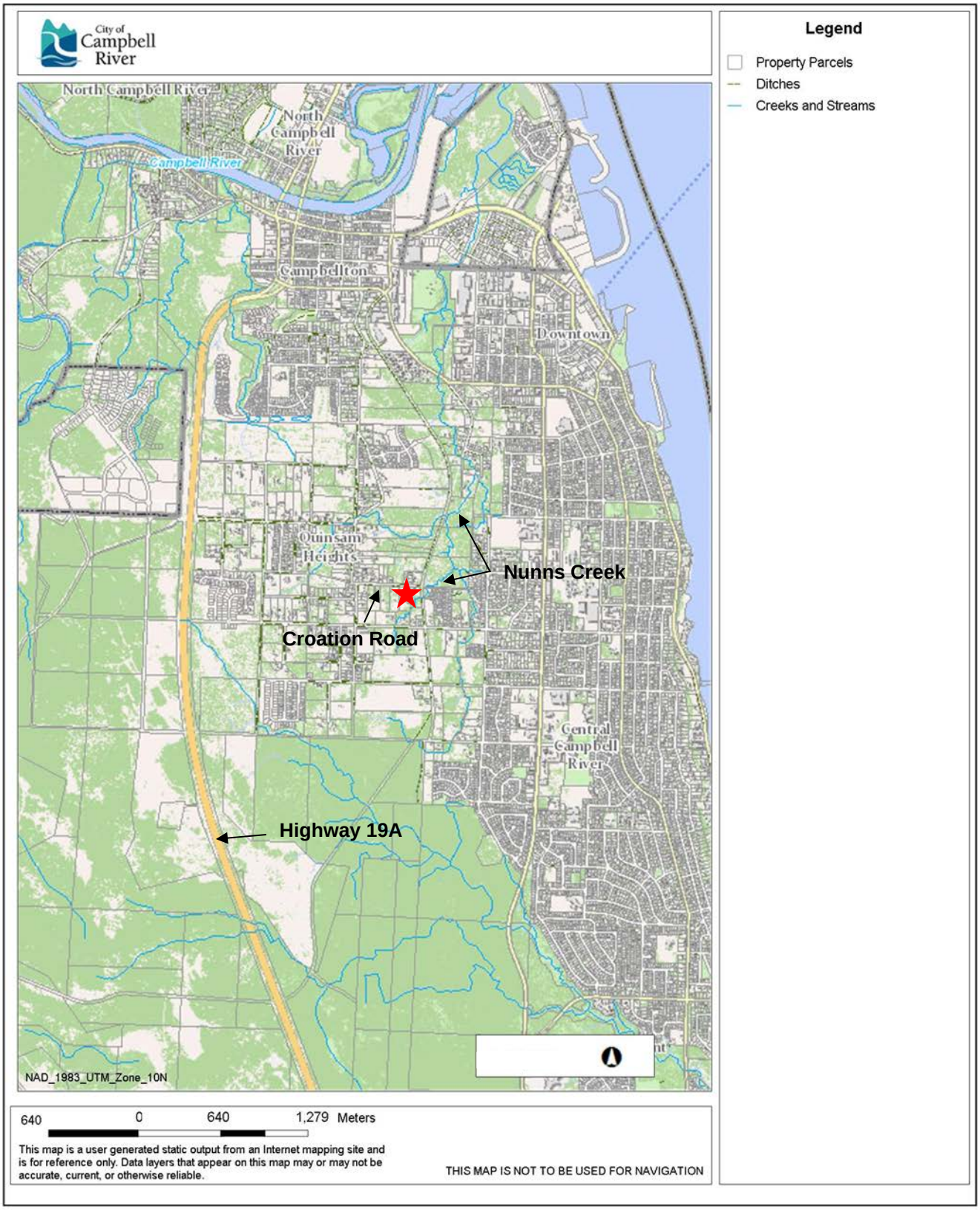

Figure 1. An overview map showing the location of 1505 Croation Road (red star) within the Nunns Creek watershed in Campbell River, BC.

Figure 2. The Environmental Development Permit Areas present within or adjacent to 1505 Croation Road (red property boundaries).

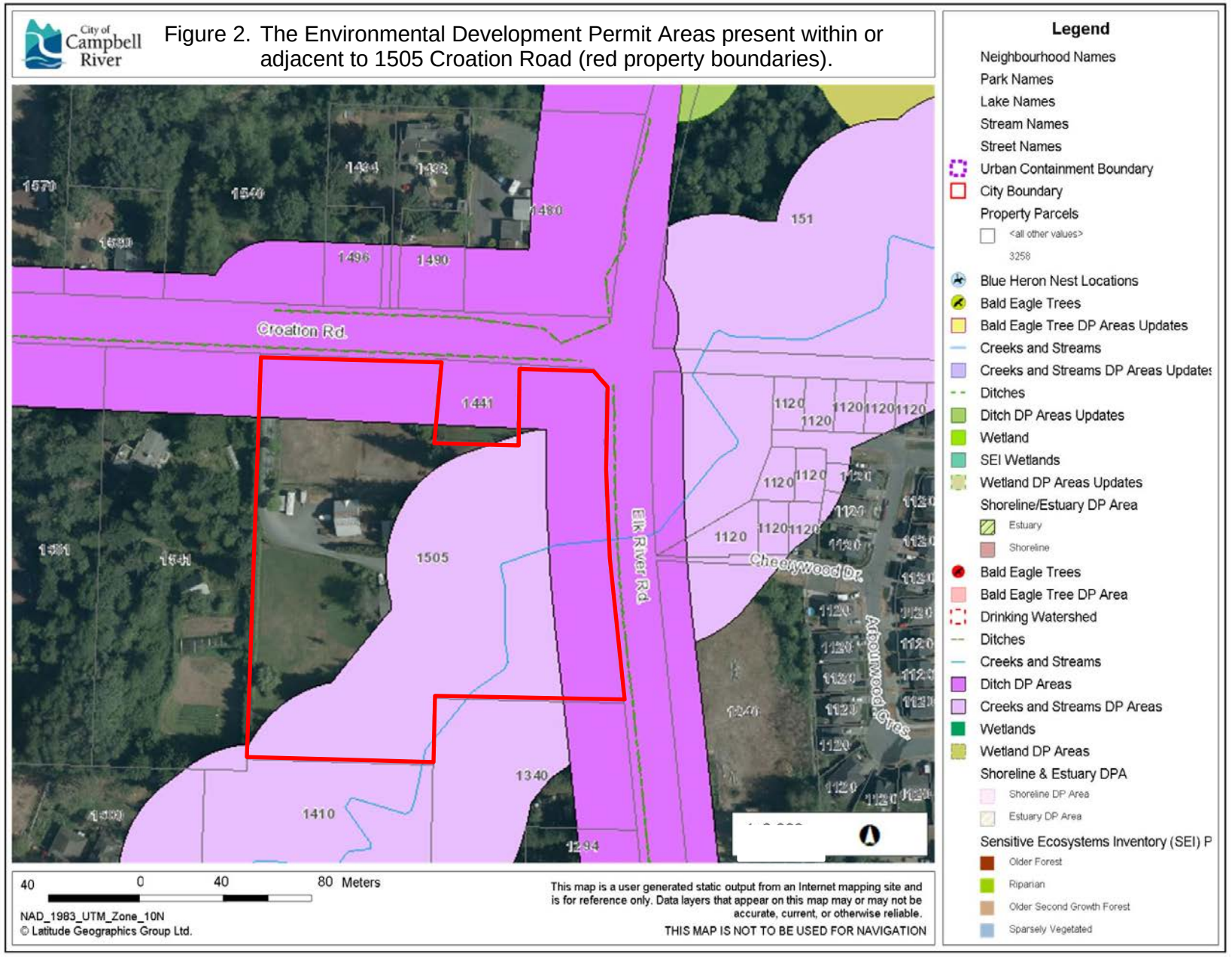

Figure 3. A 2023 Google satellite image of 1505 Croation Road, showing the proposed location of the new multi-family dwelling. The property boundaries are outlined in red. The drainage pathway of the Croation Road South Ditch is marked on the figure. The existing house on the property was moved to its current location in 2021.

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

Fisheries Resource Values

This property is located within the Nunns Creek watershed (Figure 1). The constructed ditch on the south side of Croation Road drains east and connects to Nunns Creek on the east side of the Elk River Trail (ERT) Road (Figure 3). Nunns Creek (WSC: 920-626200) is a confirmed fish bearing stream that supports populations of coho and pink salmon as well as cutthroat trout[3]. Other species of fish are likely to be present, including rainbow trout and other salmon species, particularly in the lower reaches.

The ditch along the south side of Croation Road, adjacent to 1505 Croation Road is a constructed roadside ditch. The "U" shaped ditch is fully vegetated with grass and horsetail. There was a large hedge along the top of the south bank of the ditch. The ditch substrate consisted of predominately soft organics, with rock armouring at the outlet of the culvert for the existing driveway (Photo 1 and 2). The width of the Croation Road South Ditch had the same average bankfull width of 1.9 m and gradient of 1% as measured during the 2020 assessment. As the ditch measurements have not changed, the measurements collected in 2020 will be carried forward in this RAPR assessment. The top of the south bank of the ditch was flagged with pink flagging tape.

At the downstream end of the ditch, the flow is directed under a trail in the unbuilt portion of the Croation Road ROW to a ditch on the north side of Croation Road. A crossing is present under the ERT Road, connecting the ditches to Nunns Creek on the east side of the ERT Road.

Current Riparian Condition

The property has been historically modified for residential and horse boarding use. A mature horticulture cedar hedge has been planted along the top of the ditch bank, with branches extending approximately 3.5 m south into the property. The remaining vegetation within the 30 m RAA (Riparian Assessment Area), south of the hedge, is dominated by grass and other "weedy" species characteristic of an open, disturbed site (Photo 3). Invasive plant species such as Himalayan blackberry and thistle were identified in this area. The only existing tree within the 30 m RAA west of 1441 Croation Road was a single cherry tree located more than 5 m from the top of the ditch bank. Conifer stumps, including spilt sections of the tree stems, were present along the west boundary of the adjacent property (1441 Croation Road) within the 30 m RAA. These trees had been taken down by the previous owner prior to this RAPR assessment (Photo 4) and are all located outside of the ditch and stream SPEA boundaries.

West of 1441 Croatian Road, there was no permanent development within the 30 m RAA for the south side of the Croation Road South Ditch within the property boundaries of 1505 Croation Road. East of 1441 Croation Road, the existing single-family house was present within the 30 m RAA. The house had been moved across the lot to this location in 2021, under the previous RAPR assessment report (Assessment # 6343A).

[3] Habitat Wizard Stream Report – Nunns Creek. Available at https://a100.gov.bc.ca/pub/reports/rwservlet?habitat_wizard_streams_report&p_title=%22Ministry%20of%20Environment%22&P_STREAM_ID=1146082

Proposed Development Activities

The proposed development plans for 1505 Croation Road within the 30 m RAA include the following, as shown in on the Site Plan in Section 3:

- Site preparation for house construction and landscaping.
- Construction of a multifamily dwelling (duplex) at the north end of 1505 Croation Road.
- Trenching and tying in sanitary and water lines to existing services on the property. The approximate routes of the existing services on the property are shown on the site plan in Section 3. Service connections do not require crossing through the SPEA or Croation Road South Ditch.
- A driveway will be installed from the new home, outside of the SPEA, and connect to the existing driveway outside of the RAA.
- Landscaping around the new house.
- Installation of rock pits and drainages to the west of the house to allow stormwater to infiltrate to ground.

Vegetation removal within the 30 m RAA (but outside of the SPEA) is required for the proposed development activity but is limited to the removal of maintained grass lawn, and potentially one cherry tree.

The new structure will be constructed at least 2 m from the SPEA boundary, as per the City of Campbell River SOCP bylaw requirements.

According to the *Riparian Areas Protection Regulation* "detailed" assessment methodology a 5 m SPEA was confirmed for the Croation Road South Ditch (Section 3 Site Plan). The 5 m ditch SPEA is to be measured from the top of the ditch bank as flagged in the field.

The SPEA is a <u>No Disturbance Zones</u>. All development activities must be restricted to areas outside of the SPEA boundary. Prior to development activities the SPEA boundary must be located and marked by a BC Land Surveyor.

The assessment results described in this report have been collected and presented for the specific development activities described above. Any modification to the development plans within the 30 m RAA will trigger the requirement for additional QEP assessment, and re-evaluation of the required SPEA and measures required to protect the SPEA.

Any future development activities proposed within the 30 m RAA of the ditches identified within or adjacent to the property boundaries of 1505 Croation Road or the Nunns Creek tributary will require additional review and the revision or preparation of a RAPR assessment report by a QEP. Development is defined under the *Regulation* as any of the following activities:

a) The addition, removal or alteration of soil, vegetation or a building or other structure;
b) Without limiting paragraph (a), the addition, removal or alteration of works and services described in section 506 (1) [subdivision serving requirements] of the *Local Government Act*;
c) Subdivision as defined in section 455 [definitions in relation to Part 14] of the *Local Government Act*.

Section 2. Results of Detailed Riparian Assessment (SPEA Width)

Refer to Section 3 of Technical Manual

Date: March 22, 2024

Description of Water bodies involved (number, type)	1
Stream	
Wetland	
Lake	
Ditch	1
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)

(Croation Road South Ditch):

	Channel Width(m)		Gradient (%)
starting point	1.9		
upstream	1.8		
	1.9		
	2.0		
	~~1.6~~		1
downstream	2.0		
	~~2.1~~		
	1.9		
	2.0		
	1.7		
Total: minus high /low			
mean			
	R/P	C/P	S/P
Channel Type	X		

I, Mac Easton , 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 D Akers Property Solutions 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.

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.

Polygon No:			
	LC	SH	TR
SPVT Type			X

Method employed if other than TR
N/A

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)	5							
Litter fall and insect drop ZOS (m)	5							
Shade ZOS (m) max	5	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	X	No		If non-fish bearing insert no fish bearing status report			
SPEA maximum	**5**	(For ditch use table3-7)						

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b) I am qualified to carry out this part of the assessment of the development proposal made by the developer D. Akers Property Solutions Ltd.

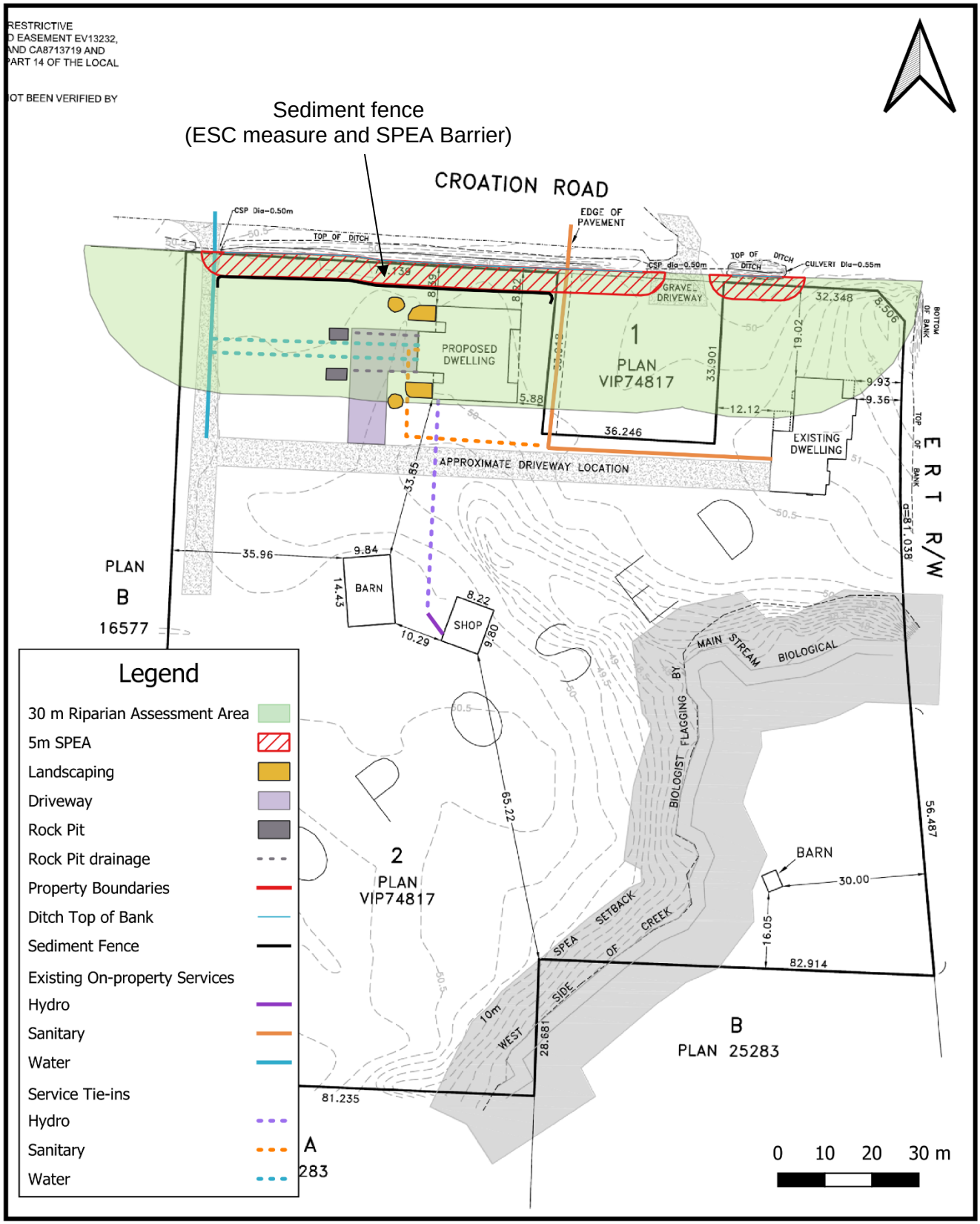
c) I have carried out an assessment of the development proposal and my assessment is set out in this Assessment Report; and

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

Comments

The Croation Road South Ditch connects to the Croation Road North Ditch, and ultimately to Nunns Creek on the east side of the ERT. The ditch could be fish bearing under high water flow given the proximity of the ditch to a known fish-bearing reach and no permanent barrier to fish migration identified. The ditch offers poor quality fish habitat and is only seasonally wetted. The ditch is man-made, has no natural headwaters, carries only local stormwater and falls within the road right of way.

Section 3. Site Plan



MAINSTREAM Biological Consulting

Datum: NAD 83
Projection: UTM Zone 10N
Map Base: McElhanney Site Plan

Map Created:
March 22, 2024

Section 4. Measures to Protect and Maintain the SPEA

1. Danger Trees	• No native trees were identified within the SPEA in the assessment area. • No danger tree measures are required because of the absence of trees in the SPEA.

I, Mac Easton and Monica Stewardson, 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 D. Akers Property Solutions Ltd;
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.

2. Windthrow	• There are no trees in the SPEA, therefore there is no risk of windthrow in the SPEA. • No windthrow measures are required because of the absence of trees in the SPEA.

I, Mac Easton and Monica Stewardson, 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 D. Akers Property Solutions Ltd;
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 portion of the property adjacent to the ditch is flat. • The SPEA will remain vegetated and there were no signs of instability in the SPEA. • No additional protection measures are required for slope stability.

I, Mac Easton and Monica Stewardson, hereby certify that:
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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 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	• No trees are present in the Croation Road South Ditch SPEA. • No measures for the protection of trees are required.

I, Mac Easton, 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 D. Akers Property Solutions Ltd;
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	• There must be no removal of vegetation, trees or soil within the SPEA. • The SPEA boundary on the south side of the Croation Road South Ditch must be marked by a BC Land Surveyor. • A sediment fence must be installed on the marked SPEA boundary, west of 1441 Croation Road prior to any development within 30 m of the Croation Road South Ditch and remain throughout construction to prevent encroachment into the SPEA. • A QEP must confirm that the SPEA has been marked and that the barrier is in place prior to any construction activity. • All workers involved with the development are to be made aware that the area beyond the barrier is a "no disturbance zones", and no machinery is to be allowed to enter that area. • No construction activities are proposed in the Croation Road South Ditch and therefore no temporary encroachment into the Croation Road South Ditch SPEA will be permitted. • A permanent barrier, such as a fence, must be constructed on the Croation Road South Ditch SPEA boundary on the south side of the ditch as shown in Section 3. • The new structure will be constructed at least 2 m from the SPEA boundary, as per City of Campbell River SOCP bylaw requirements, to provide sufficient room for building access and maintenance.
I, Mac Easton, 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 D. Akers Property Solutions Ltd; 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	• Activities requiring extensive excavation or soil movement should not be scheduled for periods when heavy rainfall or snow melt is expected. If this type of work is occurring during these periods, an Environmental Monitor should inspect the work area to confirm and document that there is no released of turbid water from the property. • Turbid water must not be directed towards the SPEA or ditch. If dewatering of the excavations is required, turbid water can be discharged at a location approved by the Environmental Monitor, outside of the SPEA. • During construction, the area between the active work areas and the SPEA should be monitored to ensure that turbid water is not draining towards the SPEA or dich. Ditching or other methods to direct water originating from the work area away from the SPEA may be required, particularly during periods of heavy rain or snowmelt. • A sediment fence must be installed along or outside the SPEA boundary adjacent to the active work area to prevent the migration of turbid water or sediment into the SPEA during construction activities. See the site plan in Section 3 for the sediment fence location. The sediment fence must be removed at the conclusion of construction or when the permanent SPEA fence is installed.

	• Spoil and fill materials cannot be stockpiled in the SPEA. Stockpiles of erodible material are to be covered when left unattended during periods of wet weather (overnight or weekends / holiday periods).
I, Mac Easton and Monica Stewardson, 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 D. Akers Property Solutions Ltd; 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	• Stormwater management features cannot be constructed within the SPEA. • During or after construction, no untreated surface run-off is to be directed towards the SPEA or ditch. • Drainage control features such as interceptor ditches / swales may be required to reduce the potential for clean surface drainage water to mobilize sediment if allowed to drain over cleared areas. • Stormwater from the new house will be directed into 2 m x 2 m x 1 m rock pits, west of the house, beyond the SPEA boundary to allow water to infiltrate to ground. No stormwater will be directed to the SPEA or the Croation Road South Ditch. See the site plan in Section 3 for the location of the infiltration rock pits.
I, Mac Easton and Monica Stewardson, 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 D. Akers Property Solutions Ltd; 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 Croation Road South Ditch is located within constructed banks. No channel movement is expected. • No floodplain concerns protection measures are required.
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Section 5. Environmental Monitoring

The property owner / developer is responsible for ensuring that the Environmental Monitoring requirements for the proposed development activities are fulfilled. The sections below describe the responsibilities relating to the Environmental Monitoring and a suggested Environmental Monitoring Plan for this proposed development project.

Description of Project Responsibilities:

QEP:

- Liasing with regulators at the request of the Developer, including reporting of Environmental Incidents as required by regulators.
- Responsible for documenting compliance with EM / ESC plans and working with Developer / contractors to modify plans or actions when necessary.
- Liasing with regulators at the request of the Developer, including reporting of Environmental Incidents as required by regulations

Developer (Akers Property Solutions Ltd):

- Ensuring that Measures are implemented as described in this report, and for implementing the EM plan.
- Retaining a QEP to act as the construction Environmental Monitor, on their behalf.
- Assisting in communication of EM plans with contractors / workers

Contractors:

- Implementing Measures, including ESC measures, as described in this report or developed in consultation with the EM and /or Developer.

Environmental Monitoring Plan:

If the QEP is not retained to carry out the field reviews and environmental monitoring, the QEP may not be able to provide assurance that the prescribed protection measures were implemented or that the work was completed to an acceptable standard.

Pre-construction requirements:

- Development of monitoring schedule tied into construction schedule and time of year. The Developer, Contractor and EM must meet to review the site and the required measures to protect the SPEA prior to the start of the work to assist with developing a monitoring schedule.
- Establishment of communication protocol between the Akers Property Solutions representative, Contractor and EM.
- The SPEA boundary must be marked by a BC Land Surveyor and a temporary barrier (sediment fence) must be installed on the SPEA boundary on the property, west of 1441 Croation Road. The SPEA location and barrier installation are to be

inspected by the EM, prior to start of any subsequent development activities in the RAA.

- The location of the SPEA and boundary fencing must be communicated to all contractors to ensure no unauthorized disruption or disturbance occurs in the SPEA. While the Developer is responsible to ensure this occurs, a qualified EM can act on their behalf.

During construction:

- Environmental monitoring during development is advised; however, the intensity of monitoring can be low due to the planned activity (low risk of environmental impacts to SPEA if measures are adhered to).
- Circumstances such as extreme rainfall or potential encroachment into the SPEA during construction should trigger developer to immediately contact a qualified EM for assistance in evaluating and mitigating any adverse impacts.
- The EM should be contacted at the conclusion of all development activities (including structure construction, landscaping, service connections, paving etc) to conduct a final site inspection prior to the Contractor demobilizing from site.

Post construction:

- **A follow up report by a QEP is required to verify that the requirements stated in this RAPR report have been met during the Development Project. The follow up report must be submitted to the Provincial Notification System. It is the responsibility of the Akers Property Solutions representative to notify the QEP when the development work has been completed and request the completion of the follow up report.**

Section 6. Photos

Photo 1
A downstream view looking east at the Croation Road South Ditch adjacent to the north property boundary of 1505 Croation Road from the existing driveway.

Photo 2
A downstream view of the culvert for the existing driveway culvert of 1505 Croation Road.

Photo 3
A view looking east through the RAA of the Croation Road South Ditch within 1505 Croation Road from the existing driveway.

Photo 4
A view looking north at the conifer stumps and wood debris along the west property boundary of 1441 Croation Road. The trees were cut down by the previous property owner and were outside of the 5 m SPEA for the Croation Road South Ditch.

Section 7. Professional Opinion

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

Date March 27, 2024

1. We, Monica Stewardson (RPBio) and Mac Easton (RBTech)

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

hereby certify that:

a) We are qualified environmental professional(s), as defined in the Riparian Areas Protection Regulation made under the *Riparian Areas Protection Act*;
b) We are qualified to carry out the assessment of the proposal made by the developer D. Akers Property Solutions Ltd., which proposal is described in section 3 of this Assessment Report (the "development proposal"),
c) We have carried out an assessment of the development proposal and our assessment is set out in this Assessment Report; and
d) In carrying out 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), we hereby provide our professional opinion that:

a) NA 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.

[NOTE: "Qualified Environmental Professional" means an individual as described in section 21 of the Riparian Areas Protection Regulation

Appendix A: Summary of Primary Qualified Environmental Professional Qualifications

Date: March 25, 2024			
Name of Primary QEP	**Monica Stewardson**		
Professional Designation	RPBio		
Professional Association	College of Applied Biology		
Registration Number	1291		
Completion of RAPR training course:	November 2022		
Riparian assessments completed or contributed to			
Report Title	**Assessment No.**	**Report Month**	**Report Year**
Primary QEP			
1661 Nursery Road	8326	June	2023
445 Old Petersen Road	8385	August	2023
800 Homewood Road	8460	September	2023
2365 & 2337 Quinsam Road Subdivision RAPR	8471	November	2023
2141 Willis Road RAPR	7021	February	2022
1920 Willis Road	7442	February	2022
Legacy Estates Phase 4 RAPR Assessment	6994A	June	2021
4380 Barge Terminal Road	7207A	August	2021
Lot B, 6883 Hammond Street	7289A	November	2021
103 South McPhedran PDA		October	2019
2020 Woodburn Road RAR Report	5237	June	2018
8000 Gold River Post Development Assessment		June	2018
0 16th Avenue RAR and Post Development Assessment		February	2017
2340 North Island Highway Post Development Assessment		November	2017
1885 Willis Road RAR and Post Development Assessment	4811	October	2017
2141 Willis Road RAR	4873	November	2017
241 Jacqueline Road RAR	4626	December	2017
1940 19th Avenue Post Development Assessment		March	2016
8000 Gold River RAR		February	2015
1920 Shetland Road RAR		June	2015
Jubilee Heights Subdivision RAR		July	2015
2340 North Island Highway RAR		August	2015
1822 South Island Hwy RAR		November	2015
8300 McIvor Lake RAR		April	2014
1780 Mo Road RAR		April	2014
8655 McIvor Lake Road RAR		July	2014
2175 Campbell River Road RAR		August	2014
103 South McPhedran RAR		October	2014
8300 McIvor Lake Road Post Development Assessment		October	2014
1940 19th Avenue RAR		January	2013
Sayward Road RAR		January	2013

Report Title	Assessment No.	Report Month	Report Year
Jubilee Estates Phases 4 to 6 RAR		April	2013
4143 Enquist Road RAR and Post Development Assessment		June	2013
2211 Park Road RAR		June	2013
1330 Creekside Way RAR and Post Development Assessment		March	2012
7050 Gold River Highway RAR		April	2012
3915 Ronald Avenue RAR		March	2011
390 Carolyn Road RAR		November	2011
York Road Subdivision RAR		January	2010
6383 Island Highway RAR		June	2010
2169 Quenville RAR		June	2010
Cove Place RAR		July	2010
Enns Road RAR		July	2010
1424 South Alder RAR		April	2008
1120 Evergreen Road Subdivision		June	2008
1271 Petersen Road RAR		March	2007
Lot 2 RAR		June	2007
Willow Creek Redekop RAR		July	2007
1917 Pinecrest Road RAR		July	2007
Vanstone Road RAR		August	2007
Perkins Road RAR		October	2007
Alice Road RAR		August	2006
Ubedam Creek RAR		September	2006
Secondary QEP			
265 Muschamp Road RAPR	8072	January	2023
205 & 271 Muschamp Road RAPR	8073	January	2023
Jubilee Heights Phase VI RAPR	8241	April	2023
1500 Evergreen Road	8113	January	2023
Jubilee Heights Phase 5 RAPR	7497	March	2022
6735 Island Highway West RAPR	8061	December	2022
249 Hembrough Road RAPR	7230	November	2021
1505 Croation Road RAPR	6343A	August	2020
1530 Grayling Drive RAR	5626	March	2019
2100 Evergreen Road RAR		January	2017
2099 Evergreen Road RAR		April	2017
700 Petersen Road RAR		June	2017
2699 & 2701 Soderholm Road RAR		October	2017
Lot 48 Seawave Road RAR		July	2016
3830 Fraser Road RAR		August	2016
4190 Enquist Road RAR		October	2016
1641 Perkins Road RAR		November	2015
146 Crawford Road RAR		June	2010
2460 Island Highway RAR		June	2009

MEMORANDUM

Presented To:	Glenn Blake, Development Manager, Akers Property Solutions		
Addressed To:	Trevor Sweeney, Building Services Manager, City of Campbell River		
Cc:	Rich Feucht, Development Engineering Manager, City of Campbell River Erin Munsie, Planner II, Development Services, City of Campbell River		
From:	Francis Gonella, P.Eng., Highland Engineering Services Ltd.		
Re:	1505 Croation Road Showhome Servicing		
Proj No.:	4447	**Date:**	June 14, 2024

K:\Projects\4447\07 Design\REPORTS\Showhome Servicing Memo\4447 MEM 4447.02 REV B 1505 Croation Road.docx

1. Introduction

This memo addresses the city's requirements for constructing a showhome at 1505 Croation Road, which is planned for future subdivision into two lots. Lot 1 will include the existing dwelling, while Lot 2 will be further subdivided into 30 bareland strata lots. The legal description of the lot is "Lot 2, District Lot 75, Sayward Land District, Plan VIP74817".

Akers Property Solutions (APS) intends to build a showhome on the site before subdivision. The City of Campbell River (the city) has outlined seven prerequisites for the building permit application, of which this memo addresses only items 5 through 7. Prerequisites 5 through 7 are outlined below, while the full list of requirements is enclosed with this memo.

CCR building permit requirements:

5. "The onsite storm water disposal system will need to be designed and certified by a P.Eng. and a covenant registered on the title for location and maintenance. The design will need to be submitted with the BP application and the covenant registration will need to be complete prior to occupancy."

6. "The water service design will need to be confirmed adequate for all the dwellings connected by a P.Eng. as the existing building is serviced by a ¾" service and the run to the show home is somewhere in the neighbourhood of an additional 150'."

7. "Unless the sanitary design can be confirmed to not require any pumping (gravity only) it will need to be designed and certified by a P.Eng."

2. Existing Structures and Services

Existing Structures

The lot consists of an existing dwelling, barn, and shop, all of which are currently uninhabited, as confirmed by APS.

Existing Services

The lot has a 19mm water service and an abandoned 150mm sanitary service located near the northwest corner. An additional sanitary service is provided through a 3m-wide right-of-way (along the west property line of 1441 Croatian Road), specifically serving the existing dwelling located at the northeast corner of the lot. This dwelling is also connected to a 150mm stormwater service, which discharges into a roadside ditch along an undeveloped portion of Croatian Road. Overhead power and telecommunication services are available to both the existing residential and non-residential structures on the property.

3. Water Service

The developer has two options for the water services:

Option 1: Replace the existing 19mm water service to the lot with a 38mm diameter water service to ensure adequate flow and pressure for the showhome and the existing shop and dwelling.

Option 2: Utilize the proposed 200mm water service connection to Roosevelt Place that will be installed during the subdivision works as part of the subdivision application P2300091.

Both water servicing options will provide adequate flow and pressure for the development and meet the requirements of the National Plumbing Code of Canada 2020.

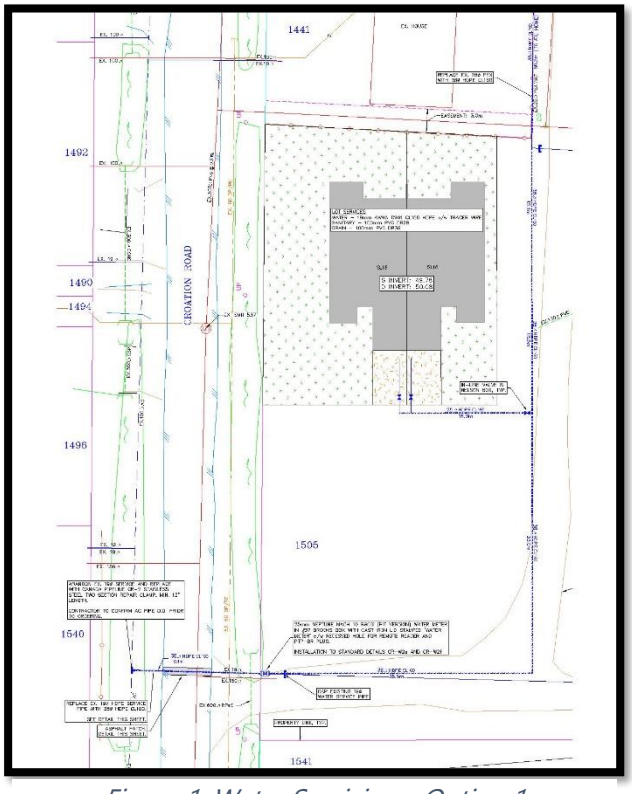


Figure 1: Water Servicing - Option 1

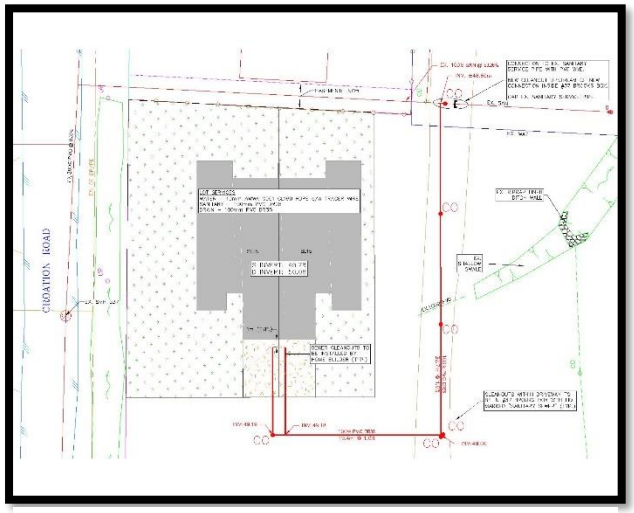


Figure 2: Sanitary Servicing

4. Sanitary Service Suitability

The duplex showhome can be serviced using the existing sanitary service to the site. No pumping will be required as the design operates on gravity only. Peak flows from the three dwellings are expected to be negligible for the 100mm sanitary service pipe, which has a capacity of approximately 10 L/s (158 gpm).

5. On-site Stormwater Disposal System

Stormwater from the duplex showhome can be directed to existing on-lot drainage courses. Designated stormwater retention is not required for drainages that discharge on-lot, based on discussions with the city. The pipe size is designed to handle the anticipated flows, and the existing watercourse can accommodate these flows.

Figure 3: Stormwater Servicing

6. Conclusion

This memo addresses the city's requirements for the showhome servicing at 1505 Croation Road, focusing on the prerequisites for the building permit application. Stormwater disposal can drain directly to on-lot drainage courses. The water service for the showhome can be connected via two options, both meeting the flow and pressure requirements of the National Plumbing Code of Canada 2020. The existing sanitary service connection can be utilized without the need for pumping, relying solely on gravity.

Signed and Sealed

Francis Gonella, P.Eng.

Highland Engineering Services Ltd.

Enc. 1. City of Campbell River Email BP Prerequisites.

Francis Gonella

From: Erin Munsie <Erin.Munsie@campbellriver.ca>
Sent: April 2, 2024 2:14 PM
To: Glenn Blake
Cc: Amanda Thorsen; Monica Stewardson; Meghan Norman; Francis Gonella
Subject: RE: 1505CRO - Show Home - MIP

Follow Up Flag: Flag for follow up
Flag Status: Completed

Hello Glenn,

Thank you for your response. Based on your answers below, our Engineering and Building departments have provided the following comments for consideration now and in the future:

1. Servicing off of the existing home simplifies requirements for Development Engineering. Please note that you would later be required to disconnect that service once the 2 lot, fee simple subdivision is approved.
2. If you will be requesting a new driveway to the duplex, what will be the implication to the existing ditch and should it be included in the RAPR assessment?
3. It has come to our knowledge based on a QEP assessment prepared for a neighbouring property that there is a channelized stream that is culverted from the east property boundary of 1541 Croation Road running downstream through 1505 Croation and to the Nunns Creek Tributary. To better understand whether this pipe could have any implications to the proposed show home building permit, please show the pipes alignment on a plan and identify any relevant QEP information / setbacks etc (if applicable).
4. If the plan is to construct attached buildings on bare land strata lots there will need to be consideration of party wall agreements, as the only common property is generally the roads, service mains etc. and not the common building elements.
5. The onsite storm water disposal system will need to be designed and certified by a P.Eng. and a covenant registered on the title for location and maintenance. The design will need to be submitted with the BP application and the covenant registration will need to be complete prior to occupancy.
6. The water service design will need to be confirmed adequate for all the dwellings connected by a P.Eng. as the existing building is serviced by a ¾" service and the run to the show home is somewhere in the neighbourhood of an additional 150'.
7. Unless the sanitary design can be confirmed to not require any pumping (gravity only) it will need to be designed and certified by a P.Eng.

If you have any questions regarding these comments, please let me know.

Thanks,
Erin

Erin Munsie
Planner II
Development Services

City of Campbell River
Tel: 250.286.5768
Fax: 250.286.5761

INTER-LOT STORMWATER PIPELINE: 1541 TO 1505 CROATION ROAD

Prepared For:

AKERS PROPERTY SOLUTIONS

GENERAL NOTES

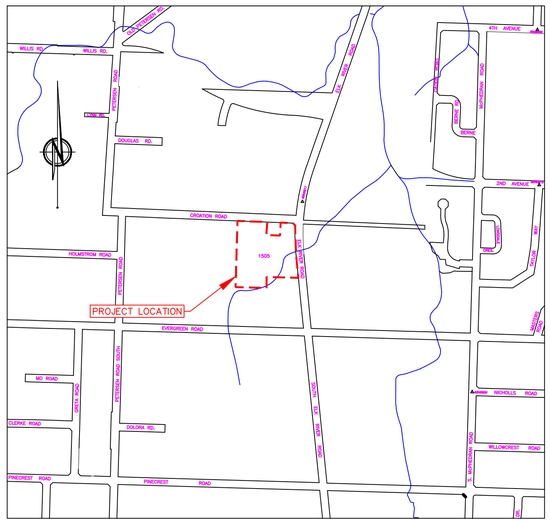
ALL ELEVATIONS ARE GEODETIC BASED ON INTEGRATED SURVEY MONUMENT 92H0811 (ELEV: 49.867m) LOCATED ON SOUTH ELK RIVER ROAD, APPROXIMATELY 340m N. OF EVERGREEN ROAD.

LEGAL DESCRIPTION

LOT 2, DISTRICT LOT 75, SAYWARD LAND DISTRICT, PLAN VIP74817

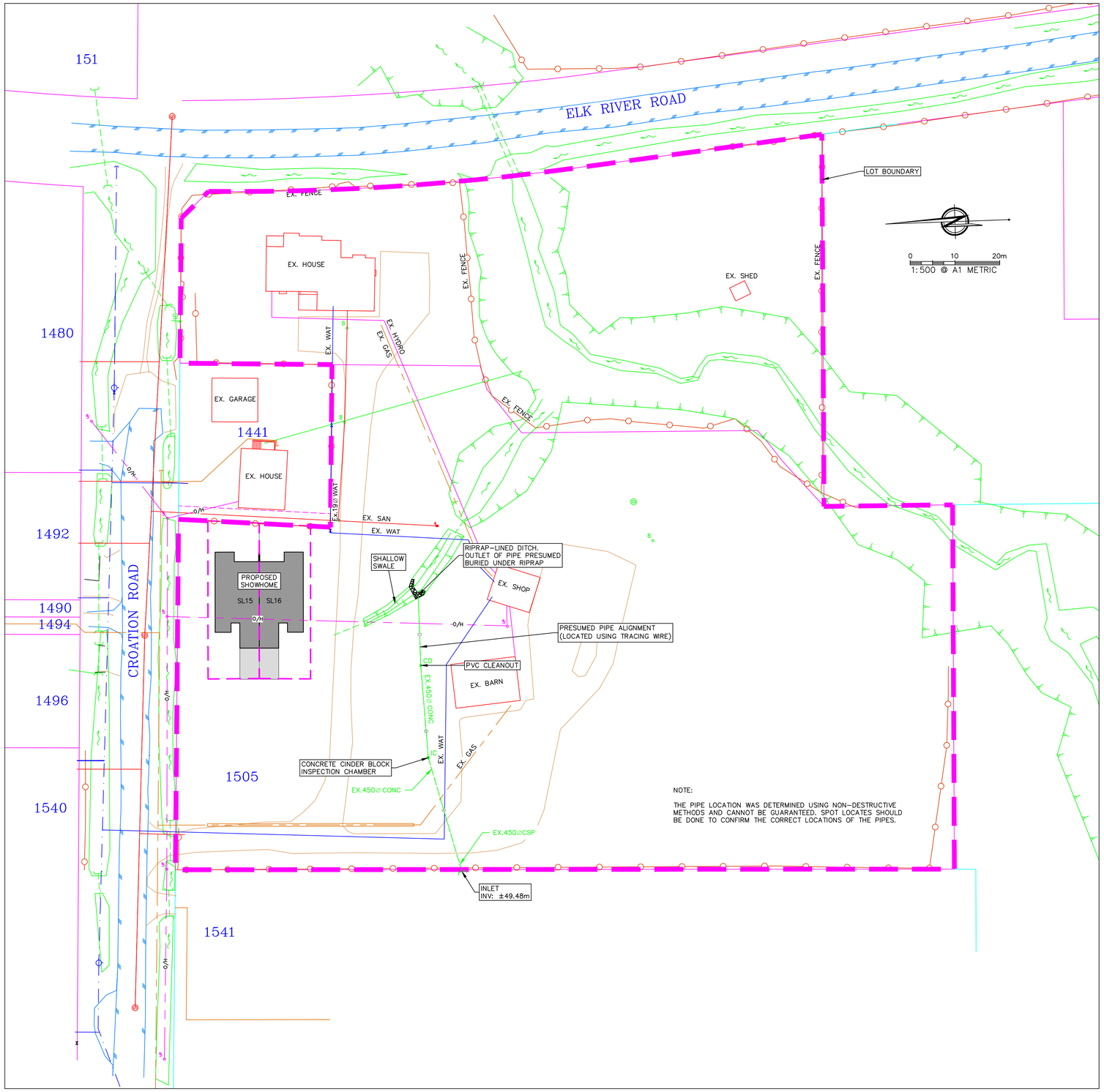
EXISTING UTILITIES

LOCATIONS OF EXISTING UTILITIES SHOWN ARE DERIVED FROM FIELD SURVEY, AS CONSTRUCTED DRAWINGS AND THIRD PARTY SOURCES. THIS INFORMATION CANNOT BE GUARANTEED. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE LOCATIONS OF ALL UTILITIES AT THE START OF THE CONTRACT AND INFORM THE ENGINEER OF ANY DISCREPANCY.



KEY PLAN

NTS



NOTE:

THE PIPE LOCATION WAS DETERMINED USING NON-DESTRUCTIVE METHODS AND CANNOT BE GUARANTEED. SPOT LOCATES SHOULD BE DONE TO CONFIRM THE CORRECT LOCATIONS OF THE PIPES.

NOT FOR CONSTRUCTION
FOR INFORMATION

BC 1 CALL — CALL BEFORE YOU DIG! 1-800-474-6126 or by CELLULAR *6126 — CALL AT LEAST 3 FULL WORKING DAYS BEFORE YOU PLAN TO DIG

NO.	ISSUE	BY	YY/MM/DD
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B	FOR INFORMATION	FG	24/05/24
A	FOR INFORMATION	FG	24/05/21

EXISTING	LEGEND	DESIGN
T	U/G TELEPHONE	T
H	U/G HYDRO	H
G	NATURAL GAS	G
	PERMEABLE PAVING	

EXISTING	LEGEND	DESIGN
S	SANITARY SEWER	S
D	STORM DRAIN	D
W	WATER MAIN	W
P	PAVEMENT	P
C	CURB & GUTTER	C
	SIDEWALK	
	INFILTRATION SWALE	

EXISTING	LEGEND	DESIGN
O.D.	OPEN DITCH	O.D.
S	SANITARY MANHOLE	S
D	STORM MANHOLE	D
SIDE INLET / TOP INLET	CATCH BASIN	SIDE INLET / TOP INLET
H	FIRE HYDRANT	H
W	WATER VALVE	W
U.P.	UTILITY POLE	U.P.

DESIGNED: FG — SCALE: AS SHOWN
DRAWN: FG — DATE: MAY 2024
CHECKED: FG — DATE: MAY 2024
APPROVED: --- — DATE: ---

HIGHLAND Engineering Services Ltd.
Permit to Practice No. 1000844
#104-950 Alder Street, Campbell River, B.C. V9W 2P8
(250) 287-2825
highland@highland-eng.ca
www.highland-eng.ca

TITLE:
AKERS PROPERTY SOLUTIONS
STRATA DEVELOPMENT
1505 CROATION ROAD
CAMPBELL RIVER, BC
INTER-LOT STORMWATER PIPELINE

CITY DWG #: ---
PROJECT: 4447
SHEET 1 OF 1
ISSUE B

K:\Projects\4447\07 Design\DWG\4447 1541 Croation Rd Stormwater Pipe.dwg May 24, 24 9:28:59 AM

DESTROY PRINTS OF PREVIOUS REVISION