

Committee Report

Date of Report: August 3, 2022
Date & Type of Meeting: August 17, 2022, Rural Affairs Committee
Author: Zachari Giacomazzo, Planner
Subject: SITE SPECIFIC FLOODPLAIN EXEMPTION
File: F2203D-01110.890-KERSWELL-FLD00064
Electoral Area/Municipality: Area D

SECTION 1: EXECUTIVE SUMMARY

This report seeks the Board's consideration of a site specific floodplain exemption application at 207 Nichols Drive, Schroeder Creek, Electoral Area 'D'.

The applicant is requesting a site specific floodplain exemption to permit the construction of a new residence with a minimum floor elevation above natural ground surface of 0.6 metres and a minimum foundation depth below natural ground elevation of 0.6 metres. The *Floodplain Management Bylaw* specifies a minimum required floor elevation above natural ground surface is 1.0 metres and the foundation of the building shall be constructed to a distance of at least 1.0 metres below Natural Ground Elevation.

Staff recommends that the Board approve the site specific floodplain exemption subject to the registration of a Section 219 restrictive covenant for the exemption, indemnifying the Regional District and confirming that the design is safe for the intended residential use.

SECTION 2: BACKGROUND/ANALYSIS

GENERAL INFORMATION	
Property Owners:	Kevin John Kerswell
Property Location:	207 Nichols Drive, Schroeder Creek, Electoral Area 'D'
Legal Description:	LOT 39, PLAN NEP14098, DISTRICT LOT 188, KOOTENAY LAND DISTRICT (PID 005-571-871)
Property Size:	0.17 hectares
OCP Designation:	Country Residential (RC)
Zoning:	Not applicable – unzoned

SURROUNDING LAND USES	
NORTH:	Residential and accessory land uses - unzoned
EAST:	Residential and accessory land uses - unzoned
SOUTH:	Residential and accessory land uses - unzoned
WEST:	Residential and accessory land uses - unzoned

Site Context

The subject property is designated Country Residential (RC) and is unzoned as per Electoral Area 'D' Comprehensive land Use Bylaw No. 2435, 2016. The site is located in Schroeder Creek, a small residential community with approximately 40 similarly sized residential properties. The subject property is located within a Non-Standard Flooding and Erosion Area (NFSEA) since it is within the alluvial fan of Schroeder Creek (see Figure 2). The proposed new home site is towards the rear of Lot 39.

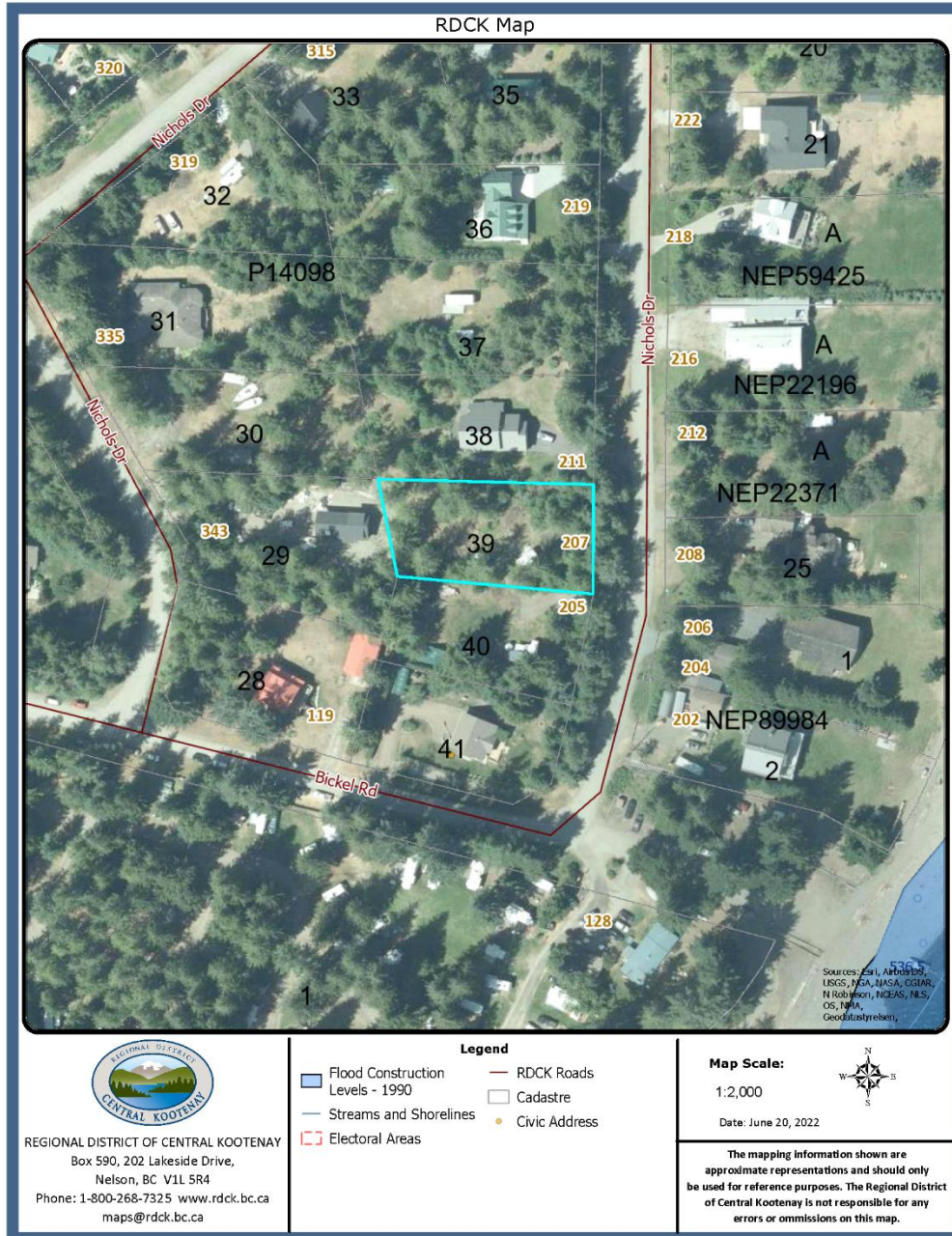


Figure 1: Location Overview



Figure 2: Non Standard Flooding and Erosion Area Overview

Development Proposal

This application is for a Site Specific Floodplain Exemption to permit the construction of a new residence with a minimum floor elevation above natural ground surface of 0.6 metres and a minimum foundation depth below natural ground elevation of 0.6 metres. Pursuant to Section 9.3 of the RDCK's *Floodplain Management Bylaw No. 2080, 2009 and Schedule "E"* Development on land within a Non-Standard Flood and Erosion Rating of '2' shall be a minimum of 1 metre above natural ground surface. Pursuant to Section 9.6, where structural methods are used to elevate the underside of a floor system or top of pad, the foundation of the building shall be constructed to a distance of at least 1.0 metres below Natural Ground Elevation.

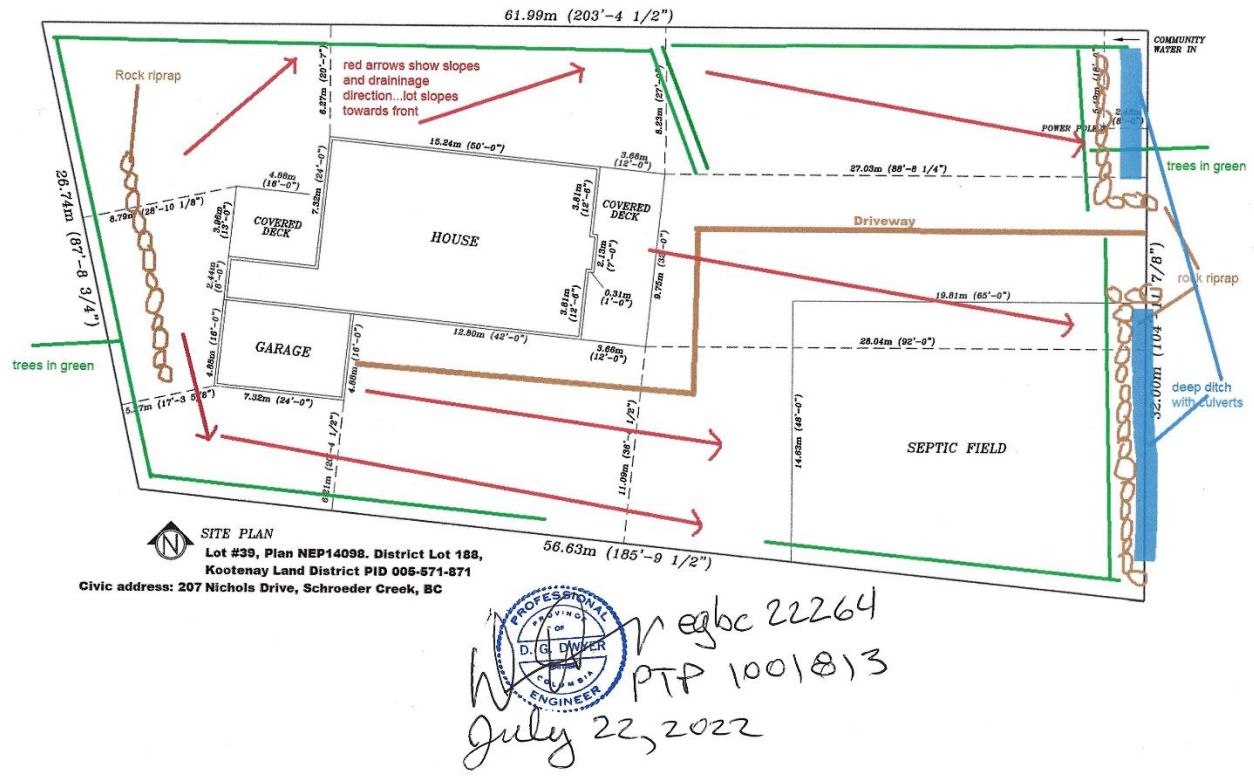


Figure 3: Site Plan

Legislative Framework and Applicable Policy

Under Section 524 of the *Local Government Act (LGA)*, a local government may exempt a person from the application of a floodplain bylaw in relation to a specific building if the local government considers it advisable and either:

- Considers that the exemption is consistent with the Provincial Guidelines; or
- Has received a report that the land may be used safely for the use intended where such a report is certified by a person who is a professional engineer or geoscientist and experienced in geotechnical engineering.

The Board adopted 'Terms of Reference for Professional Engineers/Geoscientists undertaking Geotechnical Reports/Flood Hazard Assessment Reports' to outline basic information that should be included in such reports.

The Report prepared by Dwyer Engineering and Construction Limited., dated June 7, 2022 and the subsequent revisions dated July 22, 2022, were submitted in conjunction with the application for an exemption (please see Attachment A) and meet the statutory requirements pursuant to Section 524 of the Local Government Act. The revised report dated July 22, 2022 verifies that “the land may be used safely for its intended use”.

SECTION 3: DETAILED ANALYSIS

3.1 Financial Considerations – Cost and Resource Allocations:

Included in Financial Plan: Yes No Financial Plan Amendment: Yes No
Debt Bylaw Required: Yes No Public/Gov’t Approvals Required: Yes No

The \$500 fee for a Site Specific Floodplain Exemption application has been paid pursuant to the RDCK’s *Planning Procedures and Fees Bylaw No. 2457, 2015*.

3.2 Legislative Considerations (Applicable Policies and/or Bylaws):

Under Section 524 of the LGA, the Board has the authority to exempt a development proposal from “requirements in relation to floodplain areas” provided a report prepared by a professional engineer or geoscientist is received stating that the land may be used safely for the use intended.

3.3 Environmental Considerations

No environmental impacts are anticipated on this developed site.

3.4 Social Considerations:

No negative social impacts are associated with the site specific exemption application.

3.5 Economic Considerations:

No economic considerations are anticipated in response to this land use application.

3.6 Communication Considerations:

In accordance with the RDCK’s *Planning Procedures and Fees Bylaw No. 2457, 2015* staff referred the application to all relevant government agencies, internal RDCK departments, the Local Area Director and the Advisory Planning and Heritage Commission for Electoral Area ‘D’ for review. The following comments were received:

Ministry of Forests, Lands, Natural Resource Operations and Rural Development (MFLNRORD)

“Habitat Management’s legislated and professional responsibilities include, but are not limited to: the provincial Water Sustainability Act, the Wildlife Act, the Forest and Range Practices Act (FRPA) and the Government Actions Regulation under FRPA, as well as having provincial responsibility for the federal Species at Risk Act.

These are comments based on the information provided by the proponent in the referral package. They do not represent a comprehensive evaluation, rather some advice on what to consider for mitigation of possible negative ecosystem impacts of the proposed works. They also do not remove the obligation of the proponent to comply with ALL applicable laws and statutes.

This floodplain exemption for the development of a single family dwelling should not create significant adverse environmental impacts if the proponent complies with obligations under the federal Fisheries Act, Species at Risk Act, BC Wildlife Act, BC Riparian Areas Protection Act (where applicable), Local Government Act or any other legislation related to the proposed works.

Some general considerations and recommendations during a development are listed in the table below but are not necessarily directly related to the floodplain exemption proposal submitted.”

Habitat Comments

Concern	Details
Invasive Species	<p>To support ongoing treatment efforts in the vicinity, an invasive plant management strategy is necessary throughout activities and reclamation. Practices should prevent introduction and reduce spread/establishment of invasive plants on site. To control invasive plants:</p> <ul style="list-style-type: none"> • Treat invasive plants prior to any activities (preferably using a qualified professional). • Ensure that equipment brought onto site is free of soil and plant material to reduce the possibility of invasive plant species spread/establishment. <p>The proponent should maintain records of herbicide treatments, and should report invasive plants using the Report-A-Weed program (https://www.reportaweedbc.ca/)</p> <p>The primary risk of concern from the proposed activities is introduction and spread of invasive plants. Invasive plants are typically introduced to British Columbia through human activities. These invasive plants lack natural predators and pathogens that would otherwise keep their populations in check. Invasive plants often establish themselves in soils disturbed from development of roads, utility lines, trails, commercial recreation sites, agriculture, etc. Once established, invasive plants have a tremendous capacity to invade adjacent, undisturbed natural plant communities displace wildlife and disrupt natural ecosystem functions.</p>
Tree Removal	<p>See Section 34 of the <i>Wildlife Act</i> regarding tree removal. Remove trees outside of the sensitive nesting period (generally April to August), and check for existing or active nests prior to tree removal. Avoid the removal of large diameter trees (dbh > 30 cm: live and dead), especially deciduous, and that are actively used by wildlife (e.g. contains visible nests and tree cavities).</p>
Migratory Bird Window	<p>If works will occur within the breeding bird window (generally April 15 to August 15) the applicant should be aware of requirements under the Migratory Bird Convention Act for addressing incidental take. More information can be found at https://www.canada.ca/en/environment-climate-change/services/avoiding-harm-migratory-birds.html</p>
Aquatic Habitat	<p>Any works within or adjacent to a stream are subject to the Provincial Water Sustainability Act. Please review the Kootenay Region’s Terms and Conditions for Instream works and timing windows available through the Kootenay Boundary Region drop down menu at: https://www2.gov.bc.ca/gov/content/environment/air-land-</p>

	water/water/water-licensing-rights/working-around-water/regional-terms-conditions-timing-windows to ensure that you can abide by these guidelines.
Human-wildlife conflicts	<p>The proponent should ensure appropriate security measures for wildlife attractants (ie. garbage, compost, gardens, pet food etc.) to avoid wildlife habituation.</p> <p>The BC <i>Wildlife Act</i> states that: (1) A person must not (a) intentionally feed or attempt to feed dangerous wildlife or, (b) provide, leave or place an attractant in, on or about any land or premises with the intent of attracting dangerous wildlife.</p>

Ministry of Transportation and Infrastructure

“MOTI does not have any concerns with the proposal at this time.”

FortisBC Inc.

“There are no FortisBC Inc (Electric) (“FBC(E)”) facilities affected by this application. As such FBC(E) has no concerns with this circulation.”

Interior Health (IH)

“Any home or building that is not connected to a community sewer system needs a method for getting rid of human waste. All buildings with indoor plumbing must have a sewerage system in compliance with the [BC Sewerage System Regulation](#). This includes consideration of the 20 year flood elevation (if applicable). I’ve provided a link to the page on our public website that speaks to [Sewerage, Subdivisions & Healthier Industries | IH \(interiorhealth.ca\)](#) for the applicants reference.

We note that the site plan for Lot 39 included in the referral package indicates that the red arrows show the slope and drainage direction for the property including towards (and through) the proposed sewerage disposal area. Typical standard practice is to ensure that any surface or subsurface drainage is directed away from the disposal area to ensure that onsite sewerage does not contaminate water and will not cause a health hazard by coming to the surface of the ground, both in the present and in the future.”

Building Department

“The Qualified Professional deems the property is fit for the purpose and can be safely used by all occupants.”

Electoral Area ‘D’ Advisory Planning and Heritage Commission

“That the Electoral Area D Advisory Planning and Heritage Commission SUPPORT the Floodplain Exemption Application to Kevin and Simone Kerswell for the property located at 207 Nichols Drive in Schroeder Creek, BC and legally described as Lot 39 District Lot 188 Kootenay District Plan 14098 for construction of a single family dwelling with a minimum elevation of 0.6 metres above natural ground and 0.6 metres below natural ground, provided that the noted exemption is registered on the land title.”

3.7 Staffing/Departmental Workplace Considerations:

Should the Board support the requested site specific floodplain exemption to reduce the required floor elevation above natural ground surface and foundation depth below natural ground elevation including registration of a restrictive covenant on title, construction of the dwelling could proceed in accordance with the Building Permit (BP026995).

3.8 Board Strategic Plan/Priorities Considerations:

This application falls under the operational role of Planning Services.

SECTION 4: OPTIONS & PROS / CONS

Planning Discussion

Staff have reviewed this site specific floodplain exemption application, and conducted a site visit. The proposed location of the dwelling is located approximately 260 metres away from the closest point of Schroeder Creek and is located within a NSFEA rating of '2' as per the RDCK *Floodplain Management Bylaw No. 2080, 2009*.

Under Sections 9.3 to 9.6 and NSFEA Rating '2' in Schedule 'E' of the RDCK's *Floodplain Management Bylaw No. 2080, 2009* the minimum required floor elevation above natural ground surface is 1.0 metres and the foundation of the building shall be constructed to a distance of at least 1.0 metre below Natural Ground Elevation where structural methods (i.e. foundation walls) are used to elevate the floor system or top of pad.

Other than the site specific floodplain setback exemption requested to allow a minimum floor elevation above natural ground surface of 0.6 metres, and a minimum foundation depth below natural ground elevation of 0.6 metres the proposal is consistent with the relevant General Residential and Country Residential objectives and policies pursuant to the *Electoral Area 'D' Comprehensive Land Use Bylaw No. 2435, 2016*.

Planning staff support the requested floodplain exemption, since:

- The applicants have engaged a professional engineer, Dwyer Engineering and Construction Limited, who has submitted a report confirming that the proposed siting of the dwelling, as designed, is safe for the use intended;
- The proposed siting of this residence is outside of the 30 metre Watercourse Development Permit area under *Electoral Area 'D' Comprehensive Land Use Bylaw No. 2435, 2016*; and,
- The flood hazard assessment report submitted has been reviewed by Regional District staff and meets the necessary assurance requirements and is consistent with the Provincial flood hazard land use management guidelines.

OPTIONS

Option 1: That the Board APPROVE a Site Specific Floodplain Exemption to permit the construction of a new residence with a minimum floor elevation above natural ground surface of 0.6 metres, and a minimum foundation depth below natural ground elevation of 0.6 metres in accordance with the Engineering Report prepared by Dwyer Engineering and Construction Limited for the property located at 207 Nichols Drive, Schroeder Creek, Electoral Area 'D' and legally described as LOT 39, PLAN NEP14098, DISTRICT LOT 188, KOOTENAY LAND DISTRICT (PID 005-571-871) subject to preparation by Kevin Kerswell of a restrictive covenant under Section 219 of the Land Title Act and Section 56 of the Community Charter in favour of the Regional District of Central Kootenay.

Option 2: That the Board NOT APPROVE a Site Specific Floodplain Exemption to permit the construction of a new residence with a minimum floor elevation above natural ground surface of 0.6 metres, and a minimum foundation depth below natural ground elevation of 0.6 metres in accordance with the Engineering Report prepared by Dwyer Engineering and Construction Limited for the property located at 207 Nichols Drive, Schroeder Creek, Electoral Area 'D' and legally described as LOT 39, PLAN NEP14098, DISTRICT LOT 188, KOOTENAY LAND DISTRICT (PID 005-571-871)

SECTION 5: RECOMMENDATION

That the Board APPROVE a Site Specific Floodplain Exemption to permit the construction of a new residence with a minimum floor elevation above natural ground surface of 0.6 metres, and a minimum foundation depth below natural ground elevation of 0.6 metres in accordance with the Engineering Report prepared by Dwyer Engineering and Construction Limited for property located at 207 Nichols Drive, Schroeder Creek, Electoral Area 'D' and legally described as LOT 39, PLAN NEP14098, DISTRICT LOT 188, KOOTENAY LAND DISTRICT (PID 005-571-871) SUBJECT to preparation by Kevin Kerswell of a restrictive covenant under Section 219 of the Land Title Act and Section 56 of the Community Charter in favour of the Regional District of Central Kootenay.

Respectfully submitted,



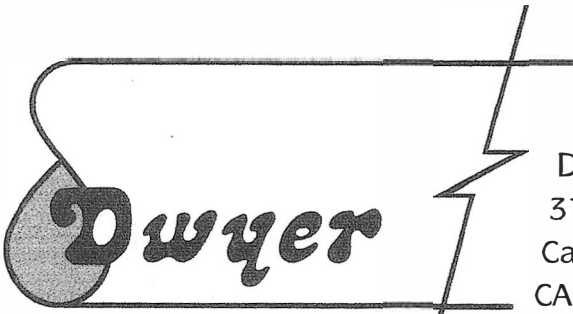
Zachari Giacomazzo

CONCURRENCE

Planning Manager – Nelson Wight
General Manager of Development Services – Sangita Sudan
Chief Administrative Officer – Stuart Horn

ATTACHMENT:

Attachment A – Engineering Report prepared by Dwyer Engineering and Construction Limited



DWYER ENGINEERING AND CONSTRUCTION LIMITED
3721 - 14A Street S.W.
Calgary, Alberta
CANADA T2T 3Y1

Telephone
(403) 243-1246

Also Operating out of / 645 Meadow Creek Forest Service Road, Meadow Creek, BC
(250) 366-4342

To whom it may concern

Attn: Kevin Kerswell;

June 7, 2022

Regarding your lot at 207 Nichols Drive in the Schroeder point Community and BP 26995 in the approved subdivision at Schroeder Creek Point including the TERMS OF REFERENCE requirements back in November 2009.

Legal: Lot 39, District Lot 188 Kootenay Land District Plan 14098

FLOOD CONSTRUCTION LEVEL RDCK Floodplain Management Bylaw No. 2080, 2009 and Non-Standard Flooding and Erosion Ratings (NSFER) and your NSFER Rating 2

Please be advised that I am a Licensed Professional Engineer in the Province of BC (egbc#22264) & Permit to Practice; PTP # 1001813.

I have completed the required engineering reports attached to this application in accordance with terms of reference for my client Mr. Kevin Kerswell.

I acknowledge that the report is prepared for the Regional District of Central Kootenay as a pre-condition to the issuance of a Site-Specific Exemption from the provisions of Floodplain Management Bylaw 2080, 2009 under Section 910 of the Local Government Act, and any conditions in this report shall be included in a Restrictive Covenant under Section 219 of the Land Title Act and filed against the title of the subject property.

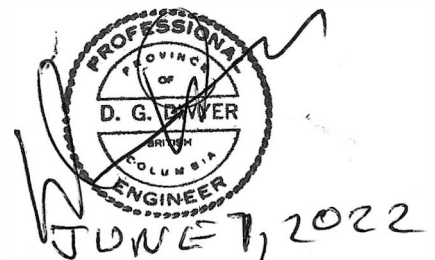
The property is fit for the purpose and can be used safely by all occupants.

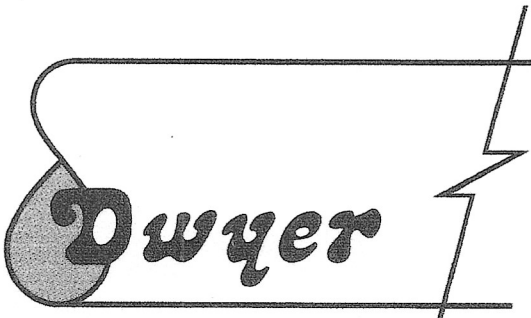
I acknowledge that the report has been prepared at the expense of the owner of the subject property and that I have not acted for or as agent of the Regional District of Central Kootenay in the preparation of the report.

Yours Sincerely,

A handwritten signature in black ink, appearing to read 'D. Dwyer', written over a horizontal line.

David Dwyer, P. Eng.
egbc Lic. # 22264
Ptp # 1001813





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3721 - 14A Street S.W.
Calgary, Alberta
CANADA T2T 3Y1

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(403) 243-1246

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(250) 366-4342

To whom it may concern and
Kevin Kerswell;

June 7, 2022

Regarding: BP 26995 and your lot at 207 Nichols Drive in the Schroeder Creek Point Community including the TERMS OF REFERENCE requirements back in November 2009, Legal Address: LOT 39, District Lot 188 Kootenay Land District Plan 14098.

FLOOD CONSTRUCTION LEVEL RDCK Floodplain Management Bylaw No. 2080, 2009 and Non-Standard Flooding and Erosion Ratings (NSFER) and your NSFER Rating 2

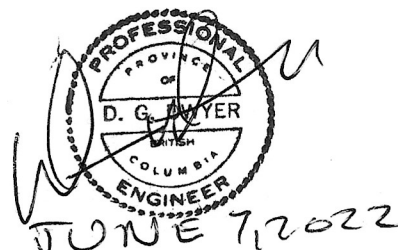
Please be advised that I am a Licensed Professional Engineer in the Province of BC (egbc#22264) & Permit to Practice; PTP # 1001813. As per your request I have investigated (on site) the Scour/Erosion Protection that may be required as per Sec. 9.4 and 9.5 of the consolidated Bylaw and the prudent NSFER Rating 2.

I have studied the site, the guidelines, reports, data and information about a possible risk of a water hazard from shallow flooding by low velocity flow as defined by the authorities' perception of rating NSFER-2. Based on your proposed occupied floor elevation on the drawings by CVL Engineering, the property boundaries, subdivision approved, the surround surface drainage conditions, the neighbors, and the approved septic design (RSS) there is no need for Scour and or Erosion Protection, that is, there is no risk of surface water or shallow flooding or inundation by water to any proposed structures as a result of the higher NSFER Rating 2.

A few years ago Schroeder Creek did over top HWY 31 because the culvert plugged with Fan Type AD debris in the spring flood, that risk has since been mitigated by a grizzly upstream of the culvert. In addition, there is an ephemeral draw (a swale) on your LOT between your property and the Schroeder Creek Watercourse. That draw has a thalweg that is lower than the any portion of your property. In addition to that free board, the left bank of the Creek is considerably lower than right bank which is many metres away from your lot boundaries. I note that your property boundaries are defined by stones, rocks and boulders that are too big to be moved by any low or even moderate velocity flow.

In conclusion the HABITABLE AREA ELEVATION conforms to all aspects of the RDCK Floodplain Management Bylaw No. 2080, 2009, CVL designs, and our egbc engineering guidelines about remote water risks. There is no risk by flooding or water damage to the occupants, the public, animals, goods or ancillary equipment nor to the dwelling being constructed under approved BP 26995 in the previously approved subdivision. I certify the appropriate proposed 0.6 (24") above free board is good, practical, efficient and effective and above the 1 in 50,000 year event.

Yours Sincerely,
David Dwyer, P. Eng.
egbc Lic. # 22264
Ptp # 1001813



FLOOD ASSURANCE STATEMENT

Note: This statement is to be read and completed in conjunction with the current Engineers and Geoscientists BC *Professional Practice Guidelines – Legislated Flood Assessments in a Changing Climate in BC* ("the guidelines") and is to be provided for flood assessments for the purposes of the *Land Title Act*, *Community Charter*, or the *Local Government Act*. Defined terms are capitalized; see the Defined Terms section of the guidelines for definitions.

To: The Approving Authority

Date: June 1, 2022

RDCK

Nelson Office

Jurisdiction and address

With reference to (CHECK ONE):

- Land Title Act* (Section 86) – Subdivision Approval
- Local Government Act* (Part 14, Division 7) – Development Permit
- Community Charter* (Section 56) – Building Permit
- Local Government Act* (Section 524) – Flood Plain Bylaw Variance
- Local Government Act* (Section 524) – Flood Plain Bylaw Exemption

For the following property ("the Property"):

207 Nichols Dr. Schroeder Creek BC; Legal: LOT 39, PLAN NEP14098, D.L. 188 KLD

Legal description and civic address of the Property

The undersigned hereby gives assurance that he/she is a Qualified Professional and is a Professional Engineer or Professional Geoscientist who fulfils the education, training, and experience requirements as outlined in the guidelines.

I have signed, sealed, and dated, and thereby certified, the attached Flood Assessment Report on the Property in accordance with the guidelines. That report and this statement must be read in conjunction with each other. In preparing that Flood Assessment Report I have:

[CHECK TO THE LEFT OF APPLICABLE ITEMS]

- 1. Consulted with representatives of the following government organizations:
HBE/IH, RDCK LAND USE PLANNING, Local Forestry Agent, BC HYDRO Re: Duncan Dam
- 2. Collected and reviewed appropriate background information
- 3. Reviewed the Proposed Development on the Property
- 4. Investigated the presence of Covenants on the Property, and reported any relevant information
- 5. Conducted field work on and, if required, beyond the Property
- 6. Reported on the results of the field work on and, if required, beyond the Property
- 7. Considered any changed conditions on and, if required, beyond the Property
- 8. For a Flood Hazard analysis I have:
 - 8.1 Reviewed and characterized, if appropriate, Flood Hazard that may affect the Property
 - 8.2 Estimated the Flood Hazard on the Property
 - 8.3 Considered (if appropriate) the effects of climate change and land use change
 - 8.4 Relied on a previous Flood Hazard Assessment (FHA) by others
 - 8.5 Identified any potential hazards that are not addressed by the Flood Assessment Report
- 9. For a Flood Risk analysis I have:
 - 9.1 Estimated the Flood Risk on the Property
 - 9.2 Identified existing and anticipated future Elements at Risk on and, if required, beyond the Property
 - 9.3 Estimated the Consequences to those Elements at Risk

FLOOD ASSURANCE STATEMENT

10. In order to mitigate the estimated Flood Hazard for the Property, the following approach is taken:

- 10.1 A standard-based approach
 10.2 A Risk-based approach
 10.3 The approach outlined in the guidelines, Appendix F: Flood Assessment Considerations for Development Approvals
 10.4 No mitigation is required because the completed flood assessment determined that the site is not subject to a Flood Hazard

11. Where the Approving Authority has adopted a specific level of Flood Hazard or Flood Risk tolerance, I have:

- 11.1 Made a finding on the level of Flood Hazard or Flood Risk on the Property
 11.2 Compared the level of Flood Hazard or Flood Risk tolerance adopted by the Approving Authority with my findings
 11.3 Made recommendations to reduce the Flood Hazard or Flood Risk on the Property

12. Where the Approving Authority has not adopted a level of Flood Hazard or Flood Risk tolerance, I have:

- 12.1 Described the method of Flood Hazard analysis or Flood Risk analysis used
 12.2 Referred to an appropriate and identified provincial or national guideline for level of Flood Hazard or Flood Risk
 12.3 Made a finding on the level of Flood Hazard or Flood Risk tolerance on the Property
 12.4 Compared the guidelines with the findings of my flood assessment
 12.5 Made recommendations to reduce the Flood Hazard or Flood Risk

13. Considered the potential for transfer of Flood Risk and the potential impacts to adjacent properties

14. Reported on the requirements for implementation of the mitigation recommendations, including the need for or not subsequent professional certifications and future inspections. REVISED THE APPENDIX A as well

Based on my comparison between:

[CHECK ONE]

- The findings from the flood assessment and the adopted level of Flood Hazard or Flood Risk tolerance (item 11.2 above)
 The findings from the flood assessment and the appropriate and identified provincial or national guideline for level of Flood Hazard or Flood Risk tolerance (item 12.4 above)

I hereby give my assurance that, based on the conditions contained in the attached Flood Assessment Report:

[CHECK ONE]

- For subdivision approval, as required by the *Land Title Act* (Section 86), "that the land may be used safely for the use intended": sub-division was
 approved back in time
 With one or more recommended registered Covenants.
 Without any registered Covenant.
- For a development permit, as required by the *Local Government Act* (Part 14, Division 7), my Flood Assessment Report will "assist the local government in determining what conditions or requirements it will impose under subsection (2) of this section [Section 491 (4)]".
- For a building permit, as required by the *Community Charter* (Section 56), "the land may be used safely for the use intended":
 [CHECK ONE]
 With one or more recommended registered Covenants.
 Without any registered Covenant.
- For flood plain bylaw variance, as required by the *Flood Hazard Area Land Use Management Guidelines* and the *Amendment Section 3.5 and 3.6* associated with the *Local Government Act* (Section 524), "the development may occur safely".
- For flood plain bylaw exemption, as required by the *Local Government Act* (Section 524), "the land may be used safely for the use intended".

PROFESSIONAL PRACTICE GUIDELINES

LEGISLATED FLOOD ASSESSMENTS IN A CHANGING CLIMATE IN BC

FLOOD ASSURANCE STATEMENT

I certify that I am a Qualified Professional as defined below.

June 1, 2022
Date

David Dwyer, P. Eng.
Prepared by

David Dwyer, P. Eng.
Name (print)

Signature

645 Meadow Creek FSR
Address

Meadow Creek BC V0G 1N0

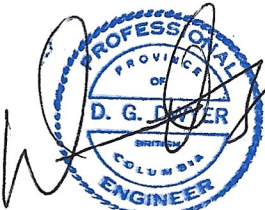
(250) 366-4342
Telephone

grnvalley@hotmail.com
Email

Reviewed by

Name (print)

Signature


(Affix PROFESSIONAL SEAL here)
22264
June 1, 2022

If the Qualified Professional is a member of a firm, complete the following:

I am a member of the firm Dwyer Engineering and Construction Limited PTP # 1001813
and I sign this letter on behalf of the firm. (Name of firm)

■ APPENDIX A: FLOOD MAPPING ASSURANCE STATEMENT

To: The Client

Date: June 1, 2022

Kevin Kerswell

Name (print)

207 Nichols Drive

Schroeder Creek BC

Address (print)

Flood Mapping Project:

LOT 39, PLAN NEP14098, DL 188 KOOTENAY LAND DISTRICT

The undersigned hereby gives assurance that he/she is an APEGBC registered professional and the Qualified Professional for the project identified above.

I have signed, sealed and dated the attached report in accordance with the APEGBC *Professional Practice Guidelines – Flood Mapping in BC*. The report supports and accurately reflects the assurances made in this Assurance Statement.

I have completed the following activities:

(Check the applicable items)

Activity	
<input checked="" type="checkbox"/>	Reviewed the relevant provincial legislation and local government regulations, policies, and floodplain bylaws
<input checked="" type="checkbox"/>	Reviewed available and relevant background information, documentation and data
<input checked="" type="checkbox"/>	Visited the site and reviewed the conditions in the field that may be relevant
<input checked="" type="checkbox"/>	Considered the need for, and scale of, investigations that address future land use changes and climate change no further need to scale up or do more investigations
	Developed and executed the flood mapping in accordance with the criteria established by the client
	Addressed any significant comments arising from internal or peer reviews
	Prepared a flood mapping report along with the accompanying digital information

I hereby give assurance that the attached flood mapping report and supporting digital documentation have been produced in accordance with the APEGBC Professional Practice Guidelines – Flood Mapping in BC.

Dave Dwyer, P. Eng.

Name (print)

June 1, 2022

Signature

Date

645 meadow Creek FSR

Address (print)

Meadow Creek BC

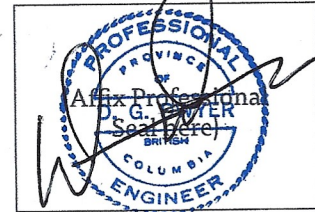
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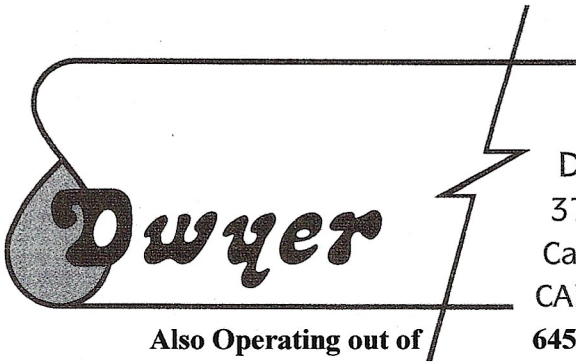
(email)



egbc # 22264
June 1, 2022

If the APEGBC Qualified Professional is a member of a firm, complete the following:

I am a member of the firm _____
and I sign this letter on behalf of the firm. (Print name of firm)



DWYER ENGINEERING AND CONSTRUCTION LIMITED
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Calgary, Alberta
CANADA T2T 3Y1
645 Meadow Creek Road, Meadow Creek BC (250) 366-4342

Telephone
(403) 243-1246

Also Operating out of

July 22, 2022

To whom it may concern and Kevin Kerswell;

Re: BP 26995 and your lot located at 207 Nichols Drive in the Schroeder Creek Community and TERMS OF REFERENCE REQUIREMENTS OF November 2009, Legal Address: LOT 39, District Lot 188 Kootenay Land District Plan 14098.

FLOOD CONSTRUCTION LEVEL RDCK Floodplain Management Bylaw No. 2080, 2009 and Non-Standard Flooding and Erosion Ratings (NSFER) and your NSFER Rating 2

Please be advised that I am a Licensed Professional Engineer in the Province of BC (egbc#22264) and Permit to Practice-PTP#1001813. As per your request I have investigated (on site and all) the Scour/Erosion Protection that may be required as per Sec. 9.4, 9.5, and 9.6 of the consolidated Bylaw and prudent NSFER Rating 2 and as per Section A, Item 4.0 of the ToR, I have signed and sealed the attached Site Plan (2022-06-07-F2203D -Site_Plan .png) to confirm the property boundary conditions and slopes.

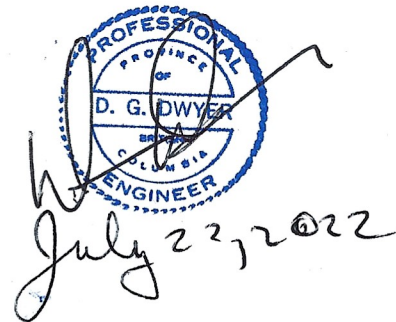
I have studied the site, the guidelines, reports, data and information about a possible risk by low velocity flow as defined by the NSFER Rating-2. Based on your proposed occupied floor elevation on the drawings by CVL Engineering, the property boundaries, approved subdivision elevations, the surround surface drainage conditions, the neighbors, and the approved septic design (RSS Permit) there is no need for scour and/or erosion protection, that is, there is no risk of surface water or shallow flooding or inundation by water to any proposed structures as a result of higher NSFER Rating 2.

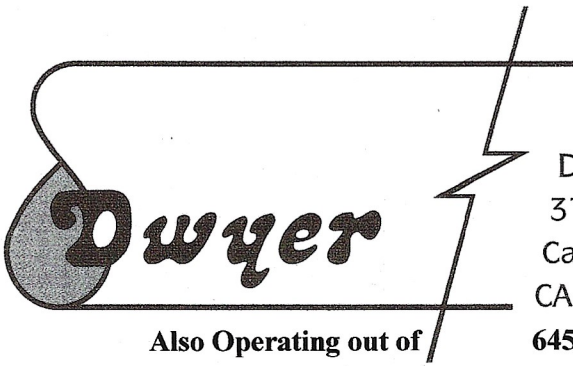
A few years ago the Schroeder Creek did over top HWY 31 because the culvert plugged with Fan Type AD Debris in the spring flood; that risk has since been mitigated by a grizzly upstream of that culvert. In addition there is an ephemeral draw (a swale) on your lot between your property and the Schroeder Creek Watercourse. That draw has a thalweg that is lower than any portion of your property. In addition to that free board, the left bank of the Creek is considerably lower than the right bank which is many metres away from your lot boundaries. I note that your property boundaries are defined by stones, rocks, cobbles and boulders that are too big to be moved by any low or moderate velocity flow.

In conclusion the HABITABLE AREA ELEVATION conforms to all aspects of the RDCK Floodplain Management Bylaw No. 2080, 2009, CVL designs and our egbc guidelines about remote water risks. There is no flood risk to health or safety from inundation or water flooding or from flooding hazard that would damage any proposed single family dwelling structure, the occupants or the public. The site is fit for the purpose of a large family dwelling and a safe and healthy home. The land can be used safely for the purpose intended.

Yours Sincerely,

David Dwyer, P. Eng.
egbc lic. # 22264
PTP # 1001813





DWYER ENGINEERING AND CONSTRUCTION LIMITED
3721 - 14A Street S.W.
Calgary, Alberta
CANADA T2T 3Y1
645 Meadow Creek Road, Meadow Creek BC (250) 366-4342

Telephone
(403) 243-1246

Also Operating out of

July 22, 2022

To whom it may concern:

Attention: Kevin Kerswell;

Re: BP 26995 and your lot located at 207 Nichols Drive in the Schroeder Creek Point Community and TERMS OF REFERENCE REQUIREMENTS OF November 2009.

Legal Address: LOT 39, District Lot 188 Kootenay Land District Plan 14098.

FLOOD CONSTRUCTION LEVEL RDCK Floodplain Management Bylaw No. 2080, 2009 and Non-Standard Flooding and Erosion Ratings (NSFER) and your NSFER Rating 2

Please be advised that I am a Licensed Professional Engineer in the Province of BC (egbc#22264) and Permit to Practice-PTP#1001813. I have completed the attached engineering reports attached to this application in accordance with our ESA and the terms of reference for my client Mr. Kevin Kerswell.

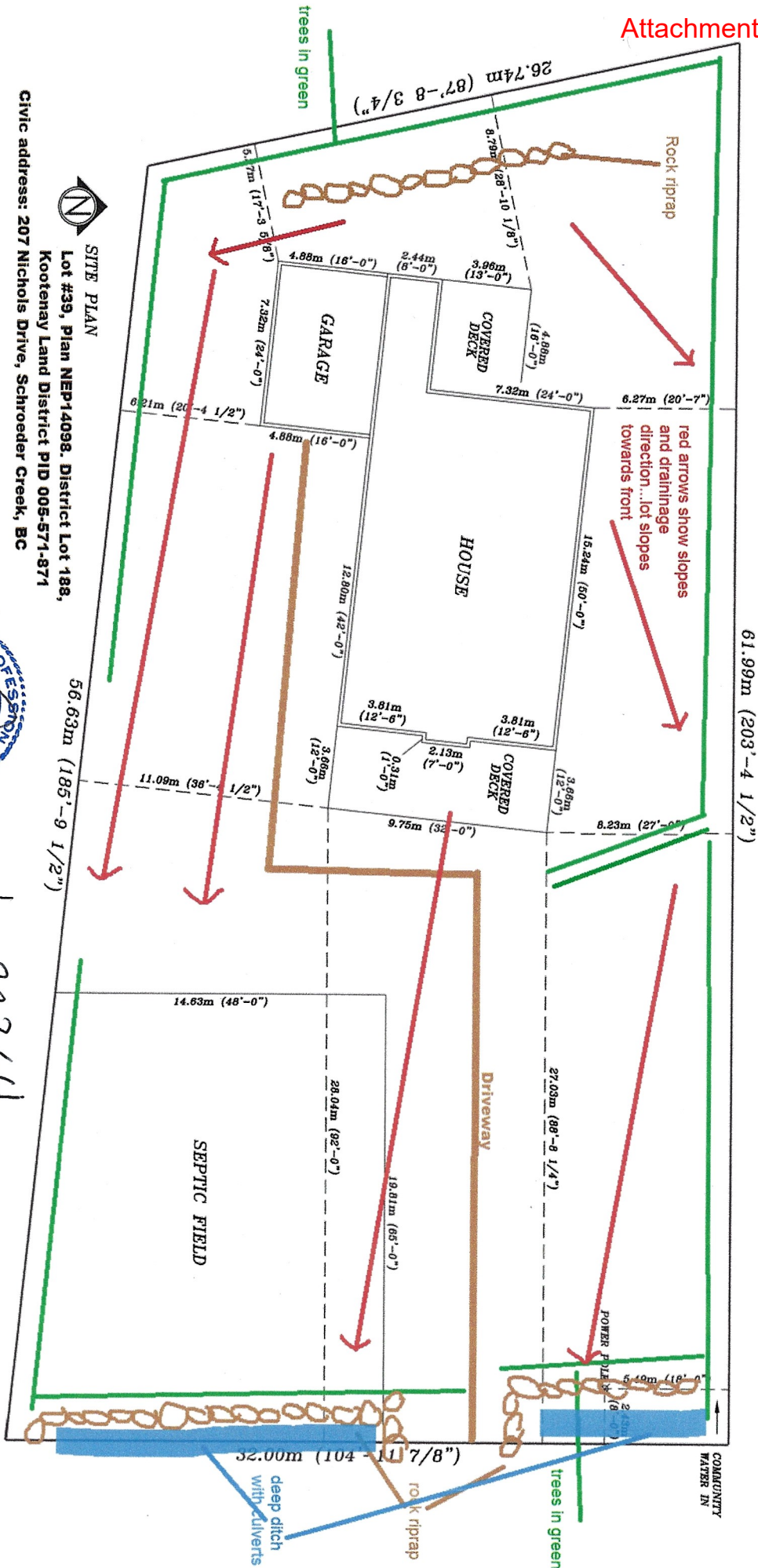
I acknowledge that the report is prepared for the Regional District of Central Kootenay (RDCK) as a precondition to the issuance of a Site Specific Exemption from the provisions of Floodplain Management Bylaw 2080, 2009 under Section 524 of the Local Government Act, and any conditions in this report shall be included in a Restrictive Covenant under Section 219 of the Land Titles Act and filed against the title of the subject property. My review includes SECTION 9.6 of the Bylaw in bold above.

I graduated from The University of Alberta in 1970, have been working in BC since 1985 and got my MBA in 1989. I have taken a few speed reading courses and have read the publications by both Provincial Engineering Associations about floods and high water risks. **The land can be used safely by all, fit for the purpose as a family home and dwelling being constructed in accordance with the approved RDCK BP26996 at the new safe as built floor elevation.**

I acknowledge that the report has been prepared at the expense of the owner of the subject property and that I have not acted for or as an agent of the RDCK in the preparation of this report.

Yours Sincerely,

David Dwyer, P. Eng.
egbc lic. # 22264
PTP # 1001813



Handwritten notes:
 July 22, 2022
 PTP 1001813
 22264

