

NHC Ref. No. 3003939. Revision 3

2018 August 08

Fraser Valley Regional District
45950 Cheam Avenue
Chilliwack, BC V2P 1N6

Attention: Dawn Smith
Planner I

Via email: dsmith@fvrld.ca

Re: 51515 Chilliwack Lake Road
FVRD Bylaw 0681
Schedule B - Exemption for Flood Plain Setback

Dear Ms. Smith:

Please find enclosed NHC's supplemental documentation to NHC, 2018 outlining the selected mitigation measures at 51515 Chilliwack Lake Road - Legal Description: Lot 2, Sections 27 and 34, Township 1, Range 29, West of the Sixth Meridian, New Westminster District, Plan 36071 (the "property"). Attached to this document is a copy of the Fraser Valley Regional District's (FVRD) *Floodplain Management Bylaw 0681 – Schedule B – Exemption for Floodplain Setback* application on behalf the property owner at the property.

As defined in *Bylaw 0681*, 'Floodplain Setback' means the required minimum distance from the Natural Boundary of a watercourse, lake, or other body of water to any landfill or structural support required to elevate a floor system or pad above the Flood Construction Level, so as to maintain a floodway and allow for potential land erosion. The following distances are specified as Floodplain Setbacks, except that where more than one Floodplain Setback is applicable, the greater setback shall be the Floodplain Setback:

- i. Where the Floodplain Setback line is shown on Schedule A (Not included) the distance shall be scaled from the map. or, where the Floodplain Setback is not shown on Schedule A the following shall apply:
- ii. 60.0 metres from the Natural Boundary of Cascade Creek, Chilliwack River (downstream of Slesse Creek to the Floodplain Setback line), Deroche Creek, Norrish Creek, Pattison Creek, Slesse Creek and from any flood channels.
- iii. 30.0 metres from the Natural Boundary of Anderson Creek, Anderson River, Carratt Creek, Chehalis River, Chilliwack River (upstream of Slesse Creek), Clayburn Creek, Coquihalla River, Emory Creek, Eng Creek, Frosst Creek, Gourlay Creek, Harrison River, Herford Creek, Hunter Creek, Jones Creek (Wahleach Creek), Legace Creek, Lillooet River, Liumchen Creek, Lost Creek, Lorenzetta Creek, McNab Creek, Nahatlatch River, Nicolum Creek, Paleface Creek, Pitt River, Pye Creek, Ryder Creek,

Sakwi Creek, Scuzzy Creek, Siddle Creek, Silverhope Creek, Slesse Creek, Squakum Creek, Stave River, Stulkawhits Creek, Sumallo River, Sweltzer Creek, Tamihi River, Yale Creek, Vedder River, Weaver Creek, Wingfield Creek and from any flood channels.

- iv. 15.0 metres from the Natural Boundary of any other watercourse.
- v. 15.0 metres from the Natural Boundary of Pitt Lake, Harrison Lake and Stave Lake.
- vi. 7.5 metres from the Natural Boundary of any other lake, pond or marsh.
- vii. 7.5 metres to the in board toe of any dyke or dyke right of way structure for flood protection or seepage.

The subject property, located along the left bank of the Chilliwack River downstream of Slesse Creek is subject to the provisions of *Bylaw 0681, Section 6, b, i: Floodplain Setback* and falls under case (ii): 60.0 metres from the Natural Boundary, considered the toe of left bank slope near the properties eastern legal limits and restricts any development on the property. Further details of the property, observations from a site specific geohazard assessment and mitigation options developed seeking exemption from the setback are provided in NHC, 2016.

SETBACK ALTERNATIVE

The Property Owner wishes to implement an alternative erosion setback from the provisions of Bylaw 0681 Section 6, b, i with setback distance from the primary residential structure, set to 20 metres. In order to reduce the setback to this distance, NHC proposes armouring the existing bench at the toe of the left bank meeting the following terms:

- The armoured bank would be owned and maintained by the subject property;
- Maintenance of the armoured bank would be the responsibility of the subject property owner. This would include the owner maintaining machine access to the bench and bank protection as well as keeping the access route, bench and armoured slope free of vegetation. No planting in these areas should be done but mowed grass is acceptable on the access route and top of bench to minimize surface erosion. Inspection of the access route, the bench and the bank protection should be carried out by a Qualified Professional every five years or following a large flow event on the Chilliwack River with an estimated return period of 5-years or greater;
- the landward side crest of the armoured bank is offset a minimum 20 m from the primary structure;
- is designed to current engineering practices by a qualified professional engineer;
- capable of withstanding the estimated 200-year hydraulic forces, to be determined in the detailed design of the mitigation;
- constructed to the 200-year Flood Construction Level (FCL) outlined in NHC, 2016 (elevation El. 154.5 m at the properties upstream boundary);
- provided with adequate key-in depths or appropriate launch apron at the toe of slope to mitigate scour; and

- keyed-in to the left bank at the upstream and downstream extents of the armour to minimize outflanking.
- No alterations of mitigation without proper professional design;
- “The land may be used safely for the use intended”, as required by the *Local Government Act* (Section 524).

In addition, the setback distance must be compliant with other federal, and provincial requirements, such as the BC Ministry of Forests Lands, Natural Resource Operations and Rural Development (MFLNRORD) and/or Riparian Area Assessment.

A schematic of the private property, proposed residential structure, and bank protection is shown in Figure 1. The existing bench near the toe of the slope will remain to provide machine access for future maintenance and repair. Erosion mitigation would be the responsibility of the property owner, who would take ownership of the bank protection and have it inspected and maintained as necessary.

The described erosion mitigation alternative is not expected to transfer flood or erosion hazards or risks to other properties or infrastructure including the property immediately upstream (private lot) and downstream (crown land) of the subject property.

CLOSURE

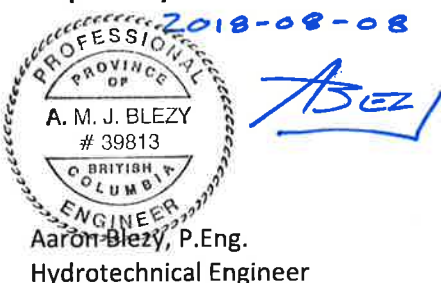
The FVRD is hereby granted permission to use this report in considering approval of the proposed development on the subject property, provided that such permission is limited only to the proposed development project for which the report was prepared. The FVRD is hereby granted permission to include the report in the online FVRD Hazard Assessment Report library (as background information, not for other parties to rely on).

We hope that this document meets your immediate needs. If you have any questions or comments, please call me at our North Vancouver office at (604) 980-6011.

Sincerely,

Northwest Hydraulic Consultants Ltd.

Prepared by:



ENCLOSURE: Figure 1.
Schedule B.

REFERENCES

NHC, 2018. 51515 Chilliwack Lake Road Natural Hazard Assessment. August 2018 Final Report

Association of Professional Engineers and Geoscientists of BC, 2012, Professional Practice Guidelines – Legislated Flood Assessments in a Changing Climate in BC, v1.1, June 2012

EBA, 2009. Chilliwack River Fish-Hazard Management Strategy, Phase 1, February 2009.

Hay & Company, 1992a. Chilliwack River Hazard Management Study Interim Report, prepared for the Fraser Cheam Regional District, July 1992.

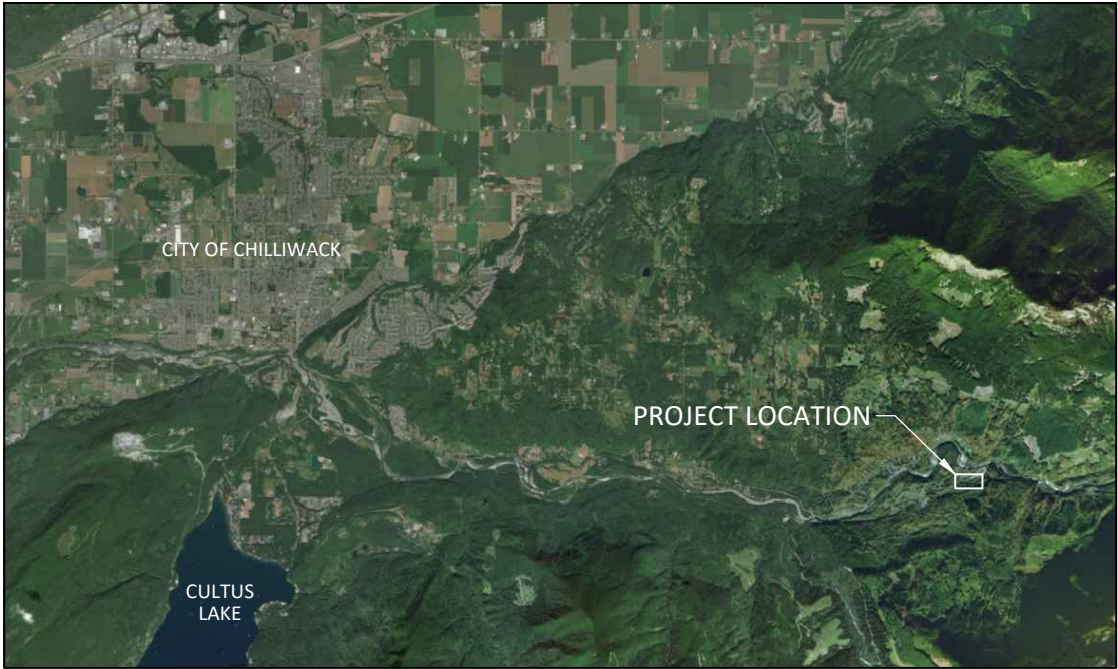
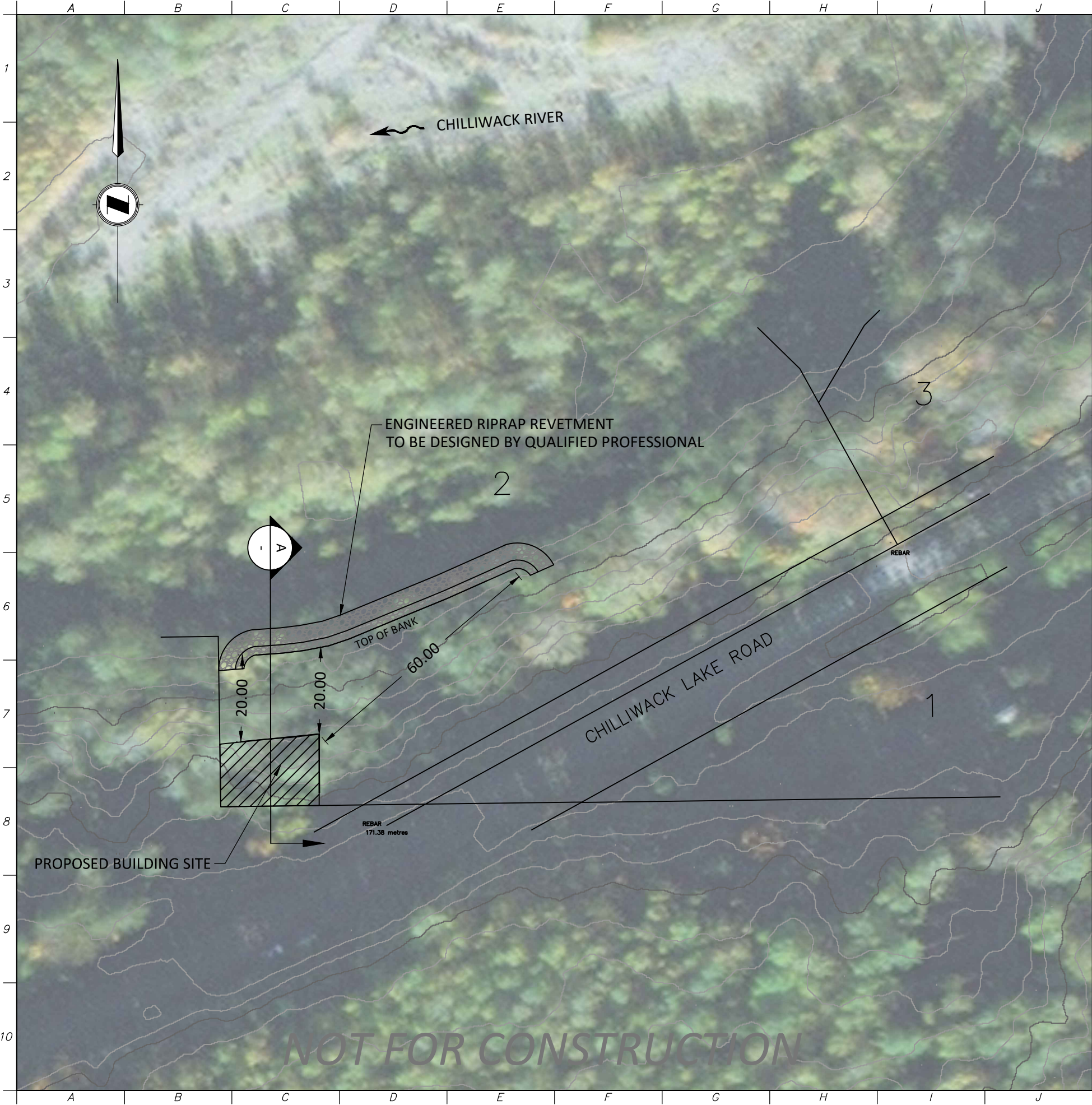
Hay & Company, 1992b. Chilliwack River Hazard Management Outline Plan, prepared for the Fraser Cheam Regional District, December, 1992.

Hay & Company, 1993. Letter to Fraser Cheam Regional District, Re: Erosion Setback Line - Chilliwack River Valley, January 29, 1993.

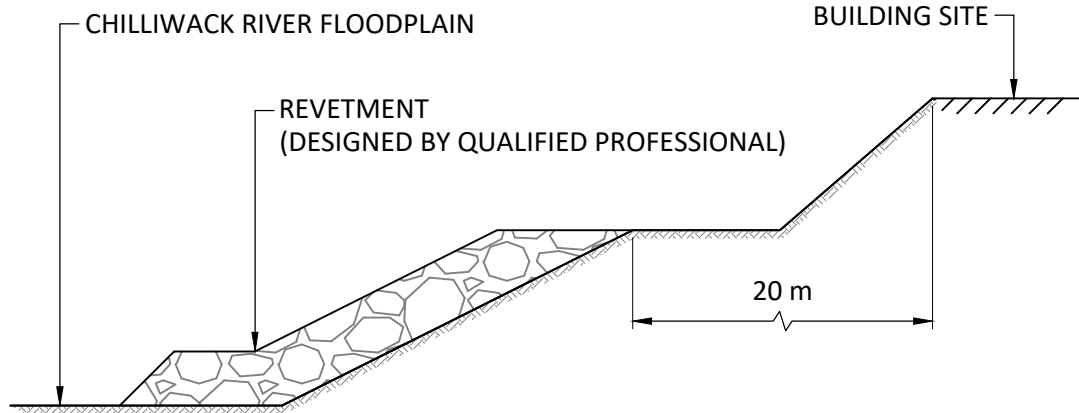
DISCLAIMER

This document has been prepared by **Northwest Hydraulic Consultants Ltd.** in accordance with generally accepted engineering practices and is intended for the exclusive use and benefit of **0861640 BC Ltd.** and their authorized representatives for specific application to the **51515 Chilliwack Lake Road Natural Hazards Assessment**. The contents of this document are not to be relied upon or used, in whole or in part, by or for the benefit of others without specific written authorization from **Northwest Hydraulic Consultants Ltd.** No other warranty, expressed or implied, is made. **Northwest Hydraulic Consultants Ltd.** and its officers, directors, employees, and agents assume no responsibility for the reliance upon this document or any of its contents by any parties other than **0861640 BC Ltd.**

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KEYMAP
NOT TO SCALE



SECTION A - REVETMENT
NOT TO SCALE

0861640 BC LTD.
45642 RACHAEL PLACE
CULTUS LAKE, BC
V2R 5R3

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30 Gostick Place
North Vancouver, BC
Canada V7M 3G3
Office: 604.980.6011
Fax: 604.980.9264
www.nhcweb.com

REVISIONS			DRAWING INFORMATION	
A	2018-MAY-22	ISSUED FOR FVRD BYLAW 0681 EXEMPTION REVIEW	DATE	17 May 2018
			DESIGNED BY	AMB
			DRAWN BY	AMB
			CHECKED BY	
			SHEET SIZE	B (11" x 17")

51515 CHILLIWACK LAKE ROAD
PROPOSED EROSION PROTECTION REVETMENT

PLAN VIEW

PROJECT NUMBER	
DRAWING NUMBER	03003939
SHEET NUMBER	
1	
REVISION	A

SCHEDULE B



Fraser Valley Regional District

45950 Cheam Avenue, Chilliwack, British Columbia V2P 1N6
Phone: 604-702-5000 Toll Free: 1-800-528-0061 (BC only)
Fax: 604-792-9684 website: www.fvrd.bc.ca

REQUEST FOR SITE-SPECIFIC EXEMPTION

Floodplain Management Provisions

Name: Alex Ocean Phone No. _____

Address: 51515 Chilliwack Lake Road

Legal Description of Property:

Lot 2, Sections 27 and 34, Township 1, Range 29, West of the Sixth Meridian, New Westminster District, Plan 36071

(Lot, Block, Legal Subdivision, Section, Plan, Township, Range, Land District, PID No.)

PROPOSED DEVELOPMENT:

Residential Housing

Name of Adjacent Watercourse or Body of Water:

Chilliwack River

Flood Construction Level in Bylaw: 200-Year

Flood Construction Level Requested: El. 154.5 m (to be confirmed)

Floodplain Setback in Bylaw: 60 m

Floodplain Setback Requested: 20 m

ENCLOSED ARE: (check where provided; provision of all of this information will facilitate processing of application)

____ legal map of property

____ map indicating property location and relationship of proposed building to adjacent watercourse

____ photos of property (proposed building location, adjacent existing development, riverbank areas, etc.)

X other information pertinent to this application

REASONS FOR APPLICATION:

Bylaw 0681 requires 60 m setback from the natural boundary. 60 m setback does not provide space to develop

Property for residential dwelling north of Chilliwack Lake Road.

DATE OF APPLICATION: 2018-05-19

SIGNATURE OF APPLICANT: