



EXEMPTION NO. 701-23

OWNER: LeClair Holdings Ltd.  
PO BOX 496  
SORRENTO, BC V0E 2W0

1. This exemption applies only to the lands described below:

Lot 1, Section 15, Township 22, Range 11, W6M, KDYD, Plan EPP19912 which property is more particularly shown outlined in bold on the location map attached hereto as Schedule 'A'.

2. The proposed development, which is more particularly shown on the Building Location Certificate attached hereto as Schedule 'B', is exempted from Section 3.17.2.1 of the Floodplain Setback requirements of South Shuswap Zoning Bylaw No. 701, as follows:

- i. The Floodplain Setback established in Section 3.17.2.1 is decreased from 15.0 m from the mean annual high water mark of Shuswap Lake, defined as 348.3 metres Geodetic Survey of Canada Datum:

- a. to 12.8 m from the mean annual high water mark, only for the deck, steps and chimney portions of the single family dwelling; and
- b. to 9.2 m from the mean annual high water mark, only for the deck and steps attached to the cottage; and
- c. to 3.6 m from the mean annual high water mark, only for the boathouse;

AND,

- ii. The Flood Construction Level established in Section 3.17.1.1 is decreased from 351.0 m Geodetic Survey of Canada Datum:

- a. to 350.48 m Geodetic Survey of Canada Datum, only for the boathouse.

3. This exemption is issued subject to the following terms and conditions:

- a. Strict compliance with the recommendations of the Flood Hazard Assessment report prepared by Rod Williams, P.Eng., Onsite Engineering Ltd., dated March 14, 2016 which is attached hereto as Schedule 'C'.

4. This exemption is NOT a building permit.

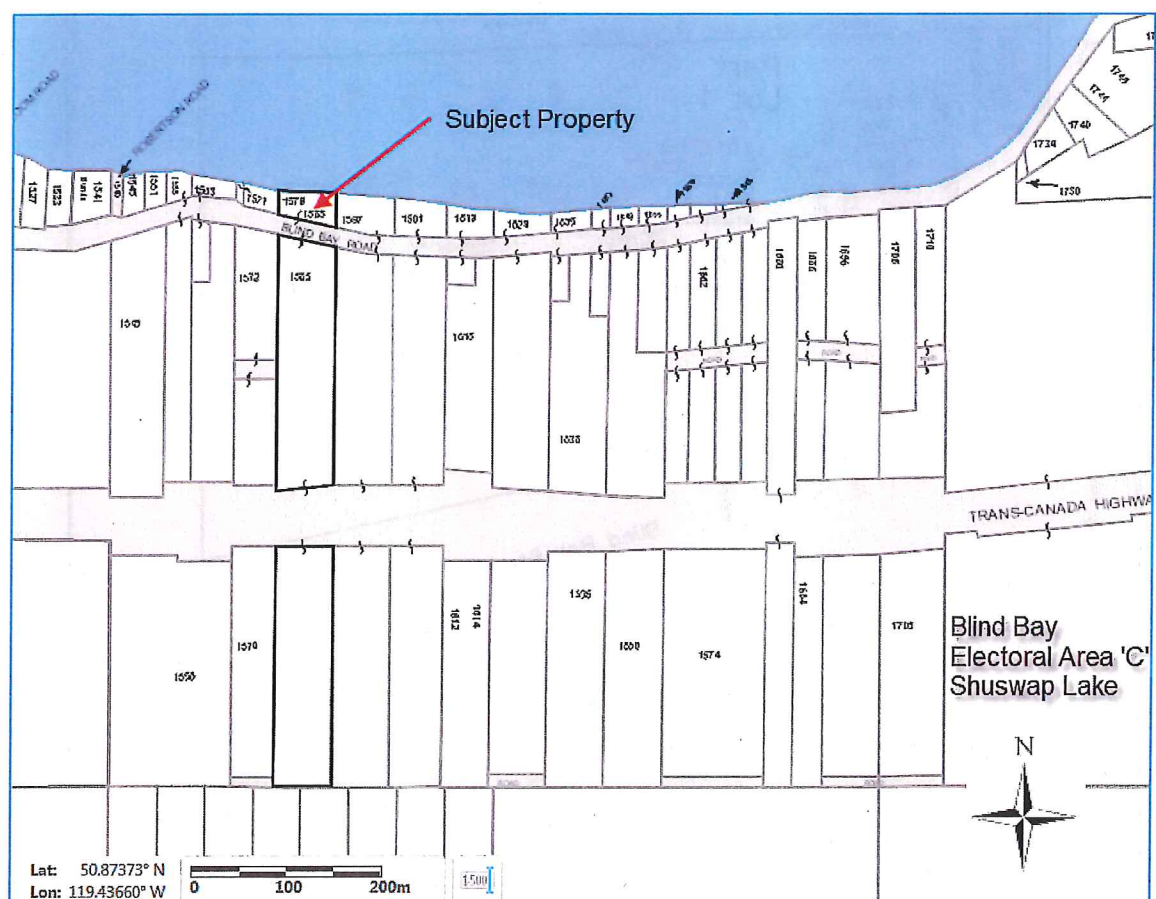
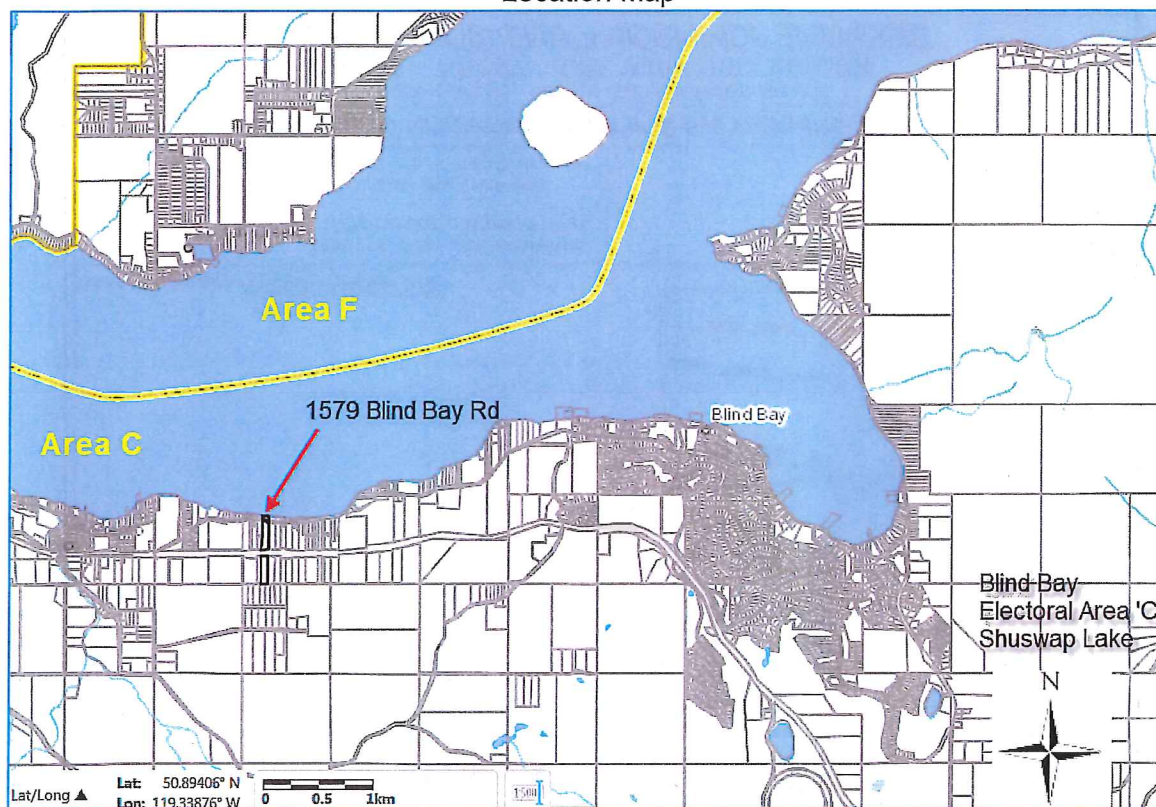
AUTHORIZED AND ISSUED BY the Manager of Development Services on the 10  
day of JUNE, 2016.



Gerald Christie, Manager of Development Services

PLEASE NOTE:

- 1) This Permit addresses Local Government regulations only. Further permits or authorizations may be required from Provincial and Federal governments. It is the owner's responsibility to call Front Counter BC at 1-877-855-3222 regarding this project.

Schedule 'A'  
Location Map

## BRITISH COLUMBIA AND CANADA LANDS

Box 362, Salmon Arm, B.C. V1E 4N5 (250)832-9701

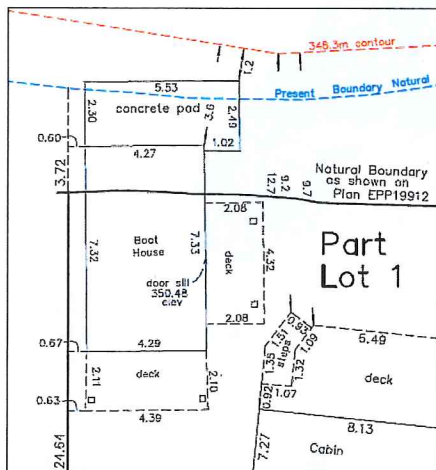
To: LeClair Holdings,  
c/o Bill LeClair,  
1864 Walnut Crescent,  
Coquitlam, BC V3J 7T1

Re: Lot 1, Section 15, Township 22,  
Range 11, W6M, KDYD, Plan EPP19912

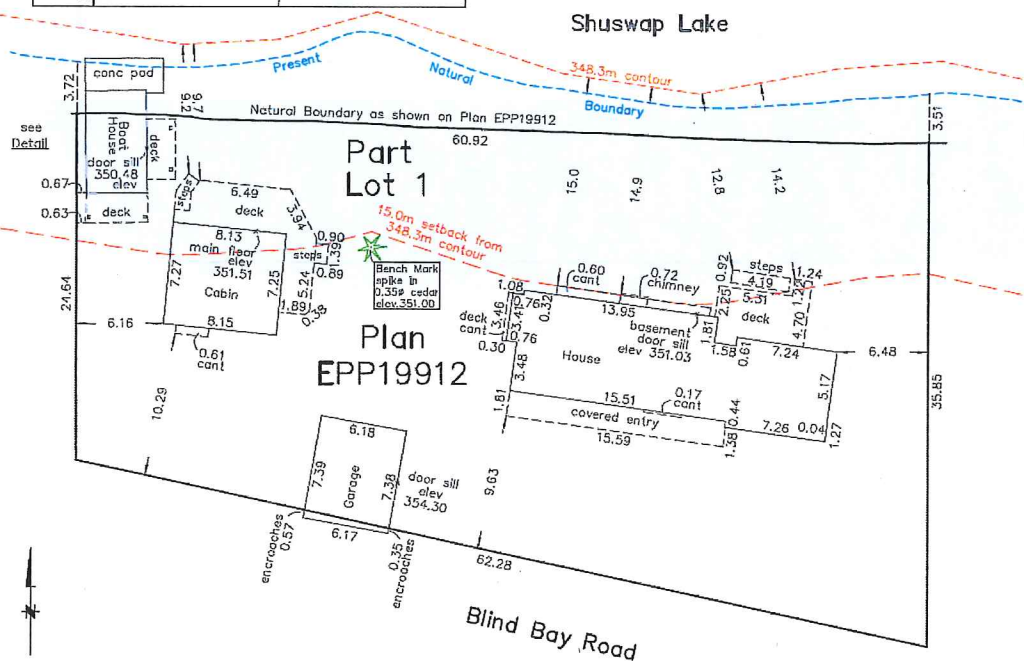
Parcel Identifier(PID): 028-875-851

Civic Address: 1585 Blind Bay Road

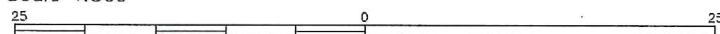
List of documents registered on title which may affect the location of improvements:  
none



**Detail**  
Scale 1:150



Scale 1:300



All distances are in metres.

Dimensions derived from Plan EPP19912

Offsets from property line to building are measured from the siding.

The signatory accepts no responsibility or liability for any damages that may be suffered by a third party as a result of any decisions made, or actions taken based on this document.

This plan was prepared for inspection purposes and is for the exclusive use of our client. This document shows the relative location of the surveyed structures and features with respect to the boundaries of the parcel described above. This document shall not be used to define property lines or or property corners.

This building location certificate has been prepared in accordance with the Professional Reference Manual and is certified correct this 23rd day of February, 2016.

Nicole  
Bird  
GIMSOW

c=CA, cn=Nicole Bird  
GIMSQW, o=BC Land  
Surveyor, ou=Verify ID  
at [www.junipert.com/  
LKUP.cfm?id=GIMSQW](http://www.junipert.com/LKUP.cfm?id=GIMSQW)

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BCLS

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LAND SURVEYORS

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THIS DOCUMENT IS NOT VALID UNLESS  
ORIGINALLY SIGNED AND SEALED.

Our File: 57-16      Fb: 57-16.raw

Schedule 'C'  
Flood Hazard Assessment Report

## **ONSITE** Engineering Ltd.

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March 14, 2016

LeClair Holdings  
c/o Bill LeClair  
1864 Walnut Crescent  
Coquitlam, BC  
V3J 7T1

**Re: Flood Hazard Assessment for the Residence at 1585 Blind Bay Road, Sorrento, BC (Revision 1); Legal Address: Lot 1, Section 15, Township 22, Range 11, W6M, KDYD, Plan EPP19912.**

### **Introduction**

As requested by Mr. Bill LeClair, the property owner, Onsite Engineering Ltd. (OEL) has completed a geotechnical review of the property with respect to the flood hazard guidelines as they pertain to the existing structures on the property.

It is our understanding that the existing cabin, boathouse, and house fall within the 15.0m setback from the mean highwater mark of Shuswap Lake defined as 348.3m asl (above sea level), as specified by the South Shuswap Zoning Bylaw No.701 (Bylaw No. 701). As a result, Mr. LeClair requires a Geotechnical Assessment to obtain an exemption from this bylaw. This assessment will assess the safety of the existing structures on the property with respect to flooding and foreshore erosion. It is our understanding that the intended use is as a single family residential property.

Bylaw No. 701 indicates guidelines for residential structures constructed adjacent to Shuswap Lake. In particular, the CSRD has indicated that the following guidelines apply to this site:

1. The flood plain setback for construction adjacent to Shuswap Lake is 15.0m from the mean annual highwater mark of the lake, defined as the 348.3m contour of the Geodetic Survey of Canada Datum.
2. The flood construction level for construction adjacent to Shuswap Lake is the 351.0m contour of the Geodetic Survey of Canada Datum. This corresponds with the 200yr flood level of the lake plus a freeboard allowance. All living space must be located above this elevation.

A site review of the property was completed by Rod Williams, P Geo. of OEL on March 17, 2015. A follow up site visit was completed by Ryan Williams, GIT on March 26, 2015. The following information was also reviewed as part of this assessment:

- A site plan of the property supplied by Browne Johnson Land Surveyors at a scale of 1:300.
- South Shuswap Zoning Bylaw No. 701 (Bylaw No. 701).
- Shuswap Lake level history retrieved from: [www.shuswaplakewatch.com](http://www.shuswaplakewatch.com)

**BC Interior Operations**  
330 42nd Street SW, Box 2012  
Salmon Arm, BC, V1E 4R1  
Tel: 250-832-3366  
Fax: 1-888-273-0209

**Coastal Operations**  
1040 Cedar Street  
Campbell River, BC, V9W 7E2  
Tel: 250-287-9174  
Fax: 1-866-235-6943

**Prince George**  
1A 1750 Quinn Street  
Prince George, BC, V2N 1X5  
Tel: (250) 562-2252  
Fax: 1-866-235-6943

**North Vancouver**  
Unit 2 - 252 East 1st  
North Vancouver, BC  
V7L 1B3  
Tel: 778-802-1263

## Site Information

The property is located in a residential area in the rural community of Sorrento, downslope (north) of Blind Bay Road. The property currently contains a residential single family house with an attached deck and steps, a small cabin with an attached deck, a boathouse, and a garage. The cabin, the boathouse, and the garage are clustered in the western half of the property, while the house is located on the eastern portion of the property. Terrain within the subject property has been extensively altered by landscaping activities resulting in benchy slopes with variable slope gradients; however, the overall slope of the property is moderate. The beach at the toe of the property is composed of coarse sand and gravel and features a slope gradient of 7-10%.

Surficial materials underlying the subject property were not observed in the field due to extensive landscaping. However, surficial materials observed in the general area surrounding the subject property consist of loose coarse sand and gravel beach deposits overlying silty till deposits. Bedrock was not observed in the field. Bedrock mapping of the area indicates that the local lithology is Lower Paleozoic fine clastic sedimentary rocks of the Mount Ida Assemblage.

A rock retaining wall has been constructed across the foreshore of the property, presumably to retain the landscaped yard area and to protect against shoreline retrogression. The wall predates the current residential structure and was in place when Mr. LeClair purchased the property. The wall is constructed out of 0.2-0.5m diameter clasts of competent metamorphic rock and is placed at a slope gradient ranging from 85% to close to vertical. No signs of instability were noted associated with the rock wall during the field review. The wall also appears to be adequately preventing shoreline erosion and retrogression.

The living space of the existing residential structure is located behind the 15.0m setback of the 348.3m contour and constructed at an elevation of 351.03m asl (i.e. above the flood construction level of 351.0m asl); however, a cantilevered portion of the house and the chimney on the north side of the structure slightly extend over the setback. This cantilevered portion of the house is raised above the ground surface and is well above the flood construction level. The chimney is also constructed above the flood construction level. The house also contains an attached deck and steps that provide access to the yard. The deck partially extends into the 15.0m setback and the steps are completely within the 15.0m setback. However, the surface of the deck is raised above the flood construction level and the footings for the deck and steps are buried below frost depth. No signs of shoreline instability or retrogression are present directly downslope of the house and attached deck and steps.

The existing cabin is located partially within the 15.0m setback of the 348.3m contour, but is situated at an elevation of 351.51m asl (i.e. above the flood construction level of 351.0m). The attached deck and steps on the north and east sides of the cabin also extend into the 15.0 m setback; however, the surface of the deck is raised above the flood construction level and the footings for the deck and steps are buried below frost depth. There are no signs of erosion or retrogression downslope of the cabin and attached deck.

The boathouse is situated directly adjacent to Shuswap Lake. The foundation of the boathouse consists of a concrete slab cast directly on the native beach materials present at the site. The structure, including the concrete pad on the north and the attached decks on the south and east

sides of the structure, are entirely within the 15.0m setback of the 348.3m contour and the lower level of the structure is situated at an elevation of 350.48m asl (i.e. below the flood construction level of 351.0m asl).

The garage is situated behind the 15.0m setback of the 348.3m contour and above the flood construction level of 351.0m asl.

## Discussion

The rock wall present along the foreshore of the property was in place prior to the summer of 2012 when a highwater event occurred on Shuswap Lake. This highwater event recorded a peak water elevation of 349.588m which was the highest level since 1972, indicating that the event was on the order of a 1 in 40 year event. While previous flooding on Shuswap Lake likely inundated part of the rock wall, the structure appears to resist erosion and shoreline retrogression during this event.

The living space of the house is constructed behind the 15.0m setback of the 348.3m contour and above the flood construction level of 351.0m asl. The cantilevered portion of the house and chimney extend into the 15.0m setback; however, they are situated above the flood construction level. The attached deck on the house extends into the 15.0m setback and the steps are completely within the 15.0m setback; however, these structures do not contain any habitable space and the footings of these structures are constructed below frost depth. In addition, the surface of the deck is raised above the flood construction level. As a result, the house is unlikely to be affected by flooding or erosion on Shuswap Lake. Shoreline retrogression at the site is unlikely to occur due to the presence of the rock wall structure along the foreshore of the property.

The existing cabin is located partially within the 15.0m setback of the 348.3m contour, but is situated above the flood construction level of 351.0m asl. The attached deck and steps on the cabin are also located within the 15.0m setback; however, these structures do not contain any habitable space and the footings of the deck are constructed below frost depth. The surface of the deck is also raised above the flood construction level. As a result, the cabin is unlikely to be affected by flooding or erosion on Shuswap Lake. In addition, shoreline retrogression is unlikely to occur due to the presence of the rock wall structure along the foreshore of the property.

The boathouse structure is situated adjacent to the foreshore of Shuswap Lake and is completely within the 15.0 setback of the 348.3m contour. The foundation of the structure appears to be built directly on the beach materials and is situated below the flood construction level of 351.0m asl. The attached concrete pad and decks are also within the 15.0m setback and below the flood construction level. As a result, the lower level of the structure and attached deck and steps could be inundated during a highwater event on Shuswap Lake. However, damage to the boathouse structure will likely be restricted to minor water damage. The boathouse does not contain any habitable space and as a result, no threat to human life is conceivable.

The garage is situated well behind the flood plain setback and upslope of the required flood control elevation. Therefore, the structure complies with the designated bylaws.

## Conclusion

Flooding on Shuswap Lake is not expected to impact the house on the property. The living space of the house, cantilevered portion, chimney, and deck are situated above the flood construction level of 351.0m asl. In addition, the attached deck and steps do not contain any habitable space and the footings of the deck are buried below frost depth. Shoreline retrogression or erosion is not expected to occur downslope of the house due to the presence of the rock wall structure along the foreshore of the property.

**Therefore, it is our determination that the existing house on the property can be considered safe for its intended use with respect to flooding hazards presented by Shuswap Lake.**

Flooding on Shuswap Lake is not expected to impact the cabin on the property. The living space, decks, and steps on the decks are located above the flood construction level of 351.0m asl. In addition, the attached deck and steps do not contain any habitable space and the footings of the deck are buried below frost depth. Shoreline retrogression or erosion is not expected to occur downslope of the cabin due to the presence of the rock wall structure along the foreshore of the property.

**Therefore, it is our determination that the existing cabin on the property can be considered safe for its intended use with respect to flooding hazards presented by Shuswap Lake.**

The boathouse structure, decks, and concrete pad are located within the 15.0m setback of the 348.3m contour and situated below the flood construction level of 351.0m asl. As a result, flooding events on Shuswap Lake could conceivably inundate the boathouse. However, the boathouse does not contain any habitable space and flooding events are typically slow moving, low energy events. As a result, flooding could cause minor property damage, but is not considered a life threatening event.

**Therefore, it is our determination that the existing boathouse on the property can be considered safe for its intended use with respect to flooding hazards presented by Shuswap Lake.**

The garage is located behind the 15.0m setback of the 348.3m contour and above the flood construction level of 351.0m asl.

**Therefore, it is our determination that the existing garage on the property complies with Bylaw No. 701.**

## Recommendations

No recommendations are suggested as the existing structures are not expected to be impacted by flooding on Shuswap Lake with the exception of minor water damage to the boathouse structure.

## Closure

This assessment has been carried out in accordance with generally accepted geotechnical practice. Conclusions and recommendations presented herein are based on visual site inspections. Assessments of soils are based on interpretation of surface features and limited sub-surface investigation; actual ground conditions may vary from those inferred. Lake and site elevations were retrieved from the site plan and websites indicated above. Variations (even over short distances) are inherent and are a function of natural processes. OEL does not represent or warrant that the conditions listed in the report are exact and the user should recognize that variations may exist.

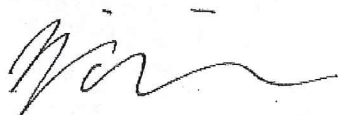
The local government, provincial government, or other approving agency may rely on the findings of this report; no other party may rely upon this report without the express written permission of Onsite.

We trust that this report satisfies your present requirements. Should you have any questions or comments, please contact our office at your convenience.

Sincerely,

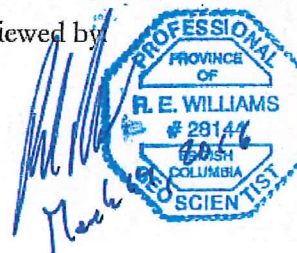
Onsite Engineering Ltd.

Prepared by:



Ryan Williams, GIT  
Project Geoscientist

Reviewed by:



Rod Williams, P.Geo.  
Project Geoscientist

Encl:

Figure 1: Location Key Map

Figure 2: Site Plan Map of the subject property

Photos 1 – 5



Figure 1 – Location Key Map

**BROWNE JOHNSON LAND SURVEYORS\***

BRITISH COLUMBIA AND CANADA LANDS

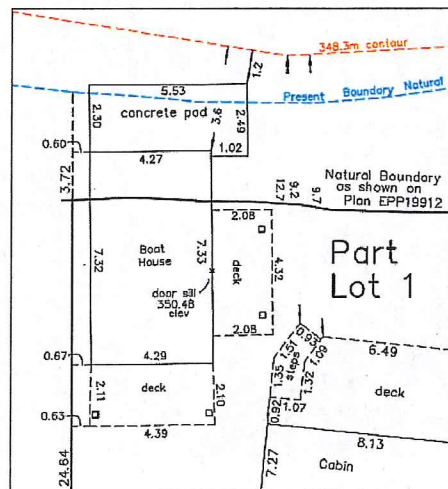
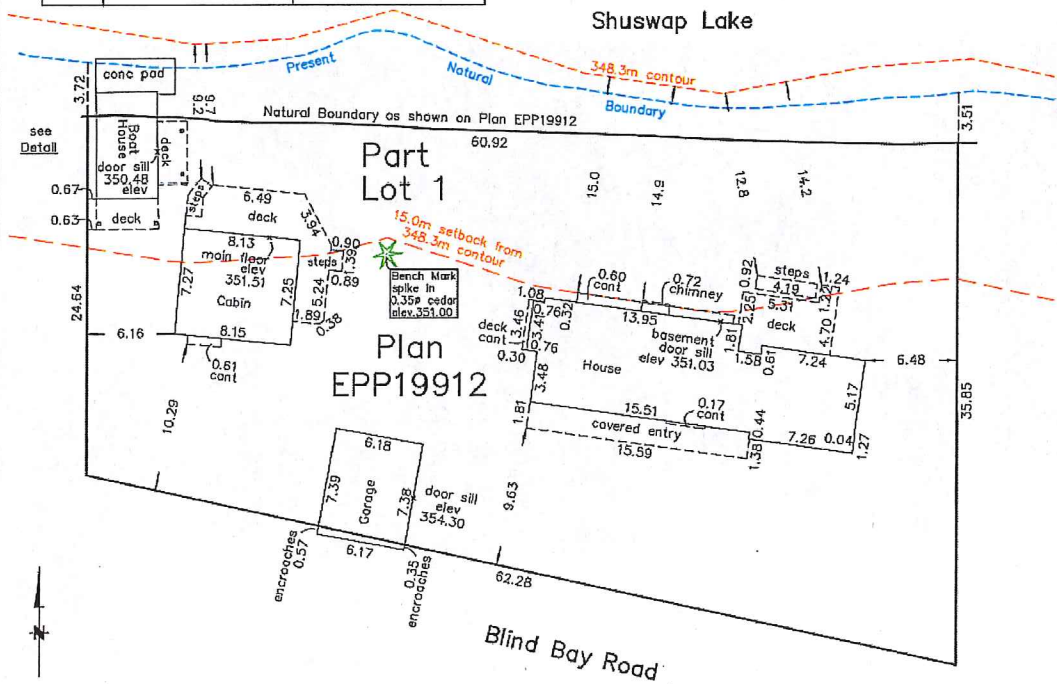
Box 362, Salmon Arm, B.C. V1E 4N5 (250)832-9701

**BC LAND SURVEYOR'S BUILDING LOCATION CERTIFICATE**

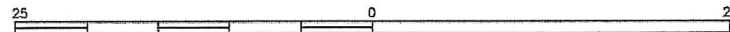
 To: LeClair Holdings,  
 c/o Bill LeClair,  
 1864 Walnut Crescent,  
 Coquitlam, BC V3J 7T1  
 Your File:

 Re: Lot 1, Section 15, Township 22,  
 Range 11, W6M, KDYD, Plan EPP19912

 Parcel Identifier(PID): 028-875-851  
 Civic Address: 1585 Blind Bay Road

 List of documents registered on title which may affect  
 the location of improvements:  
 none

 Detail  
 Scale 1:150


Scale 1:300



All distances are in metres.

Dimensions derived from Plan EPP19912

Offsets from property line to building are measured from the siding.

The signatory accepts no responsibility or liability for any damages that may be suffered by a third party as a result of any decisions made, or actions taken based on this document.

This plan was prepared for inspection purposes and is for the exclusive use of our client. This document shows the relative location of the surveyed structures and features with respect to the boundaries of the parcel described above. This document shall not be used to define property lines or property corners.

This building location certificate has been prepared in accordance with the Professional Reference Manual and is certified correct this 23rd day of February, 2016.

 Nicole  
 Bird  
 GIMSQW

 c:\CA\_cms\Nicole Bird  
 GIMSQW.o\BC Land  
 Surveyor, cert\Verify ID  
 as www.onsite.com  
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Our File: 57-16 Fb: 57-16.raw



Photo 1 – Existing residence built behind a rock wall structure. Shoreline erosion or retrogression is not expected to occur.



Photo 2 – Extensive landscaping downslope of the garage (left) and the cabin (right).



Photo 3 – Location of the cabin (left) relative to the boathouse (right). Note the concrete slab foundation built directly on the beach materials.



Photo 4 – The boathouse built on the beach materials.



Photo 5 – Side view of the boathouse and the rock wall where the property meets the beach.