REGIONAL DISTRICT OF KITIMAT-STIKINE
BYLAW NO. 656

A bylaw to designate land within the Regional District of Kitimat-Stikine as a floodplain, and to establish floodplain management procedures and regulations for buildings and structures in flood prone areas

WHEREAS section 524 of the *Local Government Act* authorizes the Regional District of Kitimat-Stikine to enact a bylaw designating land as a floodplain;

AND WHEREAS the Regional District of Kitimat-Stikine has considered the Provincial guidelines as referred to in section 524 of the *Local Government Act*; as well as maps and other documents that identify areas which may be subject to flooding;

NOW THEREFORE THE BOARD OF THE REGIONAL DISTRICT OF KITIMAT-STIKINE, in open meeting assembled, enacts as follows:

1. Title

This Bylaw may be cited as the "Kitimat-Stikine Floodplain Management Bylaw No. 656, 2015".

2. Purpose

2.1. The purpose of this Bylaw is:

a. to designate land as a floodplain in areas where the Board considers that flooding may occur;

b. to regulate the siting and construction of buildings and structures in floodplains and near watercourses and bodies of water in the Regional District of Kitimat-Stikine;

c. to protect against the loss of life; and

d. to minimize property damage, injury and trauma associated with flooding events.

3. Application

3.1. This Bylaw applies to those lands within Electoral Areas A, B, C, D, E and F of the Regional District of Kitimat-Stikine that are subject to any of the following zoning bylaws and amendments:

a. Greater Terrace Zoning Bylaw No. 37
b. Kispiox Valley Zoning Bylaw No. 53
c. Lakelse Lake Zoning Bylaw No. 57
d. Skeena Valley Zoning Bylaw No. 73
e. Thornhill Zoning Bylaw No. 194

f. Two Mile Zoning Bylaw No. 320
g. South Hazelton Bylaw No. 326
h. Community Planning Area No. 28, Dease Lake Land Use Regulation
i. Meziadin Rural Land Use Bylaw No. 316
j. Kitsault Zoning Bylaw No. 174

3.2. Information and direction for lands within the Regional District that are not subject to any zoning or land use bylaws can be found in the *Flood Hazard Area Land Use Management Guidelines* available at:

http://www.env.gov.bc.ca/wsd/public_safety/flood/pdfs_word/guidelines-2011.pdf

Further information and direction for development near Lakelse Lake can be found in the *Lakelse Lake Lakeshore Development Guidelines* available at:

http://www.rdks.bc.ca/sites/default/files/lakelse_lake_lakeshore_guidelines_2014.pdf

3.3. The following schedules are attached to and form an integral part of this Bylaw.

a. Floodplain Maps *(Schedule A)*

b. Lakelse Lake Stream Map *(Schedule B1 & B2)*

4. Definitions

In this Bylaw, unless the context otherwise requires;

Alluvial Fan means an alluvial deposit of a stream where it issues from a steep mountain valley or gorge upon a plain or at the junction of a tributary stream with a main stream, lake or other water body.

Designated Flood means a flood, which may occur in any given year, of such magnitude as to equal a flood having a 200-year recurrence interval, based on a frequency analysis of unregulated historic flood records or by regional analysis where there is inadequate stream flow data available.

Disaster means a calamity that:

(a) Is caused by accident, fire, explosion or technical failure or by the forces of nature, and

(b) has resulted in serious harm to the health, safety or welfare of people, or in widespread damage to property.

Disaster Relief Assistance Funding means financial assistance provided by the Lieutenant Governor in Council or the Minister in accordance with the regulations to persons who suffer loss as a result of a disaster.

Designated Flood Level means the observed or calculated elevation for the Designated Flood which is used in the calculation of the Flood Construction Level.

Dwelling Unit means one or more rooms, used for residential accommodation of one or more individuals and contains sleeping, cooking and toilet facilities.

Flood Construction Level means the Designated Flood Level plus the allowance for freeboard and is used to establish the elevation of the underside of a floor system or top of concrete slab for habitable buildings. In the case of a manufactured home, the ground level or top of concrete or asphalt pad on which it is located shall be no lower than the Flood Construction Level.

Floodplain means an area that is susceptible to flooding from a watercourse, lake, wetland or other water body and for the purposes of administering this Bylaw, shall consist of the area submerged by the designated flood plus freeboard.

Floodplain Map means a map delineating the area that can be expected to flood, on average, once every 200 years (called the 200-year flood). It should be noted that:

- A 200-year flood can occur at any time in any given year,
- the indicated flood level may be exceeded, and
- portions of the floodplain can flood more frequently.

Floodplain maps show the location of the normal channel of a watercourse, surrounding features or development, ground elevations contours, flood levels and flood plain limits (the estimated elevation and horizontal extent of the high water marks of a 200-year flood).

Floodplain Setback means the minimum required distance from the natural boundary of a watercourse, lake or other water body 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.

Freeboard means the vertical distance added to a Designated Flood Level and is used to establish the Flood Construction Level.

Geodetic Elevation means the vertical distance above the Geoid as per the most current Canadian Geodetic Vertical Datum.

Habitable Area means any room or space within a building or structure that is or can be used for human occupancy, commercial sales, or storage of goods, possessions or equipment (including furnaces, hot water heating equipment, electrical panels, and similar equipment) which would be subject to damage if flooded.

Lake means an inland body of water greater than 1.0 hectares (2.47 acres) in area that contains water 12 months of the year.

Landfill means the placement of soil, gravel or other material on the surface of the land.

Natural Ground Level means the undisturbed ground elevation prior to site preparation.

Natural Boundary means the visible high watermark of any lake, river, watercourse, or other body of water as determined by a British Columbia Land Surveyor where the presence and action of the water are so common and usual and so long continued in all ordinary years as to mark upon the soil of the bed of the lake, river, watercourse, or other body of water a character distinct from that of the banks thereof, in respect to vegetation, as well as in respect to the nature of the soil itself.

Non-Standard Dike means a protective structure, training works, wall or dike-like structure used to prevent a watercourse from leaving its channel or stream bed but which has not been engineered and does not receive regular ongoing maintenance by an authority or local government.

Pad means a graveled or paved surface on which blocks, posts, runners, or strip footings are placed for the purpose of supporting a mobile home or unit or a concrete pad for supporting a habitable area.

Qualified Professional means an engineer, hydrologist or geoscientist experienced and trained in geotechnical study and geohazard assessment who is registered or licensed under the provisions of the *Engineers and Geoscientists Act.*

Standard Dike means a dike built to a minimum crest elevation equal to the flood construction level and meeting standards of design and construction approved by the Province and maintained by an ongoing authority such as a local government body or a diking authority under the *Dike Maintenance Act* or successor legislation.

Structure means any type of construction or building whether fixed to, supported by or sunk into the land or water, including retaining structures of any size but excluding landscaping, fences and paving.

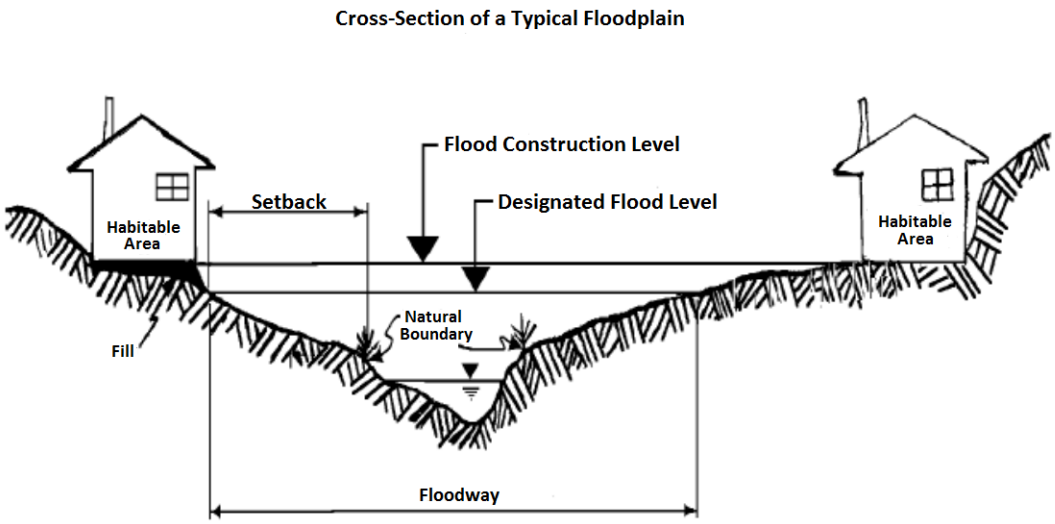
Surveyors Certificate means a building location survey as prepared by a British Columbia Land Surveyor (BCLS) that locates the position of structures on a property in relationship to the property lines, the natural boundary of any waterbody and the flood construction level.

Water Body means any lake, ocean, watercourse or wetland.

Watercourse means any natural or man made depression with well-defined banks and a bed 0.6 metres (2.0 feet) or more below the surrounding land serving to give direction to a current of water at least six months of the year and/or having a drainage area of two square kilometres (0.8 square miles) or more upstream of the point of consideration and shall include those watercourses named on the Lakelse Lake Stream Map (*Schedule B1 & B2*).

Wetland means land seasonally or permanently covered by water and dominated by water-tolerant vegetation. Wetlands include swamps, marshes, bogs, sloughs and fens but not lands periodically flooded for agricultural purposes.

Figure 1.



Note: this diagram is provided for illustration purposes only for the terms shown and defined herein this Bylaw

5. Administration

5.1. Where there is a conflict between this Bylaw and flood setbacks or other regulations in a zoning bylaw that applies to land subject to this Bylaw, the provisions of this Bylaw will prevail.

5.2. No structure shall be constructed, reconstructed, altered, moved or extended by the owner, occupier or other person so that it contravenes the requirements of this Bylaw.

5.3. The Building Inspector, Bylaw Enforcement Officer or other persons appointed by the Regional District Board may administer this Bylaw and may enter at all reasonable times on any property to which this Bylaw applies to inspect and determine whether the regulations, prohibitions and requirements of this Bylaw are being met.

5.4. A Building Inspector, Bylaw Enforcement Officer or other persons appointed by the Regional District Board who observes a contravention of this Bylaw may issue applicable notices and orders to any owner, occupier or other person who appears to have committed or allowed the contravention.

5.5. No person shall prevent or obstruct a Building Inspector, Bylaw Enforcement Officer or other persons appointed by the Regional District Board from performing his or her duties under this Bylaw.

5.6. A person who contravenes a regulation or requirement of this Bylaw commits an offence, is punishable on summary conviction, and is liable to a fine not exceeding $2,000.00.

5.7. Each day during which a violation is continued shall be deemed to constitute a new and separate offence.

5.8. If any section, subsection, sentence, clause or phrase of this Bylaw is for any reason held to be invalid by the decision of any court of competent jurisdiction, the invalid portion shall be severed and the decision that it is invalid shall not affect the validity of the remainder.

5.9. By the enactment, administration or enforcement of this Bylaw, the Regional District of Kitimat-Stikine does not represent to any person that any building or structure, including a mobile home, located, constructed or used in accordance with the regulations and requirements of this Bylaw or in accordance with any advice, information, direction and guidance provided by the Regional District in the course of the administration of this Bylaw will not be damaged by flooding.

5.10. Nothing in this Bylaw relieves the owner or occupier of the responsibility for complying with all other enactments of any authority having jurisdiction that may apply to the use and development of land.

6. Floodplain Designation

6.1. The following land is designated as floodplain:

a. Lands shown as Floodplain on a Floodplain Map.
b. Those lands lower in elevation than the Flood Construction Level specified in section 7 of this Bylaw.
c. Those lands within the Floodplain Setbacks specified in section 8 of this Bylaw.
d. Those lands within an area that is susceptible to flooding from a watercourse, lake, wetland or other water body.

7. Flood Construction Levels

7.1. The following elevations are specified as the Flood Construction Level.

7.2. If two or more Flood Construction Levels apply to a parcel of property in the following sections, the higher shall apply.

7.3. Where a parcel of property is within an area shown as Floodplain on a Floodplain Map, the Flood Construction Level for that property, including freeboard, shall be determined by interpolation from the 200 year floodplain limit shown on the Floodplain Maps (*Schedule A*).

7.4. Where a parcel of property is not within an area shown as Floodplain on a Floodplain Map, the following elevations are specified as Flood Construction Levels for lands that are regulated by Greater Terrace Zoning Bylaw No. 37:

i) 6.0 meters above the natural boundary of the Skeena River;
ii) 3.0 meters above the natural boundary of the Kitsumkalum River and Zymoetz River;
iii) 3.0 meters above the natural boundary of any other watercourse;
iv) 1.5 meters above the natural boundary of a lake.

7.5. Where a parcel of property is not within an area shown as Floodplain on a Floodplain Map, the following elevations are specified as Flood Construction Levels for lands that are regulated by Kispiox Valley Zoning Bylaw No. 53:

i) 6.0 meters above the natural boundary of the Skeena River;
ii) 3.0 meters above the natural boundary of the Kispiox River;
iii) 3.0 meters above the natural boundary of any other watercourse;
iv) 1.5 meters above the natural boundary of a lake.

7.6. Where a parcel of property is not within an area shown as Floodplain on a Floodplain Map, the following elevations are specified as Flood Construction Levels for lands that are regulated by Lakelse Lake Zoning Bylaw No. 57:

i) The Flood Construction Level for any property at Lakelse Lake shall be 75.0 meters Geodetic Survey of Canada;
ii) 3.0 meters above the natural boundary of the Lakelse River, Williams Creek, Hatchery/Granite Creek, Coldwater Creek and any other watercourse;
iii) 1.5 meters above the natural boundary of Sockeye Creek, Furlong Creek, Clearwater Creek, Andalas Creek, Schulbuckhand Creek, Ena Creek, Herman Creek, all watercourses named on the Lakelse Lake Stream Map (*Schedule B1 & B2*) and any other wetland or lake other than Lakelse Lake.

7.7. Where a parcel of property is not within an area shown as Floodplain on a Floodplain Map, the following elevations are specified as Flood Construction Levels for lands that are regulated by Skeena Valley Zoning Bylaw No. 73:

i) 6.0 meters above the natural boundary of the Skeena River;
ii) 4.5 meters above the natural boundary of the Bulkley River;
iii) 3.0 meters above the natural boundary of the Suskwa River;
iv) 3.0 meters above the natural boundary of any watercourse;
v) 1.5 meters above the natural boundary of any other lake or wetland.

7.8. Where a parcel of property is not within an area shown as Floodplain on a Floodplain Map, the following elevations are specified as Flood Construction Levels for lands that are regulated by Thornhill Zoning Bylaw No. 194:

i) 6.0 meters above the natural boundary of the Skeena River;
ii) 3.0 meters above the natural boundary of any other watercourse;
iii) 1.5 meters above the natural boundary of any other lake or wetland.

7.9. Where a parcel of property is not within an area shown as Floodplain on a Floodplain Map, the following elevations are specified as Flood Construction Levels for lands that are regulated by Two Mile Zoning Bylaw No. 320:

i) 6.0 meters above the natural boundary of the Skeena River;
ii) 4.5 meters above the natural boundary of the Bulkley River;
iii) 3.0 meters above the natural boundary of any watercourse;
iv) 1.5 meters above the natural boundary of any other lake or wetland.

7.10. Where a parcel of property is not within an area shown as Floodplain on a Floodplain Map, the following elevations are specified as Flood Construction Levels for lands that are regulated by South Hazelton Bylaw No. 326:

i) 6.0 meters above the natural boundary of the Skeena River;
ii) 4.5 meters above the natural boundary of the Bulkley River;

iii) 3.0 meters above the natural boundary of any other watercourse;
iv) 1.5 meters above the natural boundary of a lake or wetland.

7.11. Where a parcel of property is not within an area shown as Floodplain on a Floodplain Map, the following elevations are specified as Flood Construction Levels for lands that are regulated by Dease Lake Land Use Regulation Bylaw:

i) The Flood Construction Level for any property at Dease Lake shall be 755.1 meters Geodetic Survey of Canada;
ii) 3.0 meters above the natural boundary of Mess Creek, Hotel Creek and any other watercourse;
iii) 1.5 meters above the natural boundary of a lake or wetland.

7.12. Where a parcel of property is not within an area shown as Floodplain on a Floodplain Map, the following elevations are specified as Flood Construction Levels for lands that are regulated by Meziadin Rural Land Use Bylaw No. 316:

i) 6.0 meters above the natural boundary of the Nass River
ii) 3.0 meters above the natural boundary of the White River, Meziadin River and Meziadin Lake or any other watercourse;
iii) 1.5 meters above the natural boundary of a lake or wetland.

7.13. Where a parcel of property is not within an area shown as Floodplain on a Floodplain Map, the following elevations are specified as Flood Construction Levels for lands that are regulated by Kitsault Zoning Bylaw No. 174:

i) 3.0 meters above the natural boundary of any watercourse;
ii) 1.5 meters above the natural boundary of a lake or wetland.

7.14. The Flood Construction Levels for property upstream of culverts and bridges should be a minimum of 0.3 meters above the crown of the road.

8. Floodplain Setbacks

8.1. The following distances are specified as Floodplain Setbacks.

8.2. The following distances are specified as Floodplain Setbacks for those lands regulated by Greater Terrace Zoning Bylaw No. 37:

i) 60 meters from the natural boundary of the Skeena River;
ii) 30 meters from the natural boundary of the Kitsumkalum River and Zymoetz River;
iii) 30 meters from the natural boundary of any other watercourse;
iv) 7.5 meters from the natural boundary of a lake or wetland.

8.3. The following distances are specified as Floodplain Setbacks for those lands regulated by Kispiox Valley Zoning Bylaw No. 53:

i) 60 meters from the natural boundary of the Skeena River;
ii) 30 meters from the natural boundary of the Kispiox River;
iii) 30 meters from the natural boundary of any watercourse;
iv) 7.5 meters from the natural boundary of a lake or wetland.

8.4. The following distances are specified as Floodplain Setbacks for those lands regulated by Lakelse Lake Zoning Bylaw No. 57:

i) 30 meters from the natural boundary of the Lakelse River, Williams Creek, Hatchery/Granite Creek, Coldwater Creek and any other watercourse;
ii) 15 meters from the natural boundary of Sockeye Creek, Furlong Creek, Clearwater Creek, Andalas Creek, Schulbuckhand Creek, Ena Creek, Herman Creek;
iii) 7.5 meters from the natural boundary of Lakelse Lake and any other lake or wetland;
iv) 3.0 meters from the natural boundary of watercourses named on the Lakelse Lake Stream Map *(Schedule B1 & B2).*

8.5. The following distances are specified as Floodplain Setbacks for those lands regulated by Skeena Valley Zoning Bylaw No. 73:

i) 60 meters from the natural boundary of the Skeena River;
ii) 45 meters from the natural boundary of the Bulkley River;
iii) 30 meters from the natural boundary of any other watercourse;
iv) 7.5 meters from the natural boundary of a lake or wetland.

8.6. The following distances are specified as Floodplain Setbacks for those lands regulated by Thornhill Zoning Bylaw No. 194:

i) 60 meters from the natural boundary of the Skeena River;
ii) 30 meters from the natural boundary of any other watercourse;
iii) 7.5 meters from the natural boundary of a lake or wetland.

8.7. The following distances are specified as Floodplain Setbacks for those lands regulated by Two Mile Zoning Bylaw No. 320:

i) 60 meters from the natural boundary of the Skeena River;
ii) 45 meters from the natural boundary of the Bulkley River;
iii) 30 meters from the natural boundary of any other watercourse;
iv) 7.5 meters from the natural boundary of a lake or wetland.

8.8. The following distances are specified as Floodplain Setbacks for those lands regulated by South Hazelton Zoning Bylaw No. 326:

i) 60 meters from the natural boundary of the Skeena River;
ii) 45 meters from the natural boundary of the Bulkley River;
iii) 30 meters from the natural boundary of any other watercourse;
iv) 7.5 meters from the natural boundary of a lake or wetland.

8.9. The following distances are specified as Floodplain Setbacks for those lands regulated by Dease Lake Land Use Regulation:

i) 30 meters from the natural boundary of Mess Creek, Hotel Creek and any other watercourse;
ii) 15 meters from the natural boundary of Dease Lake;
iii) 7.5 meters from the natural boundary of a lake or wetland.

8.10. The following distances are specified as Floodplain Setbacks for those lands regulated by Meziadin Rural Land Use Bylaw No. 316.

i) 60 meters from the natural boundary of the Nass River;
ii) 30 meters from the natural boundary of the White River, Meziadin River and any other watercourse;
iii) 7.5 meters from the natural boundary of a lake or wetland.

8.11. The following distances are specified as Floodplain Setbacks for those lands regulated by Kitsault Zoning Bylaw No. 174.

i) 30 meters from the natural boundary of any watercourse;
ii) 7.5 meters from the natural boundary of a lake or wetland.

8.12. The following distances are specified as Floodplain Setbacks for all dikes and training works:

i) 30 meters from a non-standard dike or training works.
ii) 7.5 meters from a standard dike;

9. Application by Hazard Type

9.1 The following hazard types are identified within the *Flood Hazard Area Land Use Management Guidelines*. Further information and direction on management guidelines for flood hazard areas is available at the following link:

http://www.env.gov.bc.ca/wsd/public_safety/flood/pdfs_word/guidelines-2011.pdf

9.2 Alluvial Fans – See section 3.3 of the *Flood Hazard Area Land Use Management Guidelines* for guidance.

9.3 Areas Subject to Debris Flows – See section 3.4 of the *Flood Hazard Area Land Use Management Guidelines*

9.4 The Sea – See section 3.5 of the *Flood Hazard Area Land Use Management Guidelines* for guidance.

10. Floodplain Regulations

10.1. No dwelling unit, building or structure or part thereof, shall be constructed, reconstructed, moved, extended or located with the underside of the floor system used for habitation, business or the storage of goods damageable by floodwaters, or in the case of a manufactured home the ground level or top of pad on which it is located, lower than the Flood Construction Level specified in section 7 of this Bylaw.

10.2. No landfill or structure support required to support a floor system or pad shall be located, reconstructed, moved, extended or located within any Floodplain Setback specified in Section 8 of this Bylaw.

10.3. Unless otherwise specified in this Bylaw no area below the Flood Construction Level shall be used for the installation of furnaces, electrical switchgear, hot water heating appliances, gas fireplaces or other fixed equipment susceptible to damage by floodwater.

10.4. Structural support or compacted landfill or a combination of both may be used to elevate the underside of the floor system or the top of the pad above the Flood Construction Level. The structural support and/or landfill shall be protected against scour and erosion from flood flows, wave action, ice and other debris.

10.5. Unless a building is situated on lands with a natural elevation above the specified Flood Construction Level or greater, basements shall be prohibited and crawl spaces shall not exceed 1.2 meters in height to the underside of the floor system; and

a) All entry points for floodwaters, such as windows and doors shall be located above the Flood Construction Level.
b) The building foundation shall be constructed of materials to withstand the hydrostatic forces during the inundation of floodwaters up to the Flood Construction Level.

10.6. The Building Inspector, Bylaw Enforcement Officer or other persons appointed by the Regional District Board may require that a Surveyor's Certificate be provided to verify compliance with the flood level and setback specified in sections 7 and 8. The cost of verification is assumed by the land owner.

11. General Exemptions

11.1. The following developments are exempted from the Flood Construction Levels specified in this Bylaw, subject to the conditions specified for each:

i) A renovation of an existing building or structure that does not involve an addition thereto.

ii) An addition to a building or structure at the original non-conforming floor elevation, that would increase the size of the building or structure by less than 25 percent of the total floor (excluding decks, garages or carports) existing at the date of the adoption of Regional District of Kitimat-Stikine Bylaw No. 613 and where the property owner has provided a surveyors certificate indicating the original size of the building or structure prior to any addition and provided that the degree of non-conformity regarding the setback is not increased.

iii) That portion of a building or structure to be used as a garage or carport, entrance porch, domestic greenhouse or storage buildings not used for the storage of goods damageable by floodwaters.

iv) Farm buildings other than a dwelling unit, closed-sided livestock housing and buildings containing hazardous commodities such as herbicides, pesticides, fuels, oils and similar products.

v) Farm dwelling units on land parcels with British Columbia Assessment Authority Farm Classification, greater than 8.0 hectares in area, located within the Agricultural Land Reserve, shall be located with the underside of a floor system used for habitation or in the case of a manufactured home, the top of the pad on which it is to be located, no lower than 1.0 meter above the Natural Ground Elevation taken at any point on the perimeter of the building or no lower than the Flood Construction Level whichever is the lesser.

vi) Closed sided livestock housing not located behind a standard dike shall be located with the underside of the floor system or in the case of a mobile unit, the top of the pad or the ground surface on which it is located, no lower than 1.0 meter above the Natural Ground Elevation taken at any point on the perimeter of the building or no lower than the Flood Construction Level whichever is the lesser.

vii) Industrial uses, other than main electrical switch gear, shall be located with the underside of the floor system or the top of pad or in the case of a mobile structure, the top of pad or the ground surface on which it is located, no lower than the Flood Construction Level specified in section 7 of this Bylaw minus the Freeboard. The main electrical switch gear, shall be located no lower than the Flood Construction Level specified in section 7 of this Bylaw.

12. Site Specific Exemptions

12.1. An application by an owner to the Regional District for a site specific exemption from the application of section 524(6) of the *Local Government Act,* or from the provisions of this Bylaw shall be completed in the form provided by the Regional District and submitted in accordance with the instructions on the application. This provision is not a substitute for any requirements under Section 56 of the *Community Charter*.

12.2. As a condition of a site specific exemption, and in accordance with section 524(8) of the *Local Government Act*, the owner will be required, at his or her own expense, to commission a report certified by a Qualified Professional that must confirm the land may be safely used for the intended use, address exemption precedents in the surrounding area, and contain a description of the proposed development and recommendations for conditions, as applicable.

12.3. As a condition of a site specific exemption, and in accordance with section 524(8) of the *Local Government Act*, the owner will be required, at his or her own expense to prepare and register a restrictive covenant under section 219 of the *Land Title Act* in favour of the Regional District:

a) specifying conditions that would enable the land to be safely used for the use intended according to the terms of the Qualified Professional's report which will form part of the restrictive covenant;

b) acknowledging that no Disaster Relief Assistance is available for the developments, structures, building or the contents within; and

c) releasing and indemnifying the Regional District from liability in the event any damage is caused by flooding or erosion.

READ a first time this 18th day of March, 2016.

READ a second time as amended this 22nd day of April, 2016.

A Public Hearings with respect to this bylaw were held on the 12th & 13th day of April, 2016.

READ a third time this 22nd day of April, 2016.

ADOPTED this 27th day of May, 2016.

Chair

Administrator

Regional District of Kitimat-Stikine
Bylaw No.656, 2015
Schedule A

FLOODPLAIN MAPS

Floodplain maps are kept in the Regional District of Kitimat-Stikine office. These maps form an integral part of this Bylaw and are represented as *Schedule A.*

The following maps are available at the Ministry of Forests, Lands and Natural Resource Operations website:

http://www.env.gov.bc.ca/wsd/data_searches/fpm/reports/region6.html#skeenaltu

A number of floodplain maps are available for viewing in the office of the Regional District of Kitimat Stikine and include, but are not limited to the following:

1. British Columbia Ministry of Environment, Water Management Branch Floodplain Mapping for the:

    i) *Skeena and Bulkley Rivers at Hazelton, September 1994, Drawing No 91-1 Sheet 1.*

    ii) *Zymoetz (Copper) River, June 1985, Drawing Number 84-63, Sheet 1.*

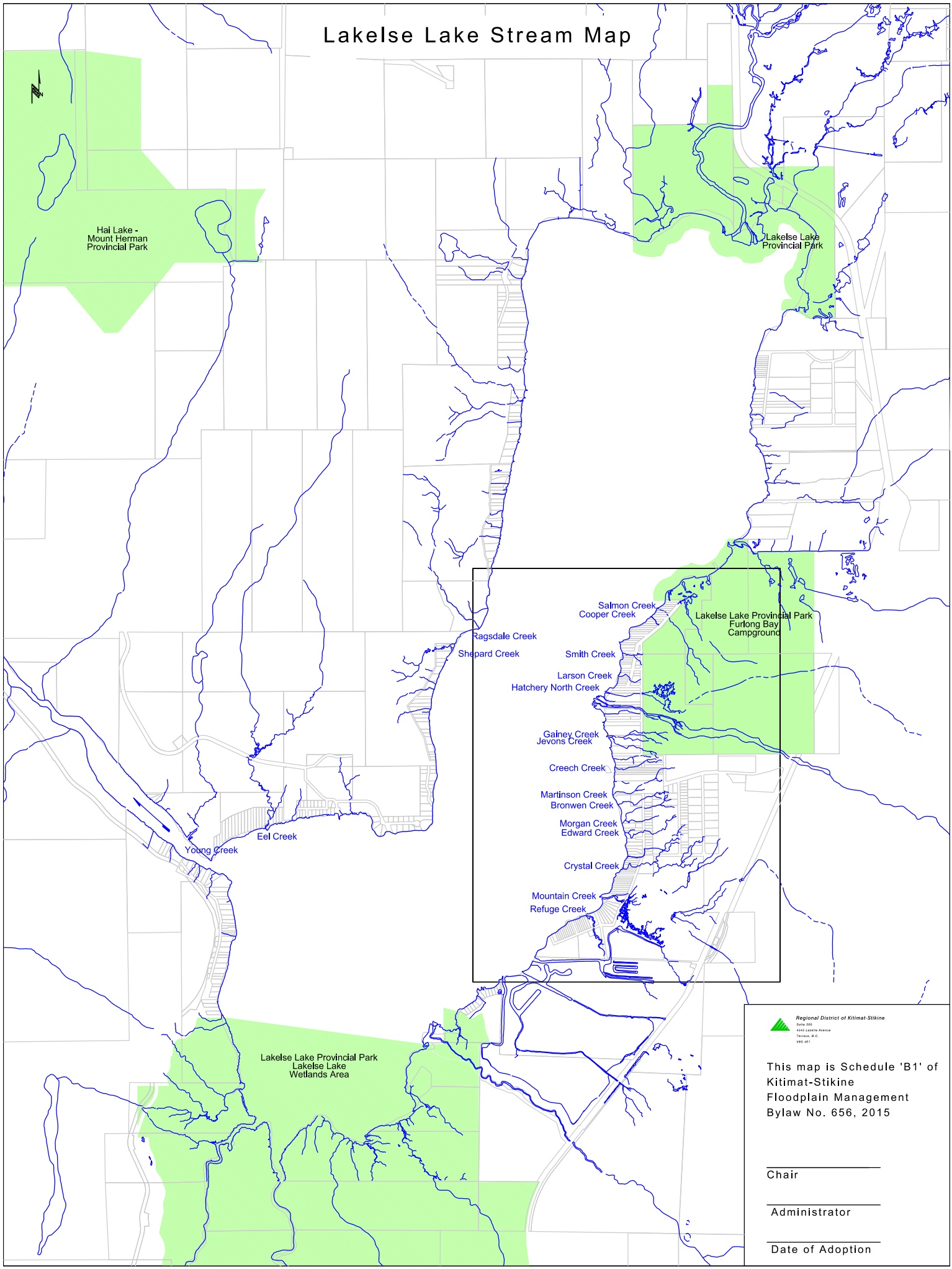
    iii) *Kitimat River, March 1982, Drawing No. A5328 Sheets 1 to 11.*

    iv) *Skeena River Lakelse-Terrace-Usk, October 1982, Drawing No. A5375 Sheets 1 to 9 (includes Kitsumkalum River and Zymagotitz Rivers).*

    v) *Skeena River Lakelse-Terrace-Usk, October 1982, Drawing No. A5375 Sheets 10 to 13.*

    vi) *Lakelse River and Lake, October 1990, Drawing No. 88-29 Sheets 1 to 6.*

Lakelse Lake Stream Map



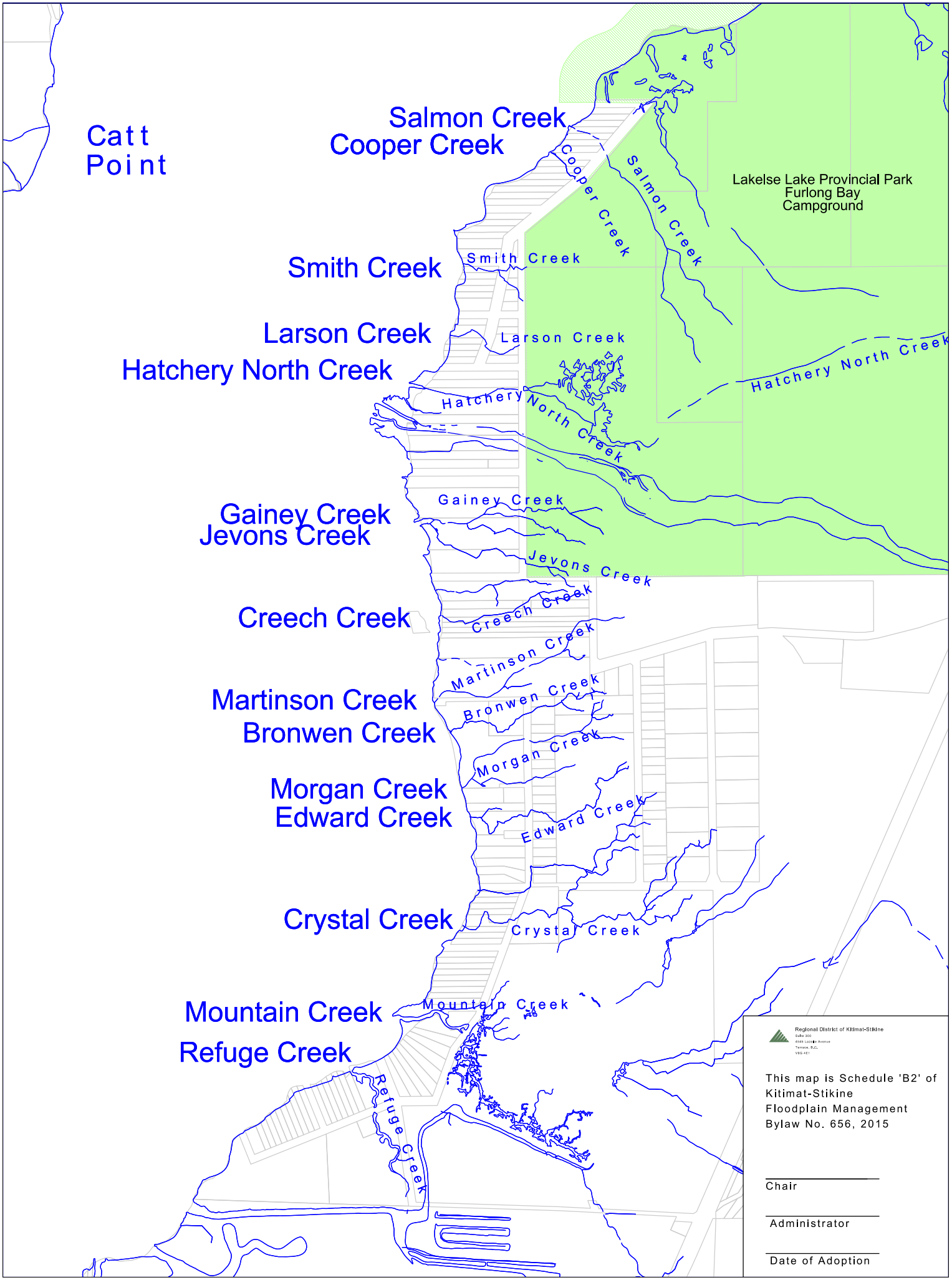
Regional District of Kitimat-Stikine
Suite 300
4545 Lazelle Avenue
Terrace, B.C.
V8G 4E1

This map is Schedule 'B1' of
Kitimat-Stikine
Floodplain Management
Bylaw No. 656, 2015

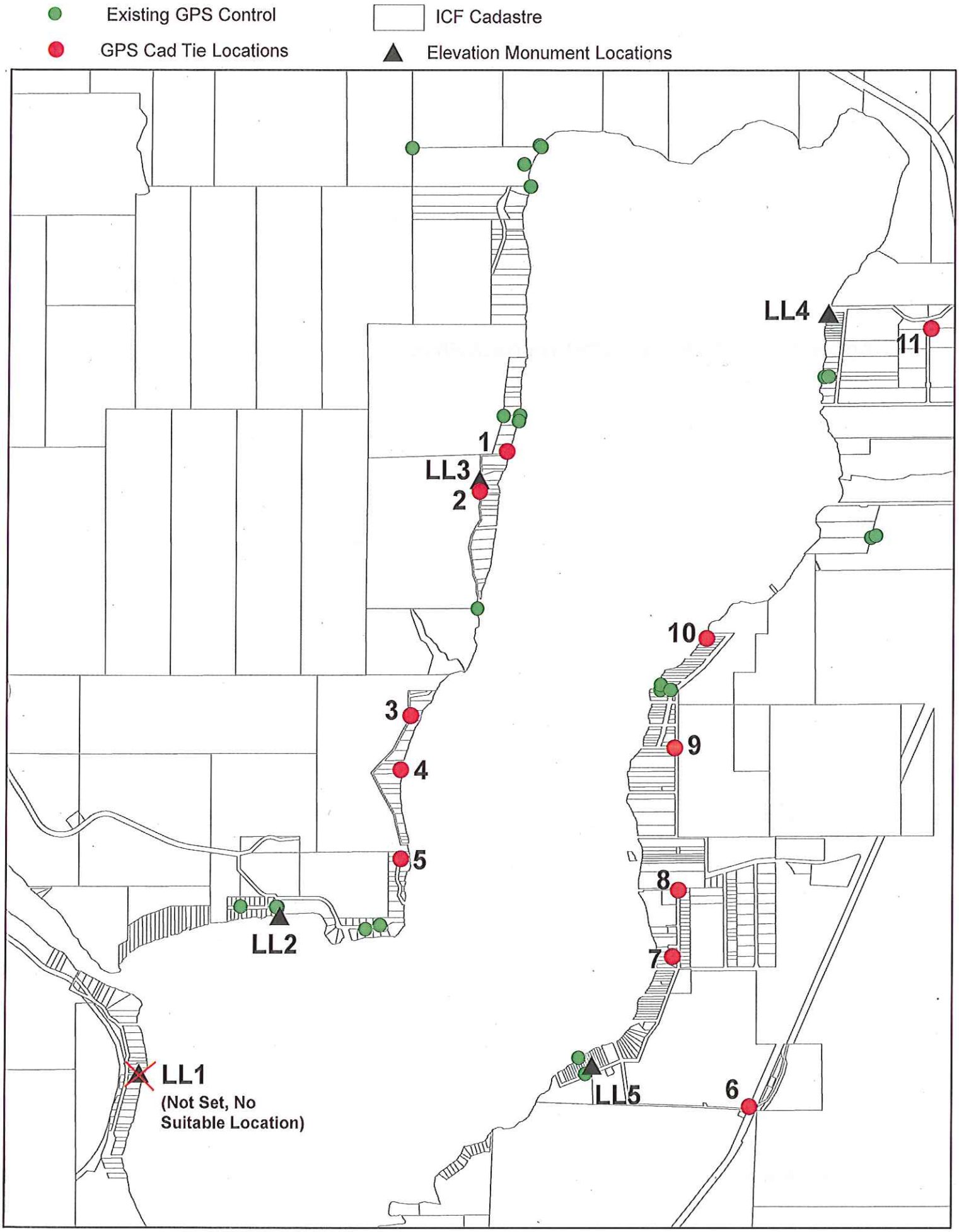
_____
Chair

_____
Administrator

_____
Date of Adoption

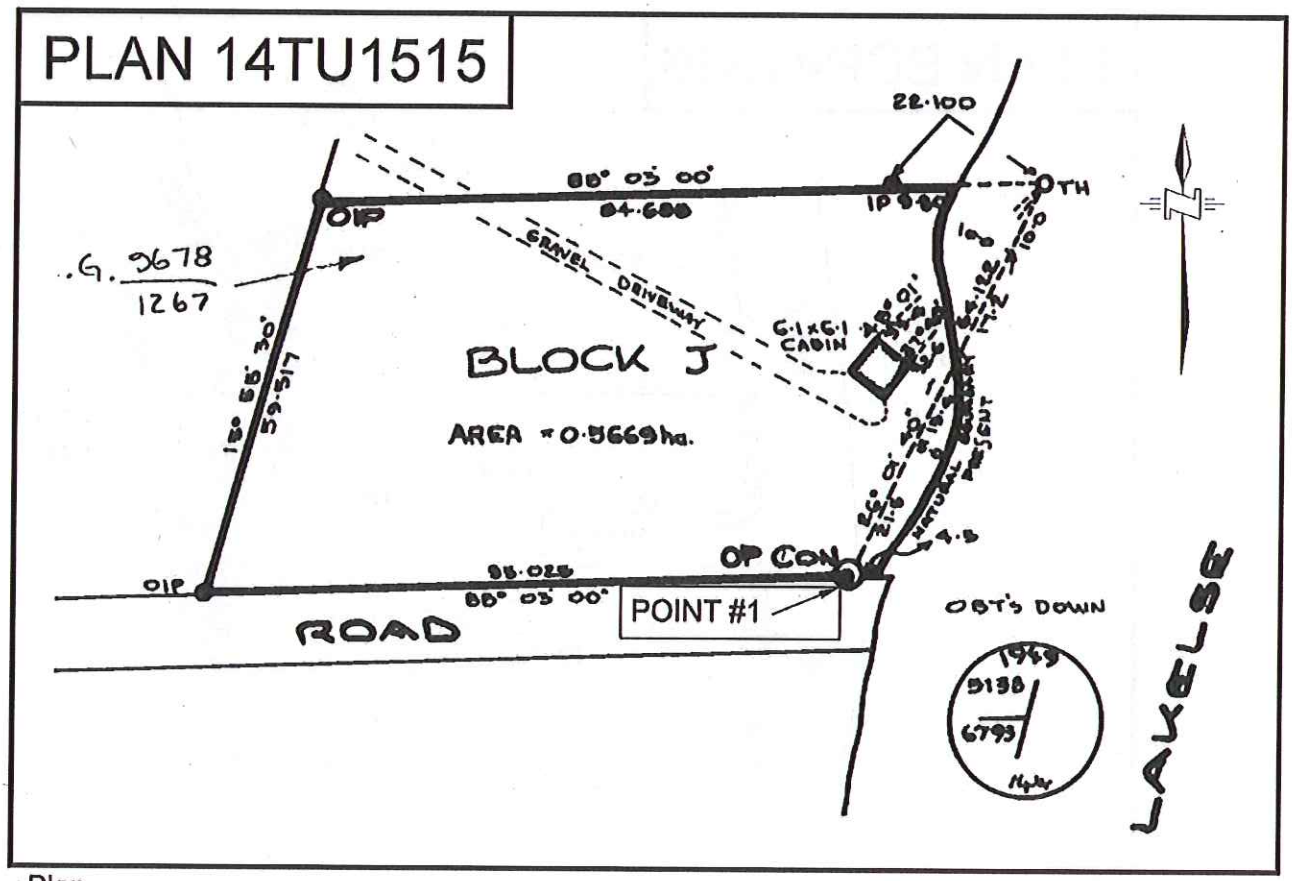

Catt Point
Salmon Creek
Cooper Creek
Cooper Creek
Salmon Creek
Lakelse Lake Provincial Park
Furlong Bay
Campground
Smith Creek
Smith Creek
Larson Creek
Larson Creek
Hatchery North Creek
Hatchery North Creek
Hatchery North Creek
Gainey Creek
Gainey Creek
Jevons Creek
Jevons Creek
Creech Creek
Creech Creek
Martinson Creek
Martinson Creek
Bronwen Creek
Bronwen Creek
Morgan Creek
Morgan Creek
Edward Creek
Edward Creek
Crystal Creek
Crystal Creek
Mountain Creek
Mountain Creek
Refuge Creek
Refuge Creek
Regional District of Kitimat-Stikine
This map is Schedule 'B2' of
Kitimat-Stikine
Floodplain Management
Bylaw No. 656, 2015
Chair
Administrator
Date of Adoption

GPS Cad Tie Locations At Lakelse Lake



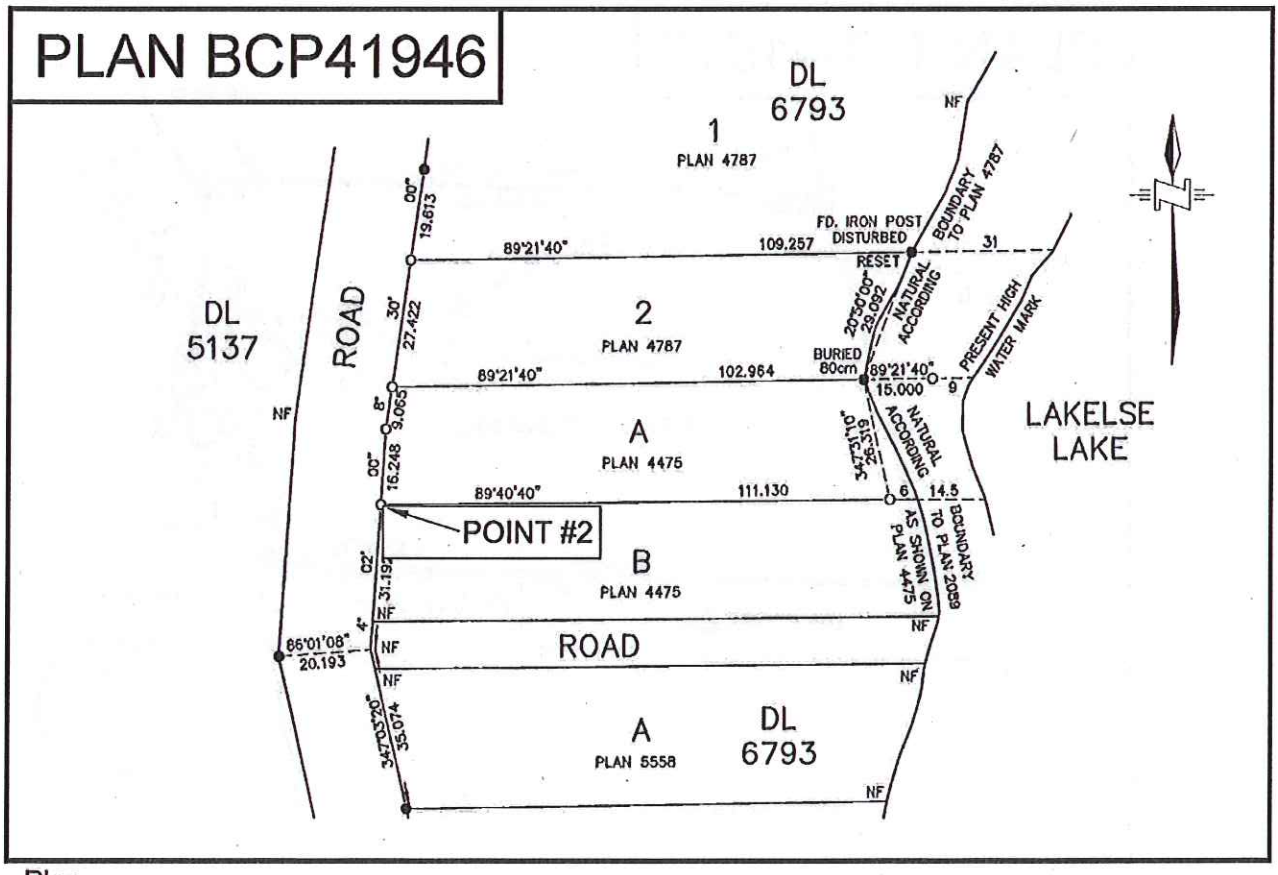
Appendix B – GPS Cadastral Tie Data Sheet

Project:	Regional District of Kitimat Stikine Lakelse Lake Cad Ties	**Project #:**	2321-44945-00	**Date:**	2016-11-15
Location:	Lakelse Lake, British Columbia.				
Point ID	1	**Horizontal Accuracy:**	0.06 metres	**Surveyor:**	Todd Basky, BCLS
Description:	Old Standard Concrete Post found near the SE corner Block J, Plan 14TU1515. 1790 Westside Road				
Latitude:	54° 23' 47.17908" N	**Longitude:**	128° 33' 38.10413" W	**Ellipsoid Ht:**	64.074
UTM Northing	6027720.025	**UTM Easting:**	528529.032	**Point Elev:**	72.954
Local Northing:	N/A	**Local Easting:**	N/A	**Convergence:**	0° 21' 26"
Northing Shift:	N/A	**Easting Shift:**	N/A	**Combined Scale Factor :**	0.9996000
Ellipsoid:	WGS84	**Geoid Model:**	HT2.0		
Projection:	UTM9 North	**HzDatum:**	NAD 83 (CSRS) 4.0.0.BC.1		
V. Datum:	CGVD28	**Survey Method:**	Total Station Tie from GNSS		
To convert from UTM to Local Ground, divide UTM Northing and UTM Easting by Project Scale Factor and then add Northing and Easting Shifts.					



Plan

Project:	Regional District of Kitimat Stikine Lakelse Lake Cad Ties	**Project #:**	2321-44945-00	**Date:**	2016-11-15
Location:	Lakelse Lake, British Columbia.				
Point ID	**2**	**Horizontal Accuracy:**	0.07 metres	**Surveyor:**	Todd Basky, BCLS
Description:	Standard Iron Post found at the SW corner of Lot A, Plan 4475, 1844 Westside Road. As shown on Posting Plan BCP41946.				
Latitude:	54° 23' 40.21363" N	**Longitude:**	128° 33' 47.44731" W	**Ellipsoid Ht:**	69.509
UTM Northing:	6027503.693	**UTM Easting:**	528361.866	**Point Elev:**	77.990
Local Northing:	N/A	**Local Easting:**	N/A	**Convergence:**	0° 21' 19"
Northing Shift:	N/A	**Easting Shift:**	N/A	**Combined Scale Factor :**	0.9995990
Ellipsoid:	WGS84	**Geoid Model:**	HT2.0		
Projection:	UTM9 North	**HzDatum:**	NAD 83 (CSRS) 4.0.0.BC.1		
V. Datum:	CGVD28	**Survey Method:**	Total Station Tie from GNSS		
To convert from UTM to Local Ground, divide UTM Northing and UTM Easting by Project Scale Factor and then add Northing and Easting Shifts.					



Plan

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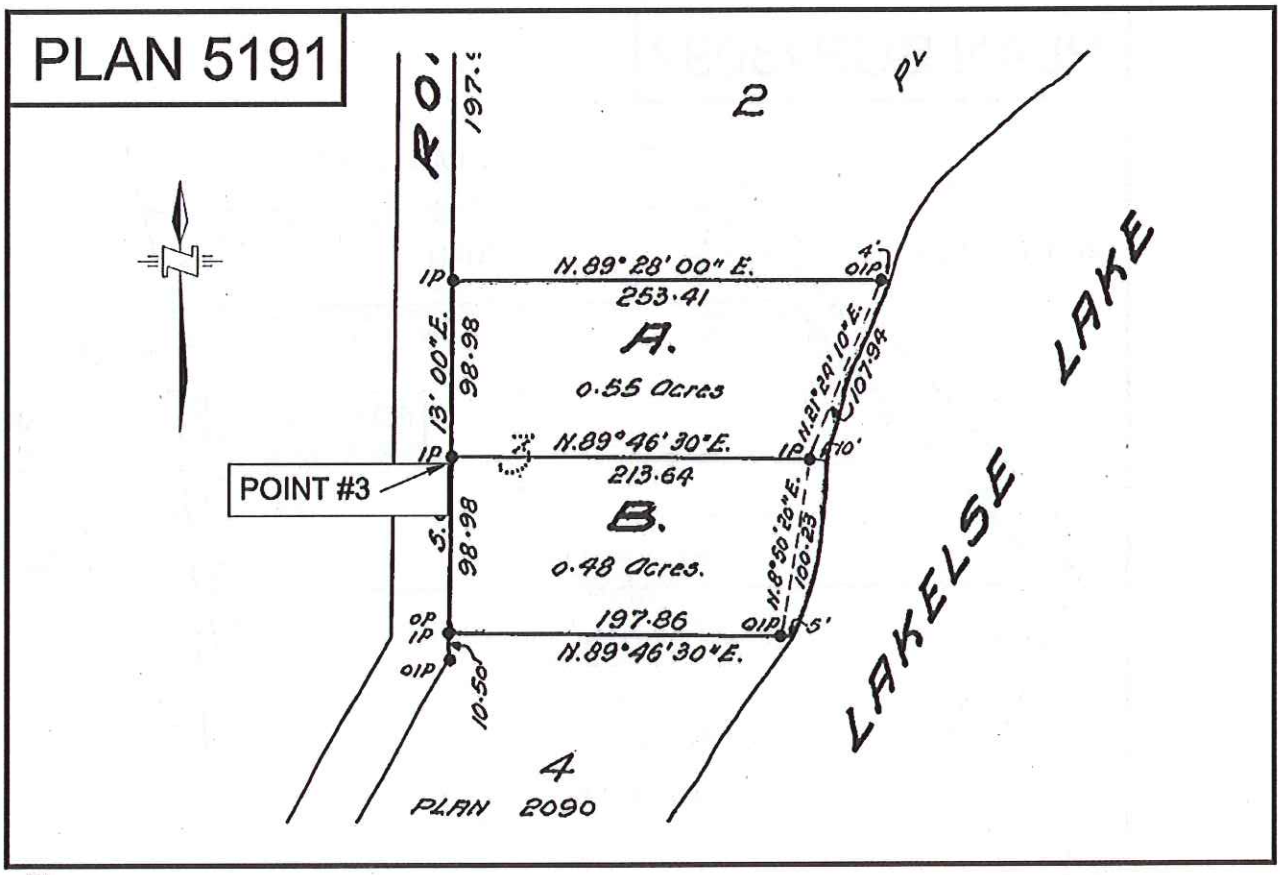
Project:	Regional District of Kitimat Stikine Lakelse Lake Cad Ties	**Project #:**	2321-44945-00	**Date:**	2016-11-15
Location:	Lakelse Lake, British Columbia.				
Point ID	3	**Horizontal Accuracy:**	0.07 metres	**Surveyor:**	Todd Basky, BCLS
Description:	Standard Iron Post found at the SW corner of Lot A, Plan 5191, 2144 Catt Point Road.				
Latitude:	54° 23' 40.21363" N	**Longitude:**	128° 33' 47.44731" W	**Ellipsoid Ht:**	70.609
UTM Northing:	6026132.562	**UTM Easting:**	527931.185	**Point Elev:**	79.498
Local Northing:	N/A	**Local Easting:**	N/A	**Convergence:**	0° 20' 59"
Northing Shift:	N/A	**Easting Shift:**	N/A	**Combined Scale Factor :**	0.9995990
Ellipsoid:	WGS84		**Geoid Model:**	HT2.0	
Projection:	UTM9 North		**HzDatum:**	NAD 83 (CSRS) 4.0.0.BC.1	
V. Datum:	CGVD28		**Survey Method:**	Total Station Tie from GNSS	
To convert from UTM to Local Ground, divide UTM Northing and UTM Easting by Project Scale Factor and then add Northing and Easting Shifts.					



Plan

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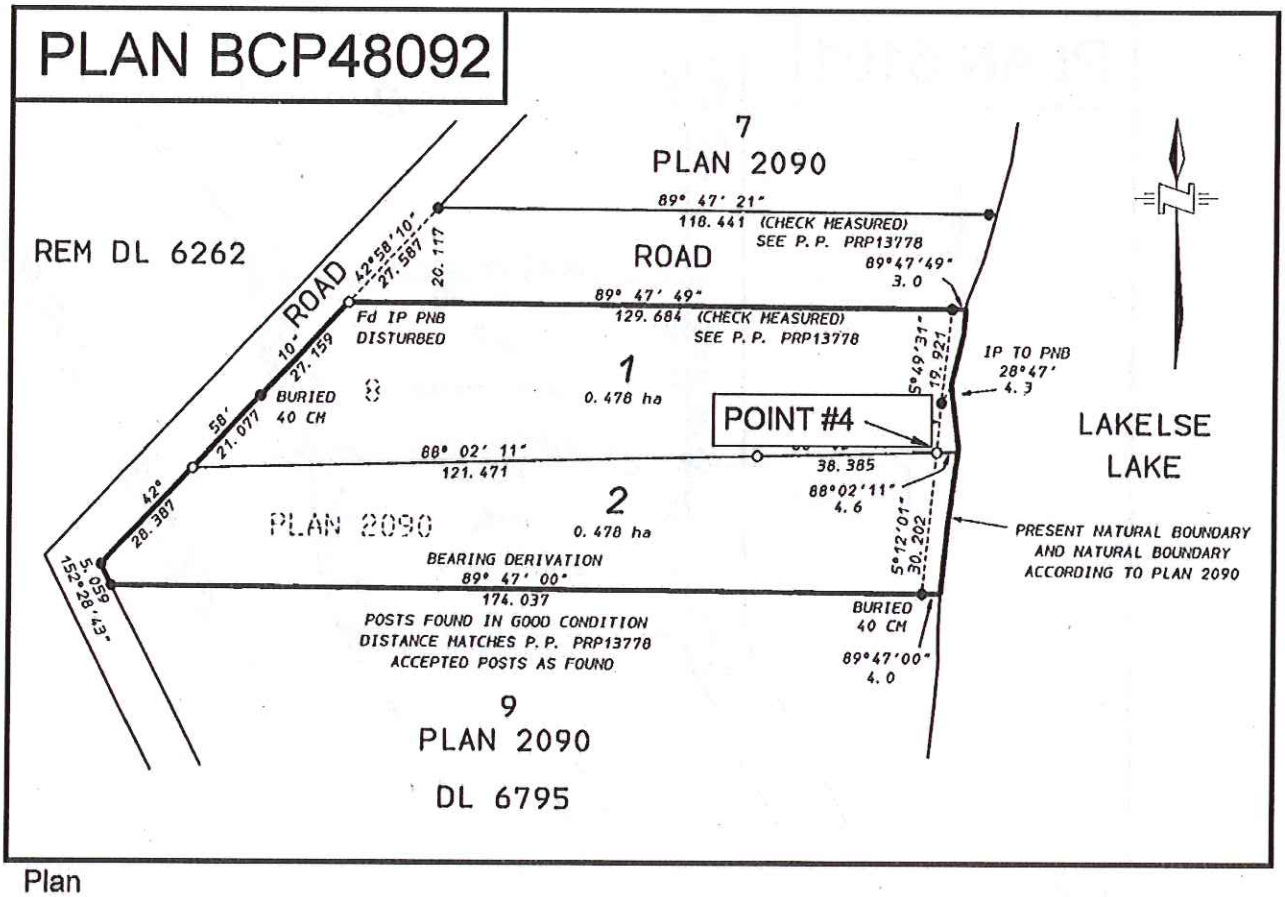
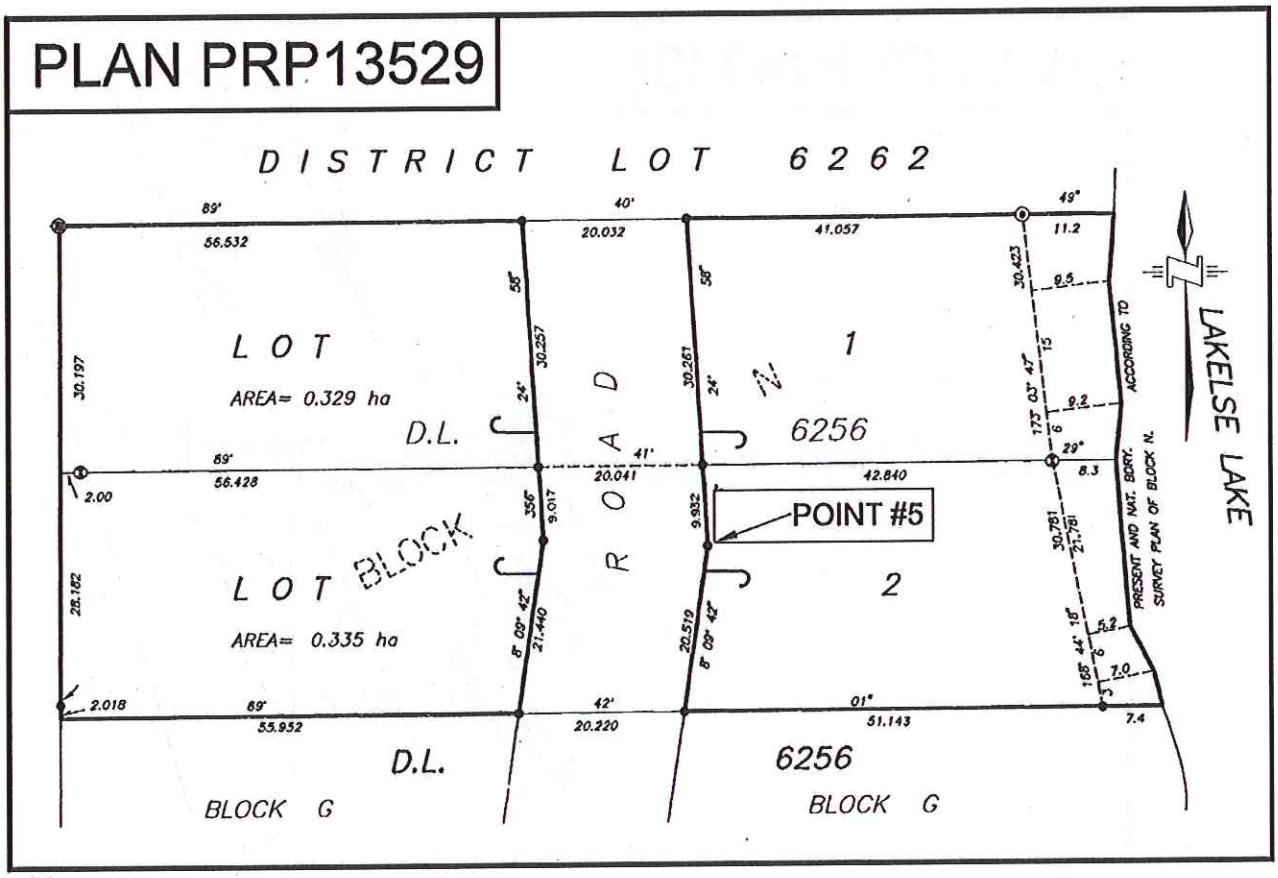
Project:	Regional District of Kitimat Stikine Lakelse Lake Cad Ties			**Project #:**	2321-44945-00	**Date:**	2016-11-15
Location:	Lakelse Lake, British Columbia.						
Point ID	**4**	**Horizontal Accuracy:**		0.04 metres	**Surveyor:**		Todd Basky, BCLS
Description:	Standard Iron Post found at the SE boundary of Lot 1, Plan BCP48092 (near the present natural boundary). 2204 Catt Point Road						
Latitude:	54° 22' 45.52499" N	**Longitude:**		128° 34' 14.35178" W	**Ellipsoid Ht:**		65.392
UTM Northing:	6025810.427	**UTM Easting:**		527886.929	**Point Elev:**		74.284
Local Northing:	N/A	**Local Easting:**		N/A	**Convergence:**		0° 20' 56"
Northing Shift:	N/A	**Easting Shift:**		N/A	**Combined Scale Factor :**		0.9995993
Ellipsoid:	WGS84		**Geoid Model:**		HT2.0		
Projection:	UTM9 North		**HzDatum:**		NAD 83 (CSRS) 4.0.0.BC.1		
V. Datum:	CGVD28		**Survey Method:**		Static GNSS		
To convert from UTM to Local Ground, divide UTM Northing and UTM Easting by Project Scale Factor and then add Northing and Easting Shifts.							



Plan

Project:	Regional District of Kitimat Stikine Lakelse Lake Cad Ties	**Project #:**	2321-44945-00	**Date:**	2016-11-15
Location:	Lakelse Lake, British Columbia.				
Point ID	**5**	**Horizontal Accuracy:**	0.04 metres	**Surveyor:**	Todd Basky, BCLS
Description:	Standard Iron Post found at the deflection point on the east side of road through Lot 2, Plan PRP13529. 2324 Catt Point Road				
Latitude:	54° 22' 27.95151" N	**Longitude:**	128° 34' 14.84050" W	**Ellipsoid Ht:**	75.757
UTM Northing:	6025267.223	**UTM Easting:**	527881.419	**Point Elev:**	84.653
Local Northing:	N/A	**Local Easting:**	N/A	**Convergence:**	0° 20' 56"
Northing Shift:	N/A	**Easting Shift:**	N/A	**Combined Scale Factor :**	0.9995977
Ellipsoid:	WGS84	**Geoid Model:**	HT2.0		
Projection:	UTM9 North	**HzDatum:**	NAD 83 (CSRS) 4.0.0.BC.1		
V. Datum:	CGVD28	**Survey Method:**	Static GNSS		
To convert from UTM to Local Ground, divide UTM Northing and UTM Easting by Project Scale Factor and then add Northing and Easting Shifts.					



Plan

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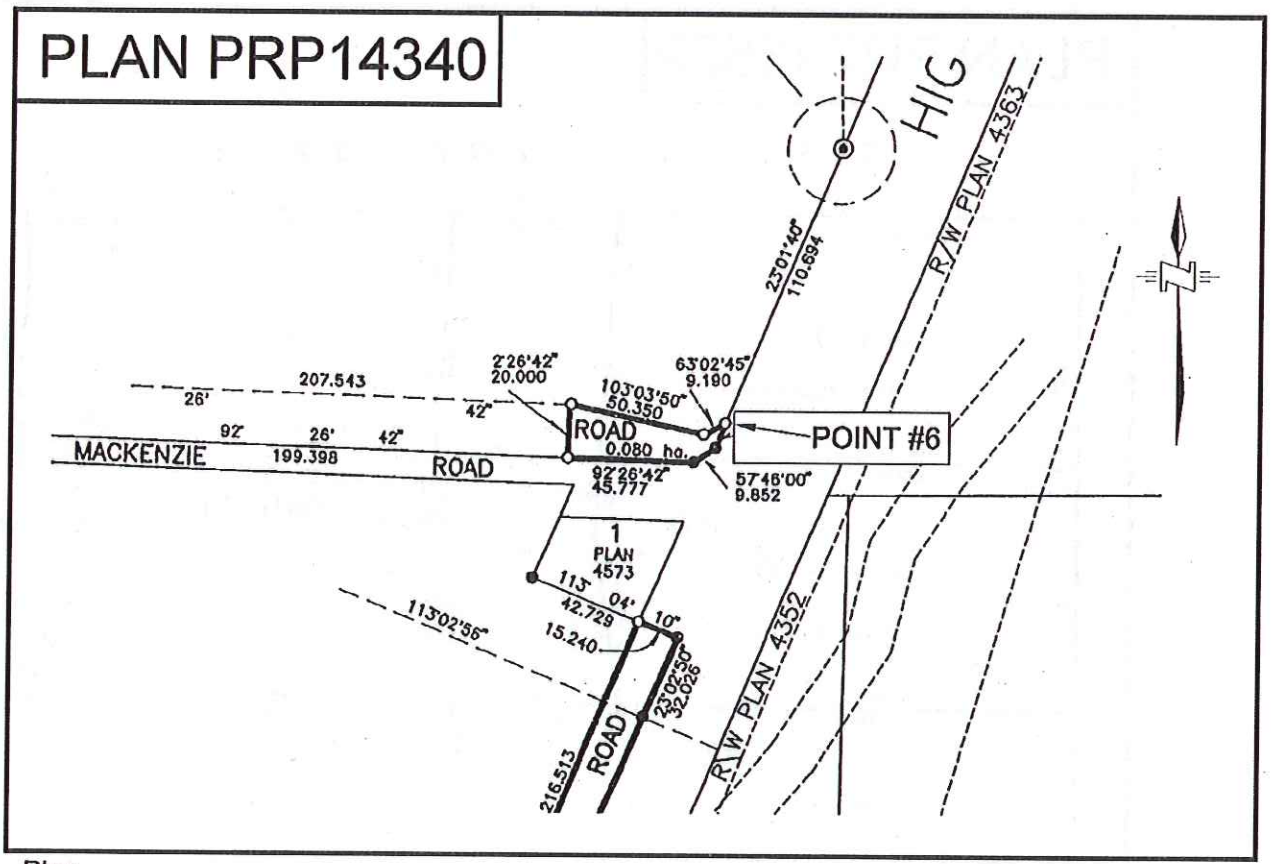
Project:	Regional District of Kitimat Stikine Lakelse Lake Cad Ties	**Project #:**	2321-44945-00	**Date:**	2016-11-14
Location:	Lakelse Lake, British Columbia.				
Point ID	6	**Horizontal Accuracy:**	0.04 metres	**Surveyor:**	Todd Basky, BCLS
Description:	Standard Iron Post found at the NW corner intersection of Hwy 16 and McKenzie Avenue. Point #6 is on Lot 1, Plan PRP14339, being the most northeasterly post set on Road Plan PRP14340.				
Latitude:	54° 21' 38.75088" N	**Longitude:**	128° 32' 16.51290" W	**Ellipsoid Ht:**	72.771
UTM Northing:	6023760.066	**UTM Easting:**	530026.519	**Point Elev:**	81.634
Local Northing:	N/A	**Local Easting:**	N/A	**Convergence:**	0° 22' 32"
Northing Shift:	N/A	**Easting Shift:**	N/A	**Combined Scale Factor :**	0.9995997
Ellipsoid:	WGS84	**Geoid Model:**	HT2.0		
Projection:	UTM9 North	**HzDatum:**	NAD 83 (CSRS) 4.0.0.BC.1		
V. Datum:	CGVD28	**Survey Method:**	Static GNSS		
To convert from UTM to Local Ground, divide UTM Northing and UTM Easting by Project Scale Factor and then add Northing and Easting Shifts.					



Plan

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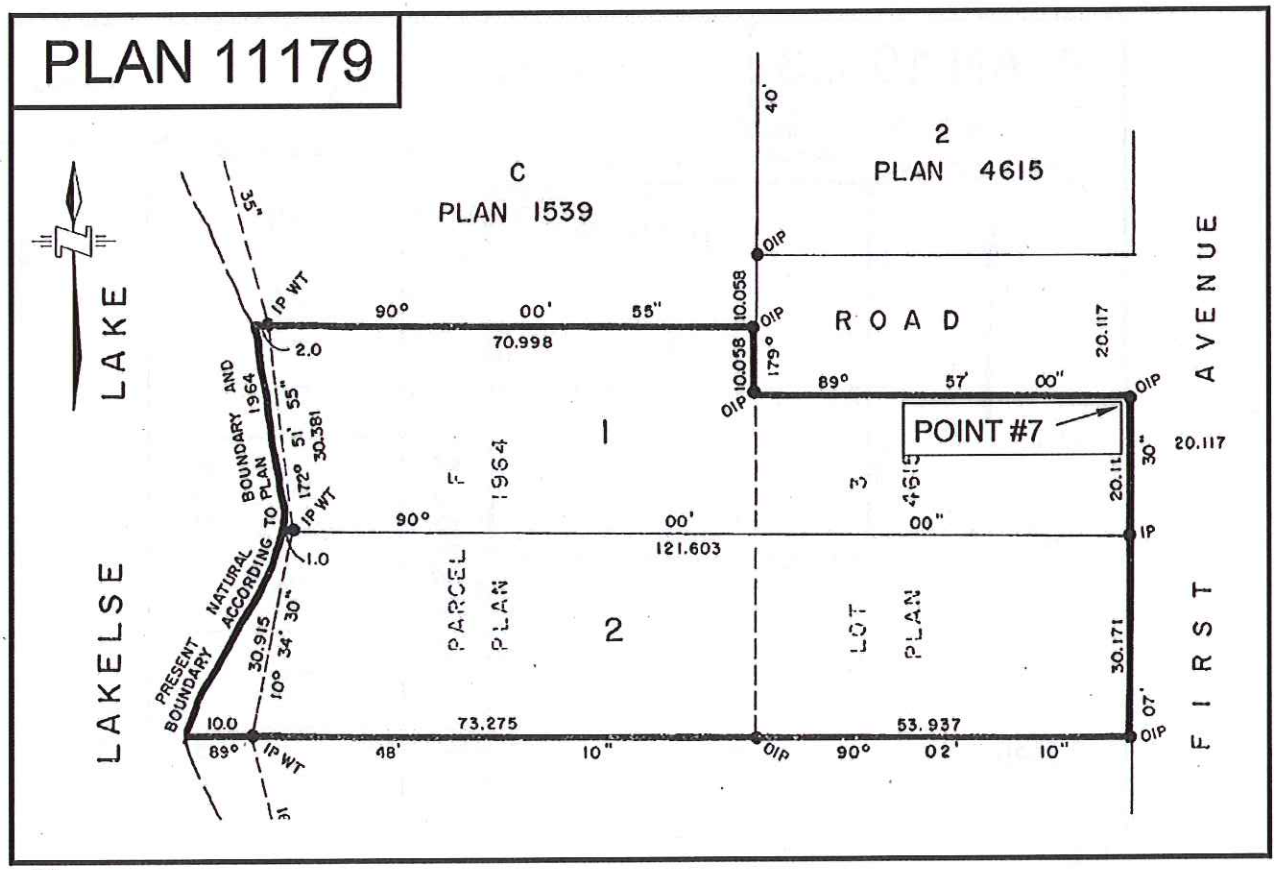
Project:	Regional District of Kitimat Stikine Lakelse Lake Cad Ties	**Project #:**	2321-44945-00	**Date:**	2016-11-17
Location:	Lakelse Lake, British Columbia.				
Point ID	7	**Horizontal Accuracy:**	0.05 metres	**Surveyor:**	Todd Basky, BCLS
Description:	Standard Iron Post found at the NE corner Lot 1, Plan 11179, 2477 First Avenue.				
Latitude:	54° 22' 09.85474" N	**Longitude:**	128° 32' 41.06935" W	**Ellipsoid Ht:**	65.734
UTM Northing:	6024718.517	**UTM Easting:**	529577.061	**Point Elev:**	74.613
Local Northing:	N/A	**Local Easting:**	N/A	**Convergence:**	0° 22' 12"
Northing Shift:	N/A	**Easting Shift:**	N/A	**Combined Scale Factor :**	0.9996000
Ellipsoid:	WGS84		**Geoid Model:**	HT2.0	
Projection:	UTM9 North		**HzDatum:**	NAD 83 (CSRS) 4.0.0.BC.1	
V. Datum:	CGVD28		**Survey Method:**	Total Station Tie from GNSS	
To convert from UTM to Local Ground, divide UTM Northing and UTM Easting by Project Scale Factor and then add Northing and Easting Shifts.					



Plan

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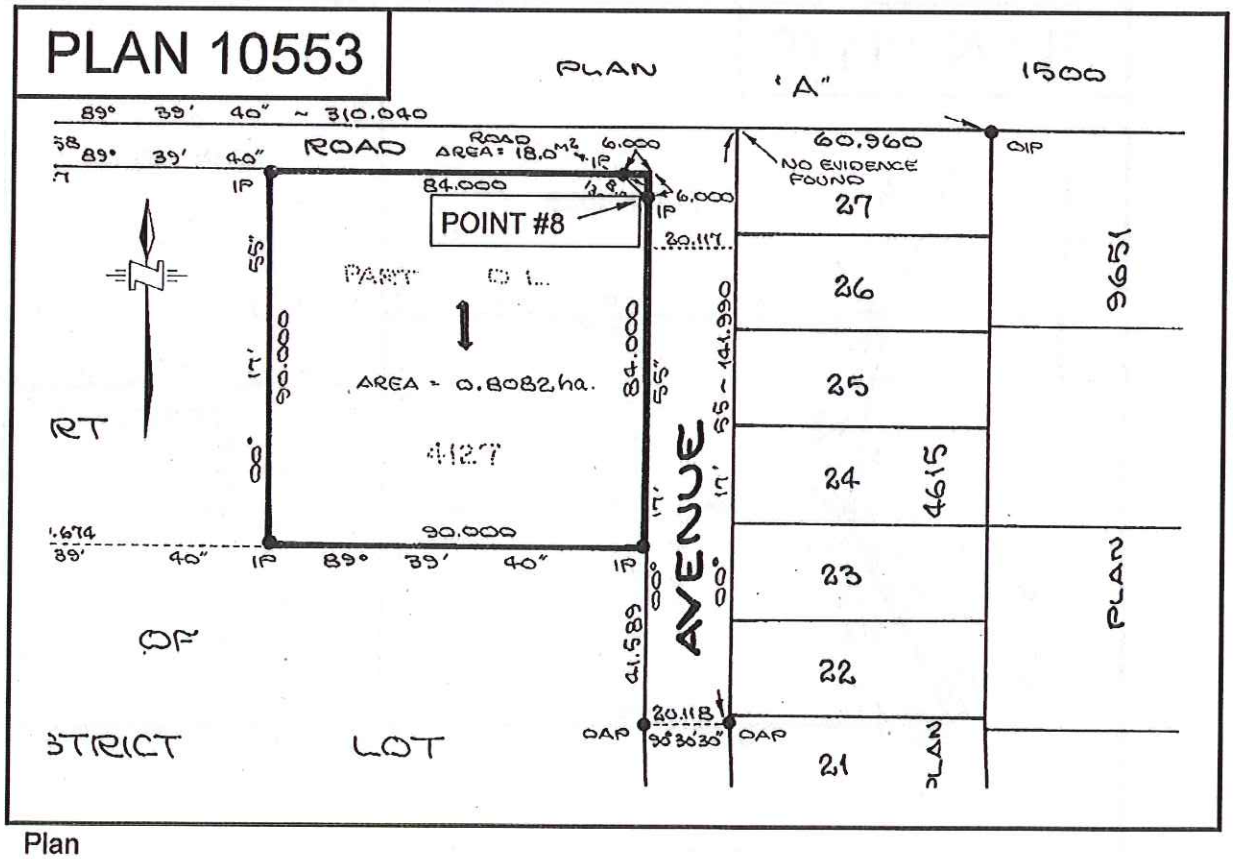
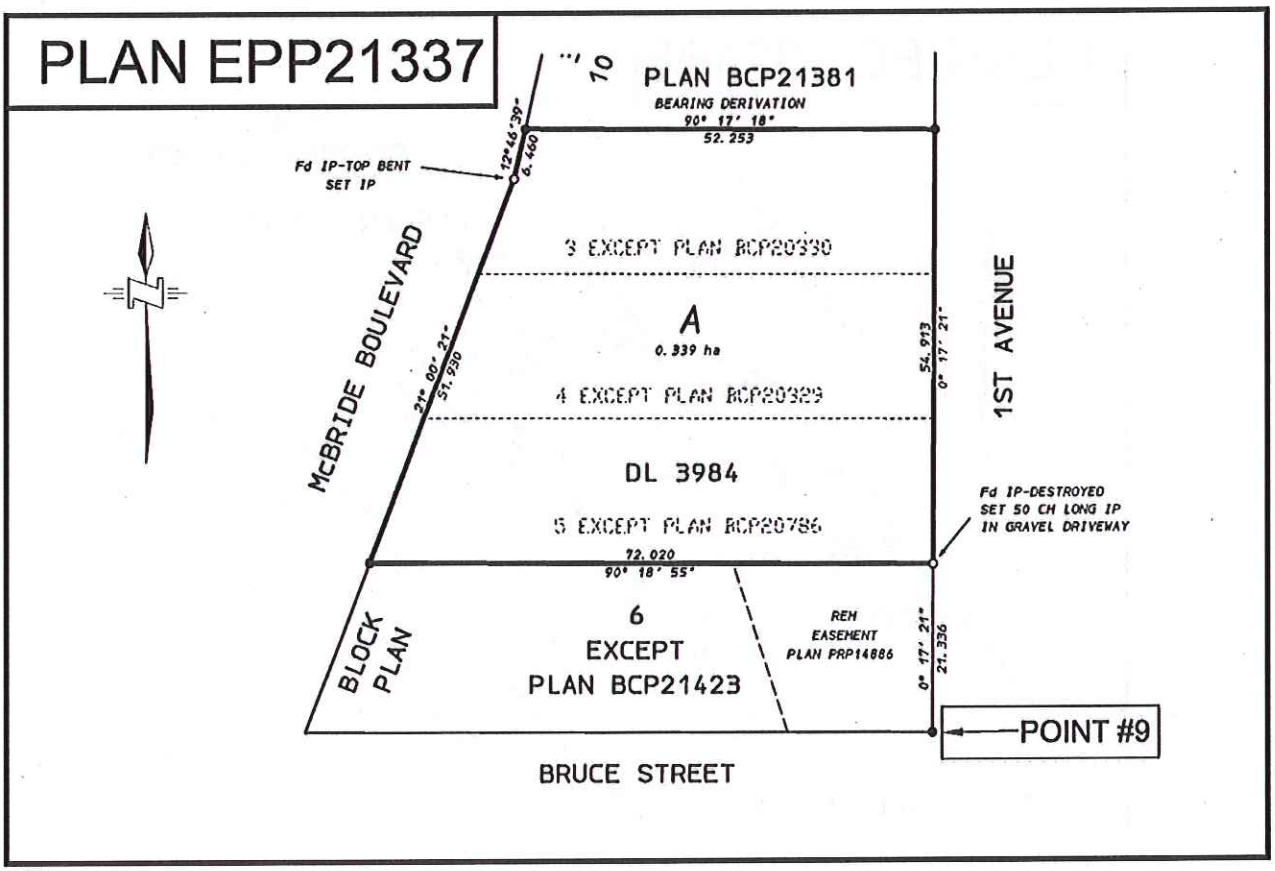
Project:	Regional District of Kitimat Stikine Lakelse Lake Cad Ties	**Project #:**	2321-44945-00	**Date:**	2016-11-14
Location:	Lakelse Lake, British Columbia.				
Point ID	8	**Horizontal Accuracy:**	0.04 metres	**Surveyor:**	Todd Basky, BCLS
Description:	Standard Iron Post found at the SW corner of intersection of First Ave and Old Lakelse Lodge Road. Point #8 is at the NE corner of Lot 1, Plan 10553 being the southerly pin on the corner cutoff.				
Latitude:	54° 22' 21.20962" N	**Longitude:**	128° 32' 41.18628" W	**Ellipsoid Ht:**	68.977
UTM Northing:	6025069.452	**UTM Easting:**	529572.684	**Point Elev:**	77.856
Local Northing:	N/A	**Local Easting:**	N/A	**Convergence:**	0° 22' 12"
Northing Shift:	N/A	**Easting Shift:**	N/A	**Combined Scale Factor :**	0.9995999
Ellipsoid:	WGS84	**Geoid Model:**	HT2.0		
Projection:	UTM9 North	**HzDatum:**	NAD 83 CSRS		
V. Datum:	CGVD28	**Survey Method:**	Static GNSS		
To convert from UTM to Local Ground, divide UTM Northing and UTM Easting by Project Scale Factor and then add Northing and Easting Shifts.					



Plan

Project:	Regional District of Kitimat Stikine Lakelse Lake Cad Ties	**Project #:**	2321-44945-00	**Date:**	2016-11-14
Location:	Lakelse Lake, British Columbia.				
Point ID	9	**Horizontal Accuracy:**	0.04 metres	**Surveyor:**	Todd Basky, BCLS
Description:	Standard Iron Post found at the NW corner of intersection of First Avenue and Bruce Street. Point #9 is at the SE corner of Lot 6, Block 38, Plan 1071 (as shown on Plan EPP21337).				
Latitude:	54° 22' 49.66320" N	**Longitude:**	128° 32' 41.81635" W	**Ellipsoid Ht:**	68.012
UTM Northing:	6025948.802	**UTM Easting:**	529555.637	**Point Elev:**	76.888
Local Northing:	N/A	**Local Easting:**	N/A	**Convergence:**	0° 22' 12"
Northing Shift:	N/A	**Easting Shift:**	N/A	**Combined Scale Factor :**	0.9996001
Ellipsoid:	WGS84		**Geoid Model:**	HT2.0	
Projection:	UTM9 North		**HzDatum:**	NAD 83 (CSRS) 4.0.0.BC.1	
V. Datum:	CGVD28		**Survey Method:**	Static GNSS	
To convert from UTM to Local Ground, divide UTM Northing and UTM Easting by Project Scale Factor and then add Northing and Easting Shifts.					



Plan

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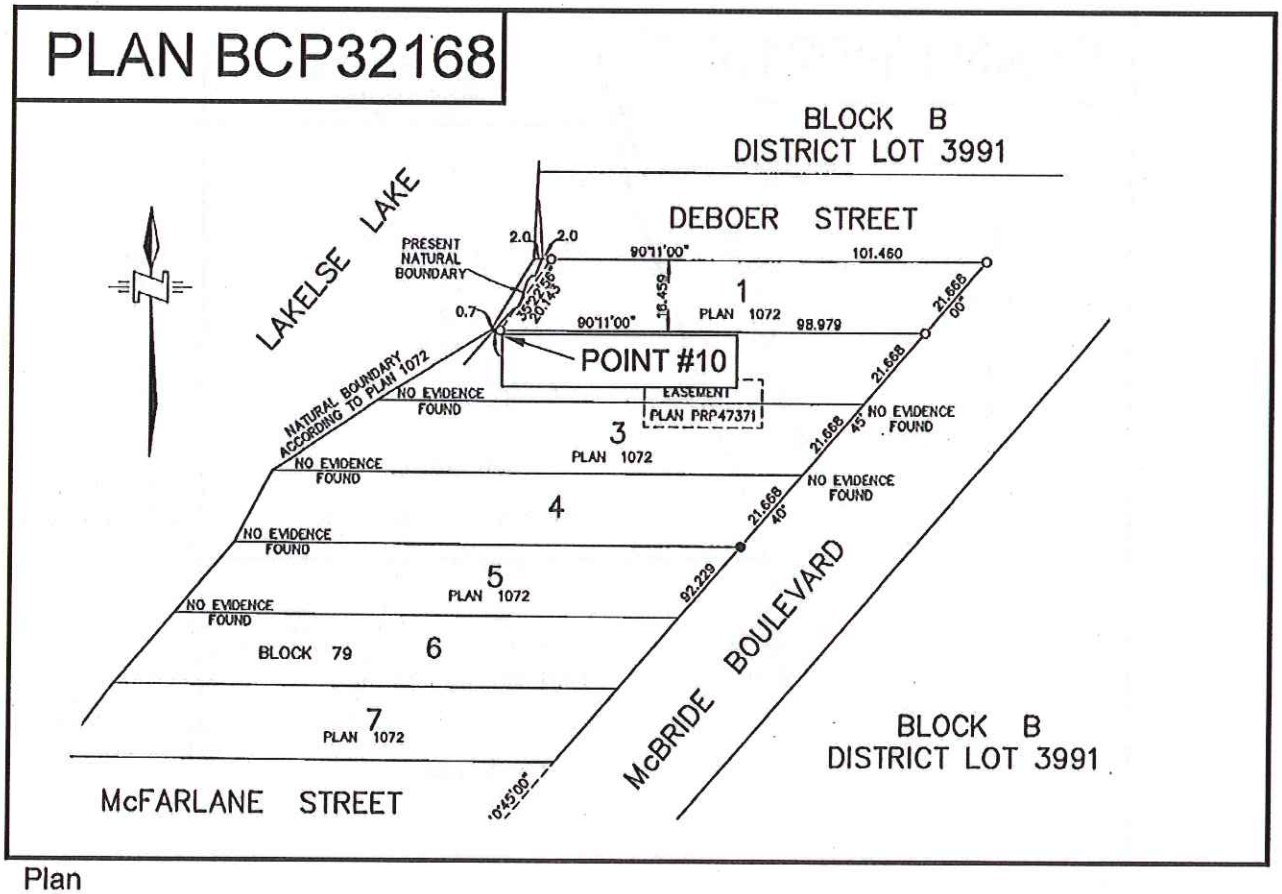
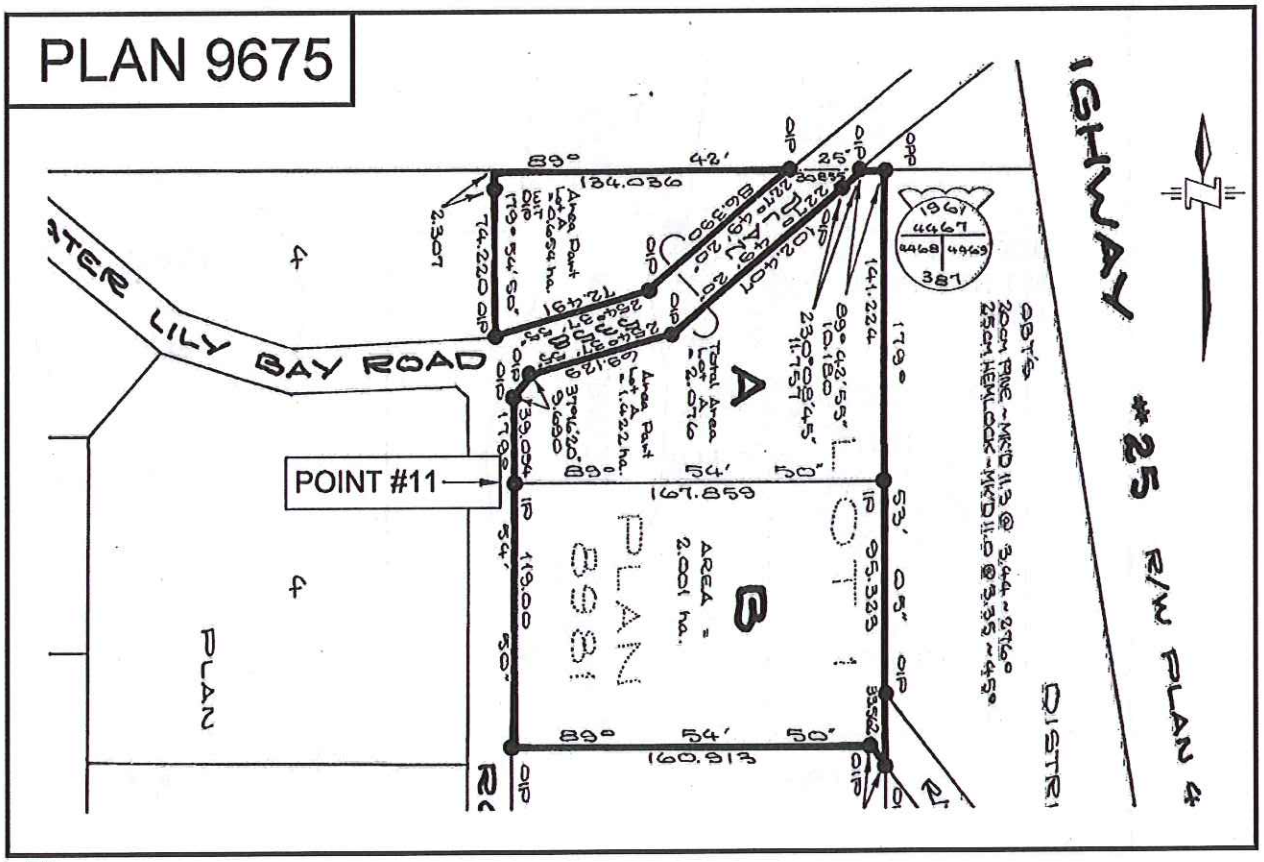
Project:	Regional District of Kitimat Stikine Lakelse Lake Cad Ties	**Project #:**	2321-44945-00	**Date:**	2016-11-14
Location:	Lakelse Lake, British Columbia.				
Point ID	10	**Horizontal Accuracy:**	0.04 metres	**Surveyor:**	Todd Basky, BCLS
Description:	Standard Iron Post found at the SW corner of Lot 1, Block 79, Plan 1072 (as set on Plan BCP32168). 2105 McBride Avenue				
Latitude:	54° 23' 10.50672" N	**Longitude:**	128° 32' 30.90425" W	**Ellipsoid Ht:**	63.911
UTM Northing:	6026594.296	**UTM Easting:**	529748.322	**Point Elev:**	72.779
Local Northing:	N/A	**Local Easting:**	N/A	**Convergence:**	0° 22' 21"
Northing Shift:	N/A	**Easting Shift:**	N/A	**Combined Scale Factor :**	0.9996009
Ellipsoid:	WGS84	**Geoid Model:**	HT2.0		
Projection:	UTM9 North	**HzDatum:**	NAD 83 (CSRS) 4.0.0.BC.1		
V. Datum:	CGVD28	**Survey Method:**	Static GNSS		

To convert from UTM to Local Ground, divide UTM Northing and UTM Easting by Project Scale Factor and then add Northing and Easting Shifts.



Plan

Project:	Regional District of Kitimat Stikine Lakelse Lake Cad Ties	**Project #:**	2321-44945-00	**Date:**	2016-11-14
Location:	Lakelse Lake, British Columbia.				
Point ID	11	**Horizontal Accuracy:**	0.04 metres	**Surveyor:**	Todd Basky, BCLS
Description:	Standard Iron Post found at the NW corner of Lot B, Plan 9675, 1626 Dakin Road.				
Latitude:	54° 24' 11.31134" N	**Longitude:**	128° 31' 14.88625" W	**Ellipsoid Ht:**	88.494
UTM Northing:	6028482.726	**UTM Easting:**	531106.834	**Point Elev:**	97.307
Local Northing:	N/A	**Local Easting:**	N/A	**Convergence:**	0° 23' 23"
Northing Shift:	N/A	**Easting Shift:**	N/A	**Combined Scale Factor :**	0.9995980
Ellipsoid:	WGS84		**Geoid Model:**	HT2.0	
Projection:	UTM9 North		**HzDatum:**	NAD 83 (CSRS) 4.0.0.BC.1	
V. Datum:	CGVD28		**Survey Method:**	Static GNSS	
To convert from UTM to Local Ground, divide UTM Northing and UTM Easting by Project Scale Factor and then add Northing and Easting Shifts.					



Plan

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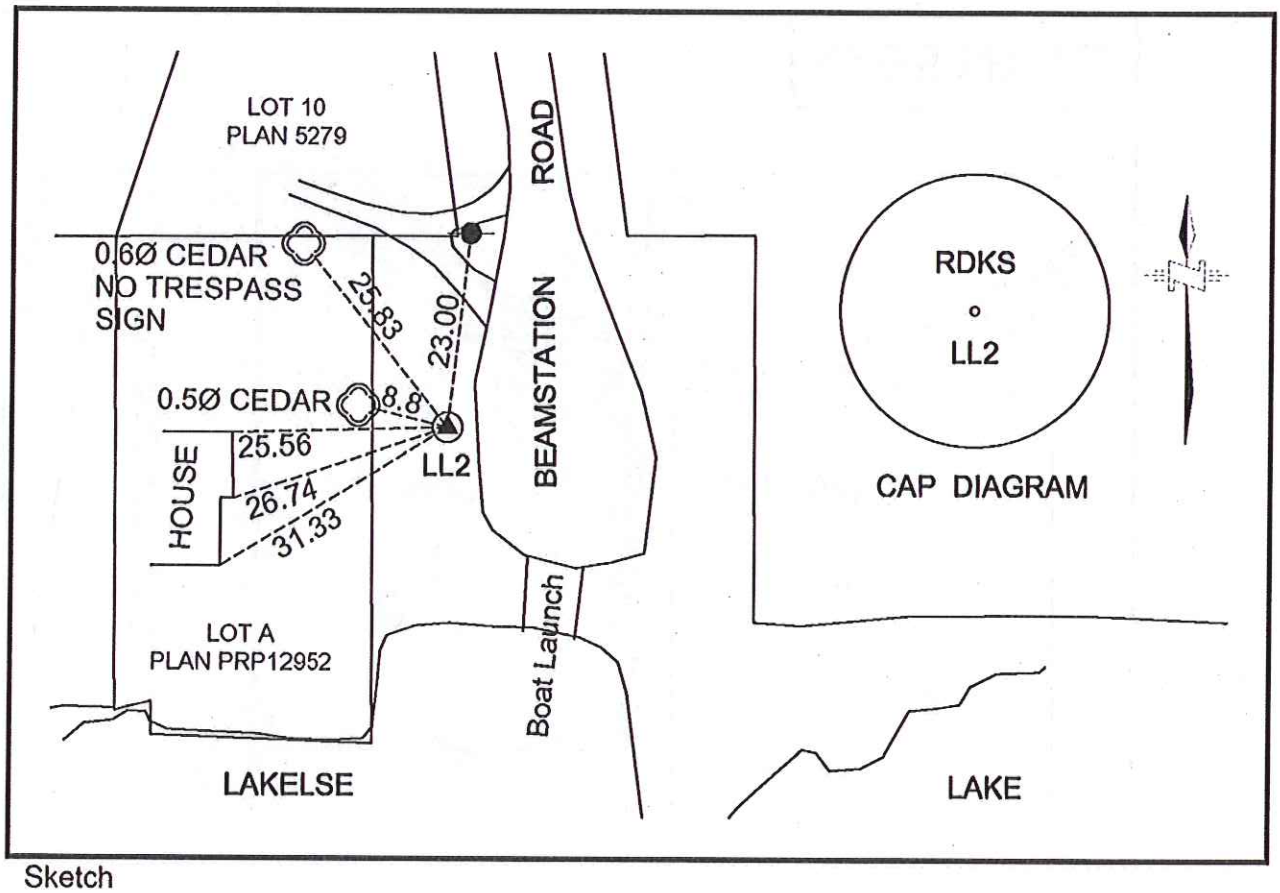
Project:	Regional District of Kitimat Stikine Lakelse Lake Cad Ties	**Project #:**	2321-44945-00	**Date:**	2016-11-17
Location:	Lakelse Lake, British Columbia.				
Point ID	**LL2**	**Horizontal Accuracy:**	0.04 metres	**Surveyor:**	Todd Basky, BCLS
Description:	Brass Cap set in concrete with metal reference post with Control Marker plate. Set at the end of Beamstation Road by the boat launch, to the west side of road 23 metres south of power pole.				

Latitude:	54° 22' 17.83931" N	**Longitude:**	128° 34' 56.71728" W	**Ellipsoid Ht:**	65.972
UTM Northing:	6024950.143	**UTM Easting:**	527127.635	**Point Elev:**	74.868
Local Northing:	N/A	**Local Easting:**	N/A	**Convergence:**	0° 20' 22"
Northing Shift:	N/A	**Easting Shift:**	N/A	**Combined Scale Factor :**	0.9995987

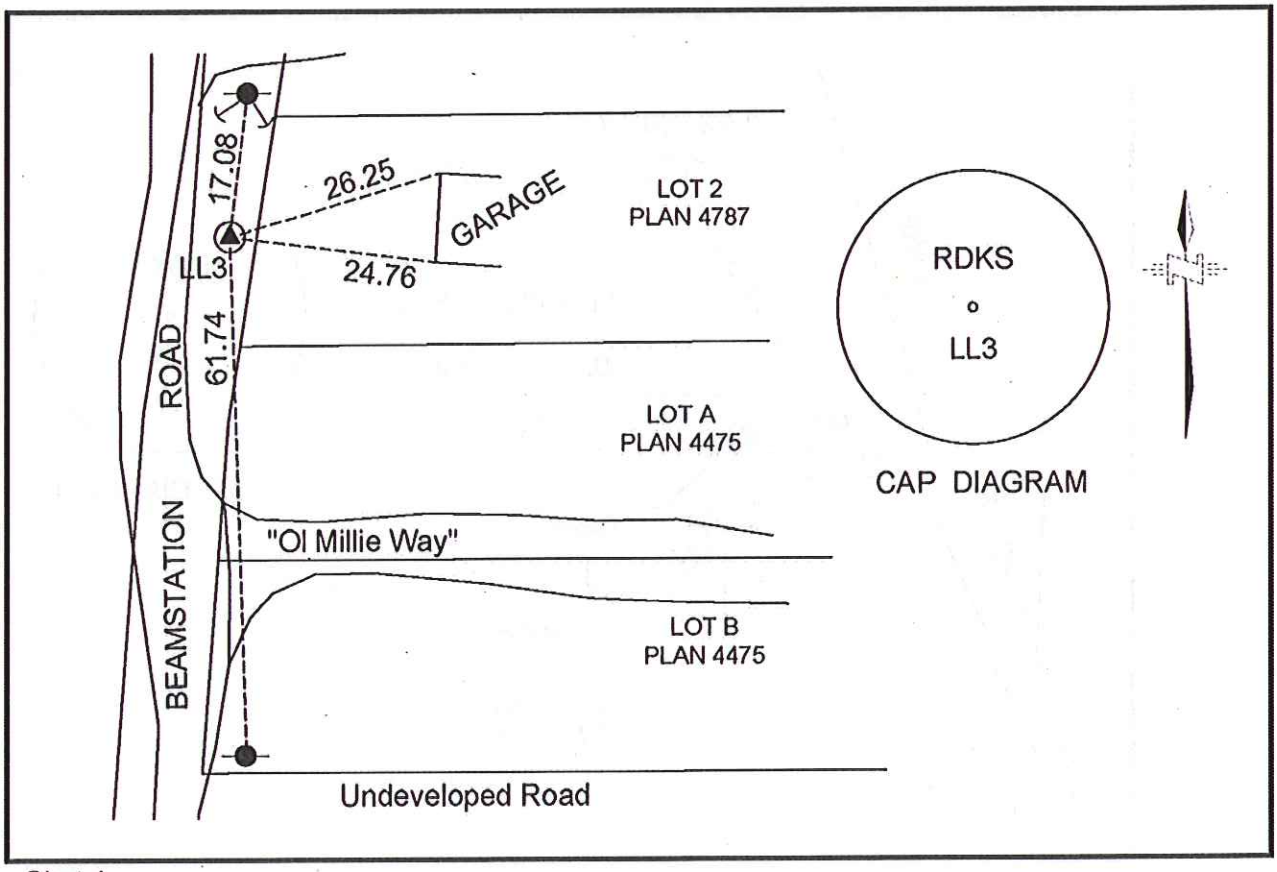
Ellipsoid:	WGS84	**Geoid Model:**	HT2.0
Projection:	UTM9 North	**HzDatum:**	NAD 83 (CSRS) 4.0.0.BC.1
V. Datum:	CGVD28	**Survey Method:**	Static GNSS

To convert from UTM to Local Ground, divide UTM Northing and UTM Easting by Project Scale Factor and then add Northing and Easting Shifts.



Sketch

Project:	Regional District of Kitimat Stikine Lakelse Lake Cad Ties			**Project #:**	2321-44945-00	**Date:**	2016-11-17
Location:	Lakelse Lake, British Columbia.						
Point ID	**LL3**	**Horizontal Accuracy:**		0.04 metres	**Surveyor:**		Todd Basky, BCLS
Description:	Brass Cap set in concrete with metal reference post with Control Marker plate. Set in front of 1838 Westside Road 17.08 metres south of power pole.						
Latitude:	54° 23' 41.44437" N	**Longitude:**		128° 33' 47.35783" W	**Ellipsoid Ht:**		68.800
UTM Northing:	6027541.742	**UTM Easting:**		528363.244	**Point Elev:**		77.681
Local Northing:	N/A	**Local Easting:**		N/A	**Convergence:**		0° 21' 19"
Northing Shift:	N/A	**Easting Shift:**		N/A	**Combined Scale Factor :**		0.9995991
Ellipsoid:	WGS84			**Geoid Model:**	HT2.0		
Projection:	UTM9 North			**HzDatum:**	NAD 83 (CSRS) 4.0.0.BC.1		
V. Datum:	CGVD28			**Survey Method:**	Static GNSS		
To convert from UTM to Local Ground, divide UTM Northing and UTM Easting by Project Scale Factor and then add Northing and Easting Shifts.							



Sketch

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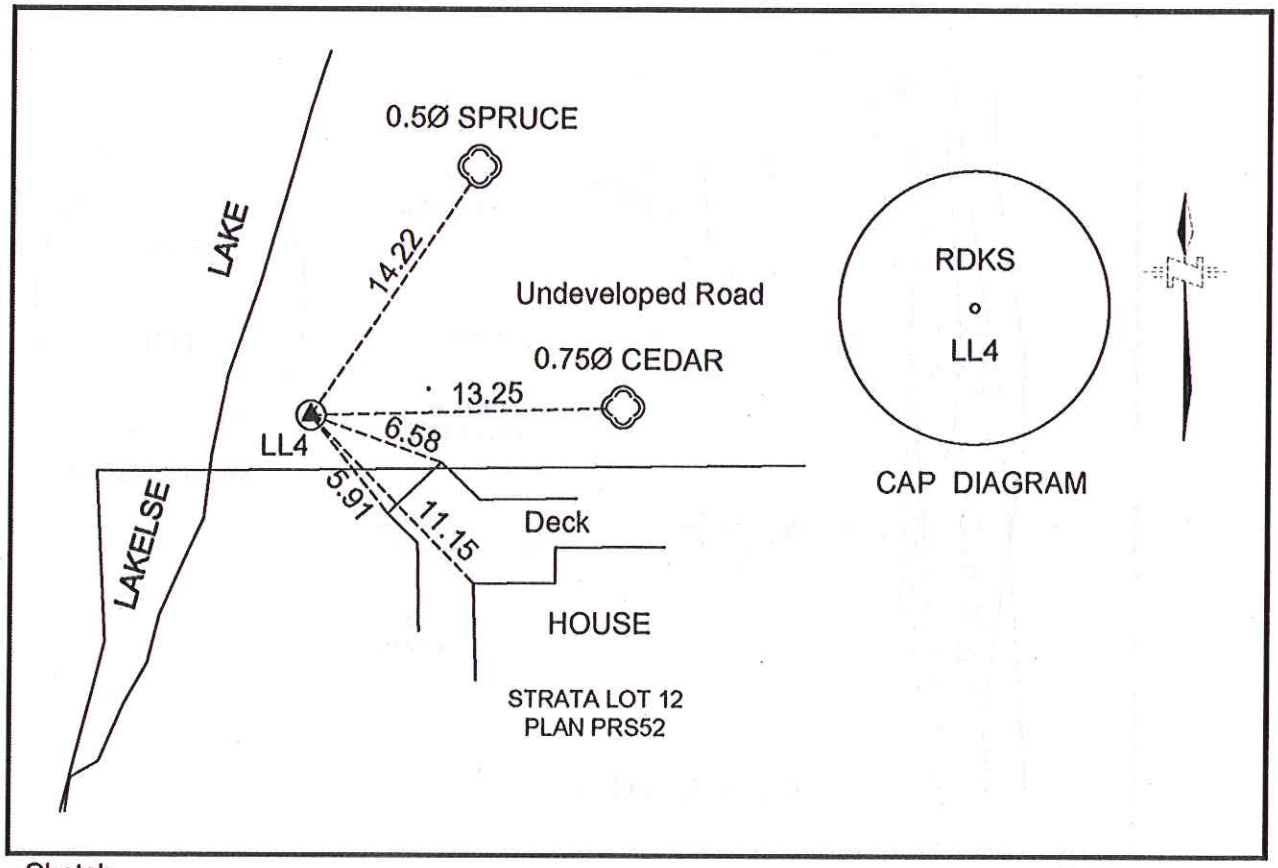
Project:	Regional District of Kitimat Stikine Lakelse Lake Cad Ties	**Project #:**	2321-44945-00	**Date:**	2016-11-17
Location:	Lakelse Lake, British Columbia.				
Point ID	**LL4**	**Horizontal Accuracy:**	0.04 metres	**Surveyor:**	Todd Basky, BCLS
Description:	Brass Cap set in concrete with metal reference post with Control Marker plate. Set in road allowance north of 1605 Lupine Street, 6 metres NW of steps to deck.				
Latitude:	54° 24' 14.55475" N	**Longitude:**	128° 31' 48.85900" W	**Ellipsoid Ht:**	64.593
UTM Northing:	6028578.846	**UTM Easting:**	530493.582	**Point Elev:**	73.428
Local Northing:	N/A	**Local Easting:**	N/A	**Convergence:**	0° 22' 55"
Northing Shift:	N/A	**Easting Shift:**	N/A	**Combined Scale Factor :**	0.9996013
Ellipsoid:	WGS84	**Geoid Model:**	HT2.0		
Projection:	UTM9 North	**HzDatum:**	NAD 83 (CSRS) 4.0.0.BC.1		
V. Datum:	CGVD28	**Survey Method:**	Static GNSS		
To convert from UTM to Local Ground, divide UTM Northing and UTM Easting by Project Scale Factor and then add Northing and Easting Shifts.					



Sketch

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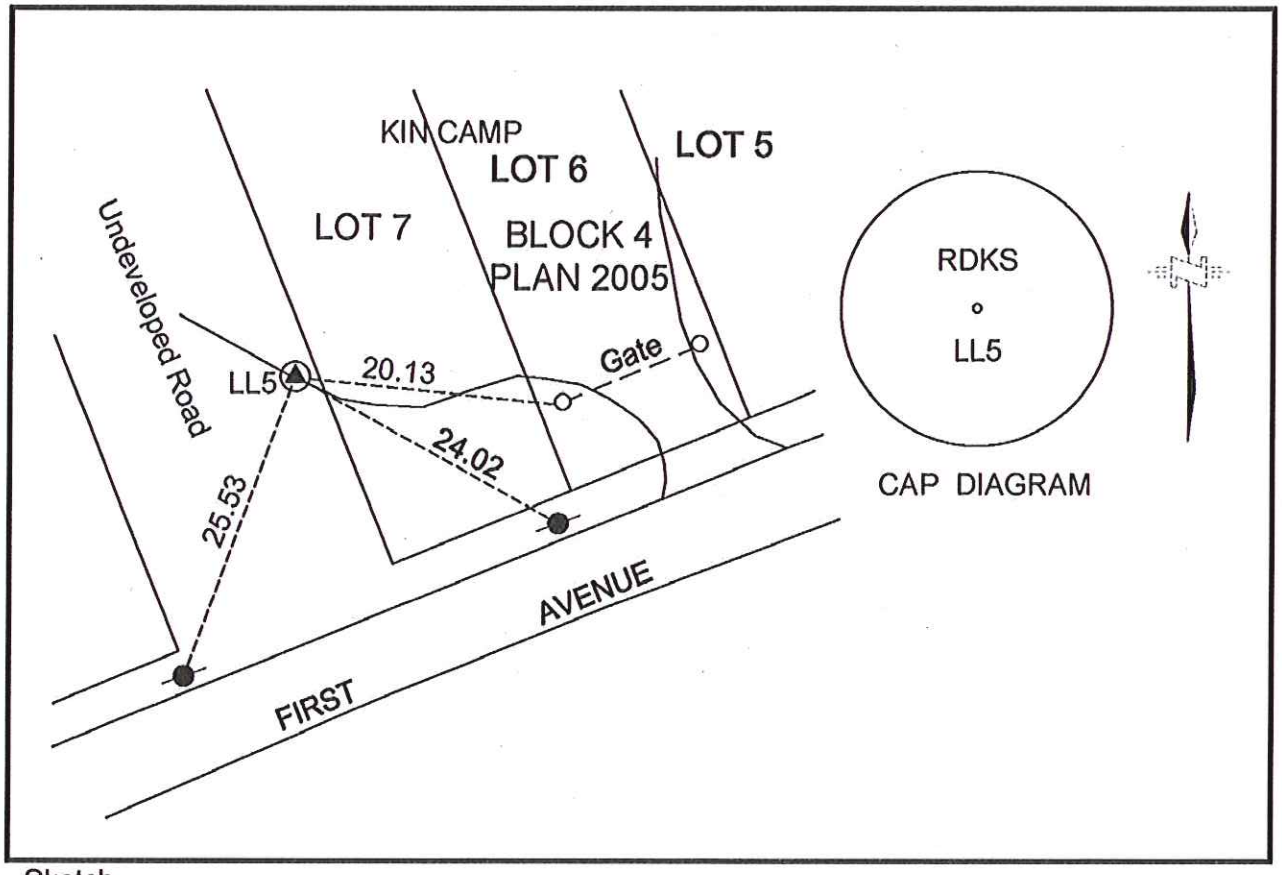
Project:	Regional District of Kitimat Stikine Lakelse Lake Cad Ties	**Project #:**	2321-44945-00	**Date:**	2016-11-17
Location:	Lakelse Lake, British Columbia.				
Point ID	**LL5**	**Horizontal Accuracy:**	0.04 metres	**Surveyor:**	Todd Basky, BCLS
Description:	Brass Cap set in concrete with metal reference post with Control Marker plate. Set in road allowance at edge of Kin Camp parking, 2727 First Avenue, 25 metres from power poles.				
Latitude:	54° 21' 46.37991" N	**Longitude:**	128° 33' 10.21889" W	**Ellipsoid Ht:**	64.194
UTM Northing:	6023989.607	**UTM Easting:**	529055.618	**Point Elev:**	73.084
Local Northing:	N/A	**Local Easting:**	N/A	**Convergence:**	0° 21' 48"
Northing Shift:	N/A	**Easting Shift:**	N/A	**Combined Scale Factor :**	0.9996003
Ellipsoid:	WGS84	**Geoid Model:**	HT2.0		
Projection:	UTM9 North	**HzDatum:**	NAD 83 (CSRS) 4.0.0.BC.1		
V. Datum:	CGVD28	**Survey Method:**	Static GNSS		
To convert from UTM to Local Ground, divide UTM Northing and UTM Easting by Project Scale Factor and then add Northing and Easting Shifts.					



Sketch

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