

DISTRICT OF SQUAMISH

PHASED DEVELOPMENT AGREEMENT BYLAW NO. 2387, 2015

A bylaw to enter into a phased development agreement

WHEREAS under Section 905.1 of the *Local Government Act* a municipality may enter into a phased development agreement with the owner of land to provide the municipality with amenities, works and services and other things; provide assurances related to future changes to land use regulations; and allow development to proceed in phases over an extended period of time;

AND WHEREAS Council has considered the bylaw in conjunction with the Official Community Plan;

AND WHEREAS the Inspector of Municipalities has approved the District entering into the phased development agreement under section 905.2(2) of the *Local Government Act*;

NOW THEREFORE, the Council of the District of Squamish, in open meeting assembled, enacts as follows:

1. This Bylaw may be cited for all purposes as, "District of Squamish Phased Development Agreement Bylaw No. 2387, 2015".
2. Appendix "A" is a copy of the phased development agreement.
3. If any section, subsection, sentence, clause or phrase of this Bylaw is for any reason held to be invalid by a court of competent jurisdiction, the invalid portion shall be severed and the holding of invalidity shall not affect the validity of the remainder of the Bylaw.
4. The District enters into, and the Mayor and Corporate Officer, are authorized to execute that certain form of phased development agreement attached to and forming part of this bylaw as Appendix "A".

READ A FIRST AND SECOND TIME this 30th day of June 2015.

PURSUANT TO THE *LOCAL GOVERNMENT ACT*, NOTICE WAS ADVERTISED ON July 2, 2015 July 9, 2015 and July 16, 2015.

PUBLIC HEARING was held on July 21st 2015 and was recessed to resume on July 28, 2015 August 4, 2015 August 25, 2015 and September 8, 2015.

READ A THIRD TIME this 8th day of September 2015.

ADOPTED THIS ____ day of _____, 2015.

Patricia Heintzman, Mayor

Robin Arthurs,
General Manager of Corporate Services

APPENDIX “A” [PHASED DEVELOPMENT AGREEMENT]

PHASED DEVELOPMENT AGREEMENT

THIS AGREEMENT dated for reference _____, 2015

BETWEEN:

0983016 B.C. Ltd

401 – 37989 Cleveland Avenue, PO Box 1068, Squamish, BC V8B 0A7

(the “Developer”)

AND:

District of Squamish

37955 Second Avenue, Squamish, BC V8B 0A3

(the “District”)

WHEREAS:

A. The District wishes to advance the economic, social and environmental interests of the municipality through the revitalization and redevelopment of the Squamish oceanfront peninsula, a 105 acre site, comprising 60 acres of land and 45 acres of marine area that is:

- immediately adjacent to Squamish’s historic downtown, and surrounded on three sides by water and on all sides by dramatic vistas of the Howe Sound, Garibaldi Range, Shannon Falls and the Stawamus Chief, and
- significant portions of which were formerly the subject of extensive pulp and paper, shipping and other industrial uses;

B. In 2010, following a lengthy and extensive planning process, and in light of:

- the access to the ocean that the land provides for all Squamish residents,
- its importance to downtown revitalization, and
- its available deep water access,

the District’s Council adopted a bylaw (Bylaw 2157, 2010) to comprise a schedule to the District’s Official Community Plan Bylaw and guide the future development of the area, being the Squamish Oceanfront Peninsula Sub Area Plan (the “Area Plan”);

C. The Area Plan envisions substantial development on the peninsula, including approximately 6,500 residents, and total direct employment of more than 2,300 jobs, at build out;

D. In conjunction with and following the above planning process, the District examined the

infrastructure works required for the development, and in the course of doing so determined that the needed works include substantial geotechnical, flood proofing, road, water, sanitary sewer, storm sewer and other works, the projected cost of which is:

- more than roughly \$90 million on the peninsula alone, and
- more than roughly \$36.5 million in related off-site works.

Those works included roughly \$55 million in flood protection, shoreline and related geotechnical works, remediation work and site preparation, that would need to be very advanced before any return from development could be achieved;

E. The District also undertook significant work in developing a development cost charge program that would be applicable to both:

- the development of the Squamish oceanfront (with approximately \$36.5 million of the works associated with the project being designated as development cost charge works), and
- other development across Squamish as a whole,

and which culminated in the preparation of a draft development cost charge bylaw in March 2012;

F. The District also undertook significant work regarding the detailed land use regulations that would apply, through the development of a comprehensive development zone for the Squamish oceanfront lands, and a bylaw amendment to which Squamish Council gave two readings in October 2011;

G. That zoning bylaw amendment contemplated the creation of close to 10 acres of new peninsula land, and provided for 21.2 acres of parks, public space and community facilities, as well as approximately 18.7 acres of residential use, 29.4 acres of employment generating uses and 34.4 acres of marine uses;

H. The District then undertook an extensive search for potential proponents for the development of the portion of the Squamish oceanfront project owned by the District, on a basis that would allow the District of Squamish to select the best available party to deliver the community's vision for the area;

I. In doing so, the District indicated that in the absence of the other two owners on the peninsula being ready or able to proceed, it anticipated proceeding on a basis that would:

- make significant use of community amenity contribution, latecomer and other mechanisms; and
- involve an expanded role for development cost charges;

J. The District's search resulted in the selection of the Developer as the proposed proponent, and the District then commenced negotiations with the Developer in October 2013;

- K. Those negotiations subsequently resulted in a non-binding Memorandum of Understanding dated for reference July 7, 2014 which contemplated the subsequent entering into of various Agreements, including a Phased Development Agreement generally as contemplated herein, and the adoption of various bylaws and policies;
- L. The District has agreed, subject to various conditions, to sell certain Squamish Oceanfront Lands it owns, comprising 60 acres of land and 45 acres of marine area, as set out in Schedule A hereto, to the Newport Beach Developments Limited Partnership (the "**Limited Partnership**"), the general partner of which is the Developer and the limited partner of which is a corporation owned by the District;
- M. The Developer will, by the time this Phased Development Agreement is executed, be the registered owner of the Squamish Oceanfront Lands, and will hold the lands in its capacity as general partner of, and on behalf of, the Limited Partnership;
- N. In keeping with the foregoing, the Developer applied for certain amendments to the land use and servicing bylaws that apply to the Squamish Oceanfront Lands, being those set out in:
- "District of Squamish Zoning Bylaw Amendment Bylaw 2386, 2015", establishing Comprehensive Development Zone CD 69; (the "**Zoning Amendment Bylaw**"); and
 - "District of Squamish Subdivision Bylaw 2373, 2015", enacting subdivision regulations related to subdivision and development (the "**Subdivision Bylaw**")
- O. The Developer can only viably proceed with the development of the Squamish Oceanfront Lands provided for in the Area Plan, the Zoning Amendment Bylaw and the Subdivision Amendment Bylaw, given the scale of the development and the associated infrastructure costs, if the Developer:
- can proceed in phases over an extended period of time; and
 - obtains the assurances provided herein related to subsequent changes to the regulations and requirements governing the development of the Squamish Oceanfront Lands.
- P. The District is prepared to proceed as set out herein, based on the comprehensive mechanisms to guide the future of the Squamish Oceanfront Lands that are set out herein, which reflect the environmental, social and economic elements of sustainability, and are in keeping with the objectives of the Area Plan;
- Q. The District's Approving Officer has reviewed the application for the Precinct Subdivision defined herein, together with this Agreement, and has approved the Precinct Subdivision Plan, and the District has obtained an Order in Council under section 108(5.1) of the *Land Title Act* in respect of the Squamish Oceanfront Lands;
- R. The Inspector of Municipalities has approved the District entering into this Agreement under section 905.2(2) of the *Local Government Act*;

S. The District's Council has also adopted District of Squamish Phased Development Agreement Bylaw No. 2387, 2015 to authorize entering into this Agreement, which bylaw is herein defined as the "**PDA Bylaw**"; and

T. In view of the foregoing the parties are prepared to enter into this Agreement.

NOW THEREFORE THIS AGREEMENT WITNESSES that, pursuant to section 905.1 of the *Local Government Act*, and in consideration of the promises hereby contained, the parties agree as follows:

A. Definitions

1. In this Agreement, the terms defined above have the meanings set out above, and in addition:

"**Approving Officer**" means the Approving Officer having jurisdiction for subdivision approval under the *Land Title Act* and *Strata Property Act*, for the District;

"**Area Plan**" has the meaning described in paragraph B of the Preamble, and for greater certainty includes the amendments to the Area Plan up to the date of this Agreement;

"**Assumption Agreement**" means an assumption agreement under subsections 24(7) through (11) hereof;

"**DCC Front-ender Agreement**" means an agreement so entitled between the District and the Developer, related to the construction of certain works that are referred to in that agreement and in the District's Development Cost Charge Bylaw;

"**Developer**" means 0983016 B.C. Ltd.;

"**Development Parcel**" means a parcel created by subdivision within a Precinct of the Squamish Oceanfront Lands;

"**District**" means District of Squamish;

"**Environmental Contamination Covenant**" means a covenant under section 219 of the *Land Title Act* in connection with environmental contamination, substantially in the form attached as Schedule "J" hereto;

"**Floodproofing Covenant**" means a covenant under section 219 of the *Land Title Act* in connection with flood construction levels on the Squamish Oceanfront Lands, substantially in the form attached as Schedule "I" hereto;

"**Licence of Occupation**" means a licence of occupation granting the Developer occupation of the Oceanfront Park until it completes its obligations under subsection 4(1)(a) of this Agreement, substantially in the form attached at Schedule "H" hereto;

"**Industry Covenant**" means a covenant under section 219 of the *Land Title Act* giving notice in connection with noise and related impacts, substantially in the form attached as Schedules "K1" and "K2" hereto;

"Oceanfront Park" means an oceanfront park as described at section 4 hereof, shown as "Park" on the southern portion of the Precinct Subdivision Plan, and located generally as shown on the Site Plan;

"PDA Bylaw" means the bylaw authorizing the entering into of this Agreement, being "District of Squamish Phased Development Agreement Bylaw No. 2387, 2015";

"Precinct" means one of, and **"Precinct [number]"** means a specified one of, the parcels, of the Squamish Oceanfront Lands, as shown on the Site Plan, that result from the Precinct Subdivision;

"Precinct Subdivision" means the subdivision of the Squamish Oceanfront Lands in accordance with the Precinct Subdivision Plan into 9 parcels, referred to herein as Precincts, and the Oceanfront Park;

"Precinct Subdivision Plan" means the subdivision plan in connection with the Precinct Subdivision, substantially in the form that is attached at Schedule "C" hereto;

"Public Access Statutory Right of Way" means a statutory right of way in favour of the District authorizing public access over private land, which statutory right of way will:

- (a) require the construction and maintenance of a multi-use public access pathway of no less than 3.5 metres in width, with a travelled surface of no less than three metres constructed of material acceptable to the District's General Manager of Development Services and Public Works (to cost no more than the cost of a paved surface for the portion that is not the boardwalk), generally located roughly parallel and generally contiguous to the ocean for the full length of the parcel over which the statutory right of way is registered,
- (b) allow the construction of servicing infrastructure, as required by the landowner;
- (c) allow the construction of underground parking for the exclusive use of those persons authorized by the landowner, as required by the landowner;
- (d) allow the construction of access routes of up to 100 metres in width, and no less than 100 metres apart, roughly perpendicular to the ocean for the exclusive use of those authorized by the landowner, as required by the landowner, across, over or under the public areas pathways, so long as the exclusive use access routes do not prevent public access above ground level along the public access pathway; and
- (e) provide for a detour of the public access pathway for temporary periods of no less than 60 days and no more than six months where required for safety purposes in connection with adjacent construction;

"Qualified Professional" means a person who is duly qualified, licenced, insured and in good standing to carry out the responsibility for which he or she is retained as referenced in this Agreement;

"Release" means a release or discharge sufficient to remove a charge or other interest registered against the title to land at the Land Title Office;

"Site Plan" means the plan attached as Schedule "D" to this Agreement;

"Specified Bylaw Provisions" means:

- (a) any and all provisions of the Zoning Bylaw that are applicable to the Squamish Oceanfront Lands as of the date of this Agreement, that regulate:
 - (i) the use of land, buildings and other structures;
 - (ii) the density of the use of land, buildings and other structures;
 - (iii) the siting, size and dimensions of:
 - A. buildings and other structures; and
 - B. uses that are permitted on the land; and
 - (iv) the location of uses on the land and within buildings and other structures;
 - (v) the shape, dimensions and area, including the establishment of minimum and maximum sizes, of parcels of land that may be created by subdivision; or
 - (vi) the conditions that will entitle an owner to different density regulations,as set out in the copy of the Zoning Bylaw provisions attached at Schedule "E" to this Agreement; and
- (b) the servicing requirements and standards for subdivision and development set out in the Subdivision Bylaw as at the date of this Agreement. (For greater certainty, the administrative and parkland dedication provisions of the Subdivision Bylaw do not over-ride the grandparenting protections set out at Part E of this Agreement or the provisions related to section 941 of the *Local Government Act* set out at Part C(2) of this Agreement);

"Squamish Oceanfront Lands" means those lands described at Schedule "A" hereto provided however that the legal title references will have changed, and the Oceanfront Park will be dedicated, as a result of the Precinct Subdivision;

"Subdivision" means the registration of a subdivision plan, including under the *Land Title Act* or *Strata Property Act*, that creates one or more additional parcels, and also includes a change of parcel boundaries that is the result from an application voluntarily made by the Developer, and for greater certainty does not include a change of parcel boundaries that results from an expropriation (including by way of section 3 agreement under the *Expropriation Act*) or other statutory or regulatory requirement or an order of a Court;

"Subdivision Bylaw" means District of Squamish Subdivision Control Bylaw No. 2373, 2015 as it stands on the date of this Agreement, a copy of which is attached as Schedule "F" to this Agreement;

"Subdivision Servicing Covenant" means that certain covenant registered against title to the Squamish Oceanfront Lands that precludes construction on the Squamish Oceanfront Land, other than for infrastructure servicing, until the infrastructure servicing required in connection with the Precinct Subdivision, as set out in the Subdivision Servicing Covenant, is provided

substantially as contemplated by the covenant attached at Schedule "B" hereto;

"Term" means twenty (20) years from the date of adoption of the PDA Bylaw unless otherwise terminated in accordance with the provisions of this Agreement;

"Tourism Facility" means a commercial facility developed to attract the travelling public and others to a venue where visitors are offered pleasurable and entertaining services and sights, including an art gallery, cultural facility, museum, shrine, water feature, building or structure, marketplace, studio, palace, castle or streetscape, or learning centre, but excluding an amusement park with rides;

"Zoning Amendment Bylaw" has the meaning described in paragraph N of the Preamble;

"Zoning Bylaw" means District of Squamish Zoning Bylaw 2200, 2011 as it stands on the date of this Agreement, following the enactment of the Zoning Amendment Bylaw defined in Recital N of this Agreement, a copy of the pertinent provisions of which is attached as Schedule "E" to this Agreement;

B. Precinct Subdivision, Subdivision Servicing Covenant and Phasing

2. The first subdivision of the Squamish Oceanfront Lands shall be the Precinct Subdivision, substantially as set out on the Precinct Subdivision Plan (Schedule "C"), which subdivision will take place as part of the Developer's acquisition of the Squamish Oceanfront Lands. Concurrently with the Developer's acquisition of the Squamish Oceanfront Lands, and as a closing document, the Subdivision Servicing Covenant shall be registered against title to each of the parcels created by the Precinct Subdivision, which shall set out the infrastructure required to be provided in connection with the Precinct Subdivision and when it will be provided.
3. Thereafter, the phasing of the subdivision and development of the Squamish Oceanfront Lands may proceed:
 - (a) in any order, irrespective of the number attributed to a Precinct; and
 - (b) within one or more Precincts concurrently.

C. Parks and Open Space

(1) Oceanfront Park

4. (a) Subject to subsection 4(b), the Developer agrees that it will, prior to the earlier of the issuance of the first occupancy permit on the Squamish Oceanfront Lands for:
 - a building or structure for Tourism Facility use on a site comprising more than 5 acres, or
 - a residential building:
- (i) design and construct the Oceanfront Park including:

- the oceanfront beach;
- the wind sports beach;
- the meadow/dune grass area;
- crushed rock and paved pathways, subject to section 8(e);
- boardwalk;
- the native shoreline planting;
- intertidal habitat;

which park works will be generally as described on the Phase 1, Phase 2, Phase 3 and Phase 4 master plans prepared by PWL Partnership and dated January 1, 2011, including wetland and other features if and to the extent lawfully required by Canada or the Province or both for habitat compensation or other reasons, provided however that, prior to designing the said works, the Developer will engage in a community consultation over a period of no more than 3 months, which will include

- consultation with the District's Council or its delegate in regard to a general community outreach, the wind sports beach society, the sailing centre and other interests, and
 - at least one public open house in order to secure additional public input;
- (ii) design and erect a lands end monument as referred to in the Area Plan, which shall not be located on or included in any cruise ship terminal pier;
 - (iii) design and construct, and transfer to the sailing centre society referred to in subsection 4(a)(iv), at least two areas for launching of non-motorized boats by hand, including canoes, kayaks and paddleboards; and
 - (iv) design and construct a sailing centre as referred to in the Area Plan, including a drive-to boat launch, temporary parking area, washroom facility, and boat storage facilities, the ownership and operation of which will be turned over to a non-profit society created after consultation with the District;

(b) the Developer's obligation under subsection 4(a) is subject to:

- (i) the District granting the Developer occupation of the Oceanfront Park, further to the License of Occupation attached as Schedule "H" to this Agreement, and allowing ongoing access as provided therein;
- (ii) the Developer using best commercially reasonable efforts to secure the approval of all authorities having jurisdiction over all aspects of the matters set out in subsection 4(a), including by permit where required, and including but not limited to approvals and permits:
 - in connection with intertidal habitat and shoreline planting;
 - for the installation and geotechnical stability of fill; and

- for site remediation;
- (iii) in the event the Developer constructs a cruise ship facility in the general location shown on the Site Plan, the District providing exclusive access to the Developer for the cruise ship facility, as is required by the Developer for commercial loading and servicing; and
- (iv) the District providing all necessary District authorizations for the Developer to utilize dredged material from Blind Channel at no charge to the District, for use as fill for the creation of the Oceanfront Park, if the Developer wishes to utilize such material.

(2) Section 941 and the Oceanfront Park

5. (a) Further to section 905.1(4) and (4.1) of the *Local Government Act*, the District agrees that, when the authority established by section 941 of the *Local Government Act* is exercised as regards a subdivision of all or part of any Precinct within the Squamish Oceanfront Lands, it:
 - (i) shall not require the dedication or transfer to the District of lands for park other than the park that is shown as "Oceanfront Park" on the Site Plan (Schedule "D"), which was provided as part of the Precinct Subdivision; and
 - (ii) shall not require the dedication of any other land for park, or the payment of cash in lieu monies for park land.
- (b) In so providing, the District confirms and agrees that
 - (i) the Oceanfront Park (which will have been dedicated on the foregoing basis as part of the Precinct Subdivision done as a term of the Developer's acquisition of the Squamish Oceanfront Lands); and
 - (ii) the dedicated portion of the Waterfront Public Walkway provided for at subsections 6(a) and 8(e)(ii) hereof,

and shown on the Site Plan amply provide for all park needs related in any way to the subdivision or development of the Squamish Oceanfront Lands, such that no additional park land or cash in lieu will be required in connection with the subdivision or development of the Squamish Oceanfront Land.

(3) Waterfront public walkway

6. (a) In addition to the park land required under subsection 5(a), the Developer shall, further to subsection 8(e)(ii) either:
 - (i) register a Public Access Statutory Right of Way on, or
 - (ii) dedicate,

the land that is marked as "Park or Public Access Statutory Right of Way" on the Site Plan, at the times provided for at subsection 8(e) hereof.

- (b) Prior to the provision of the waterfront public walkway under subsection 6(a) and 8(e), the Developer will provide some degree of public access to the Squamish Oceanfront Lands, by way of the trails that exist as of the date of this Agreement, provided however that the provision of such access is at all times subject to the Developer considering same not to be at odds with the advancement of the development of the lands in light of safety and security considerations and the need for technical and other investigations or other site work.
- (c) Subject to reasonable continuous public access, the District shall, at no cost to the Developer, grant to the Developer and its agents, designates and employees a licence of occupation to enter the park land dedicated under subsections 6(a) and 8(e)(ii) as and when the Developer requires for the purpose of constructing or upgrading infrastructure improvements in relation to work under an issued building permit or servicing agreement with the District in connection with the development.

(4) Community open space, pedestrian and greenway connections

- 7. The Developer shall provide community open space, pedestrian and greenway connections on the portion of the Precinct being developed, as lawfully required at subdivision or development permit (including under sections 6.7.2.2.1, 6.9.2.1.3, 6.10.2.1, 6.11.2.1, 6.12.2.1, and 6.16.2.1 of the Area Plan), which connections shall, for the Squamish Oceanfront Lands collectively (when fully developed) be of the same general nature and extent as those shown on Schedule H of the Area Plan, attached as Schedule "O" hereto, it being acknowledged that such connections need not be in the same location as those shown on that Schedule.

D. Amenities and Other Terms and Conditions

- 8. (a) In addition to the amenities described in section 4 and 6 hereof, the Developer shall:
 - (i) grant, construct and install the amenities described in sections 8(e) and (f) of this Agreement, in accordance with the sequencing and timing for each amenity set out therein, and
 - (ii) comply with the other terms and conditions set out in section 8 hereof.

(1) Soil studies and remediation

- (b) The Developer shall complete and submit to the District copies of all soils studies and the resulting Soil Remediation Plan, for all Precincts and all dedicated streets and utility rights of way, including proof of approval by the Ministry of Environment, as contemplated by Area Plan Policy 5.8.9.2.1, in respect of each Precinct, prior to issuance of a building permit for the first building in that Precinct.
- (c) The Developer shall, concurrently with its acquisition of the Squamish Oceanfront Lands and as a closing document, execute and deliver to the District for registration against title the Environmental Contamination Covenant (Schedule J), to protect the District from any and all liability or damages arising out of or related to the presence of contaminated soils on the

Squamish

Oceanfront Lands, as contemplated by Area Plan Policy 5.8.9.2.1 and 2.

(2) Flood construction level

- (d) The Developer shall, concurrently with its acquisition of the Squamish Oceanfront Lands and as a closing document, execute and deliver to the District, for registration against title, the Floodproofing Covenant attached as Schedule "I" to this Agreement, setting out the flood construction level that is to guide the development of the Squamish Oceanfront Lands going forward. That flood construction level has been set following consideration of a coastal flood hazard assessment prepared by the Developer's Qualified Professional, which has been approved as satisfactory by the District's Qualified Professional. In addition, the parties agree that:
- (i) the dike height of any sea defence system on the Squamish Oceanfront Lands shall generally be as prepared by the Developer's Qualified Professional which has been generally accepted by the District's Qualified Professional, and shall not be less than, 4.7 metres Geodetic Survey of Canada, and shall be built:
- on a Precinct by Precinct basis, as the Squamish Oceanfront Lands are developed, and
 - for a specific Precinct, shall generally be built prior to the occupancy of the first habitable structure in that Precinct.

(3) Waterfront public walkway

- (e) The Developer shall construct a waterfront multi-use public walkway as described in the Area Plan and generally located roughly parallel and generally contiguous to the ocean, generally as shown on the Site Plan, on the Public Access Statutory Right of Way and in the Oceanfront Park, which walkway must comprise a 3.5 metres wide Public Access area, with a 3 metre wide travelled surface constructed of material acceptable to the District's General Manager of Development Services and Public Works (to cost no more than the cost of a paved surface for the portion that is not the boardwalk) (subject to bridging over or under in relation to the exclusive access crossovers provided for by Public Access Statutory Right of Way), constructed:
- (i) in the case of the portion located within the Oceanfront Park, concurrent with the construction and dedication of the Oceanfront Park under subsection 4(a)(i) of this Agreement; and
- (ii) prior to the issuance of an occupancy permit for the first building in each subdivided Lot of the Precinct Subdivision as follows:

- (A) Lot 1: prior to the issuance of an occupancy permit for the first building in Zoning Block F on Lot 1;
- (B) Lot 2: prior to issuance of an occupancy permit for the first building in Zoning Block F on Lot 2;
- (C) Lot 3: prior to issuance of an occupancy permit for the first building in Zoning Block E1 on Lot 3;
- (D) Lot 4: prior to issuance of an occupancy permit for the first building in Zoning Block C or C1 on Lot 4;
- (E) Lot 6: prior to issuance of an occupancy permit for the first building on Lot 6;
- (F) Lot 7: prior to issuance of an occupancy permit for the first building on Lot 7;
- (G) Lot 8: prior to issuance of an occupancy permit for the first building on Lot 8;
- (H) Lot 9: prior to issuance of an occupancy permit for the first building on Lot 9.

The Developer's cost of constructing the public walkway and boardwalk outside of the Oceanfront Park shall be eligible for recovery under a DCC Front-ender Agreement and other forms of agreement, if such agreements are entered into between the parties.

For greater certainty, while it is generally contemplated that the multi-use public access pathway will be located on top of or adjacent to a seawall or other form of sea defense system:

- the multi-use public access pathway may be located on the land side of building improvements for up to two buildings on the Squamish Oceanfront Lands, each having a width along the waterfront of not more than 100 metres, being one for a sailing centre and one in connection with a marine transfer lift to support and be part of a marine industrial use; and
- the location of the multi-use public access pathway may be adjusted by the Developer as reasonably necessary to accommodate:
 - technical floodproofing, geotechnical and remediation considerations;
 - a potential bridge access across the Cattermole Slough; and
 - the matters referenced in the definition of Public Access Statutory Right of Way.

(4) Public art

- (f) The Developer shall install public art in accordance with the District public art policy, having a market value at the time of installation of at least \$50,000, to be installed prior to the occupancy permit for the first commercial building on each of the Lots 6, 7 or 8 as shown on the Precinct Subdivision Plan. These three \$50,000 payments are one-time payments, such that the total contribution to public art for the Squamish Oceanfront Lands will be \$150,000 collectively.

(5) 1999 Squamish Estuary Management Plan

- (g) The Developer consider the 1999 Squamish Estuary Management Plan, attached as Schedule "L" hereto, as a guideline in connection with the development of the interface of the Squamish Oceanfront Lands and the Cattermole Slough, after accounting for the lawful regulatory requirements of other authorities having jurisdiction.

(6) Green Shores

- (h) The Developer shall consider the Green Shores Principle, attached as Schedule "M" hereto, as a guideline in connection with the design of the water interface along the Cattermole Slough, and in respect of other shores of the Squamish Oceanfront Lands, after accounting for the lawful regulatory requirement of other authorities having jurisdiction and recognizing that harder edges are appropriate along the Blind Channel and in connection with floodproofing.

(7) Noise impacts

- (i) The Developer shall, concurrently with its acquisition of the Squamish Oceanfront Lands, and as a closing document, grant the District an Industry Covenant substantially as attached at Schedule "K1" hereto, in respect of Precinct 4, which Industry Covenant provides that:
 - (i) an owner applying for a building permit for any building containing residential dwelling uses in the Marine Centre Flex Zone shall provide a noise impact study prepared by a qualified acoustic engineer to the District as part of the building permit application package, and which will explain how such measures have been incorporated into the building that is the subject of the building permit application; and
 - (ii) will warn residents and occupants of noise and related impacts,
- (j) The Developer shall also, concurrently with the acquisition of the Squamish Oceanfront Lands, and as a closing document, grant the District the Industry Covenant attached as Schedule "K2" hereof, but without subsections 2(a) and (b) (and the definitions that are referred only in those subsections), in respect of the other Precincts created by the Precinct Subdivision, to warn residents and occupants of noise and related impacts.

(8) Rental Pool Covenant

- (k) The Developer shall, concurrently with its acquisition of the Squamish Oceanfront Lands, and as a closing document, grant the District a covenant registrable under section 219 of the *Land Title Act*, substantially as attached at Schedule "N" hereof, in respect of Precinct 1, Precinct 2 and Precinct 9, that allows, but does not require, the owners of residential dwellings to rent the units for seasonal or temporary tourist accommodation, provided the accommodation is governed by a rental pool scheme with rental management as provided for in the covenant.

E. Bylaw Changes and Development Permits

(1) Specified Bylaw Provision Protection

9. Changes to the definition of the Specified Bylaw Provisions can only be made by amending this Agreement.
10. Changes made during the Term to provisions of the Zoning Bylaw (Schedule "E") that fall within the definition of the Specified Bylaw Provisions will not apply to the development of the Squamish Oceanfront Lands, including any parcels created therefrom, unless:
- (a) the changes fall within the limits established by section 905.1(6) of the *Local Government Act*, being:
 - (i) changes to enable the District to comply with an enactment of British Columbia or of Canada;
 - (ii) changes to comply with the order of a Court or arbitrator or another direction in respect of which the District has a legal requirement to obey;
 - (iii) changes that, in the opinion of the District, are necessary to address a hazardous condition of which the District was unaware at the time it entered into this Agreement; and
 - (iv) other changes that may be made as a result of an amendment to section 905.1(6) of the *Local Government Act*;
 - (b) this Agreement has been terminated pursuant to sections 18 or 19 hereof; or
 - (c) the Developer has agreed in writing that the changes apply, in accordance with section 13 hereof.
11. Changes made during the Term to provisions of the Subdivision Bylaw that fall within the definition of the Specified Bylaw Provisions will not apply to the development of the Squamish Oceanfront Lands, including any parcels created therefrom, unless:
- (a) the change is a change to standards for water, sanitary sewer, or storm sewer that are of general application across the District;
 - (b) the changes fall within the limits established by section 905.1(6) of the *Local*

Government Act, being:

- (i) changes to enable the District to comply with an enactment of British Columbia or of Canada;
 - (ii) changes to comply with the order of a Court or arbitrator or another direction in respect of which the District has a legal requirement to obey;
 - (iii) changes that, in the opinion of the District, are necessary to address a hazardous condition of which the District was unaware at the time it entered into this Agreement; and
 - (iv) other changes that may be made as a result of an amendment to section 905.1(6) of the *Local Government Act*;
- (c) this Agreement has been terminated pursuant to sections 18 or 19 hereof; or
- (d) the Developer has agreed in writing that the changes apply, in accordance with section 13 hereof.
12. In the event of the repeal by the District of the Zoning Bylaw or the Subdivision Bylaw in its entirety, including where that bylaw is replaced by one or more bylaws under section 903 or 938 of the *Local Government Act*, the Developer and the District agree that the Specified Bylaw Provisions continue to apply to the Squamish Oceanfront Lands for the balance of the Term of this Agreement, despite such repeal.
13. (1) The agreement of the Developer that changes to provisions of the Zoning Bylaw or the Subdivision Bylaw that fall within the definition of the Specified Bylaw Provisions will apply to the Squamish Oceanfront Lands will only be effective if it is in writing and includes the terms set out in Schedule "G";
- (2) Following execution of the agreement that includes the terms set out at Schedule "G", sections 10 and 11 of this Agreement will continue to apply, and further or subsequent changes made by the District to its Zoning Bylaw and Subdivision Bylaw that fall within the definition of the Specified Bylaw Provisions will not apply to the development of the Squamish Oceanfront Lands unless the Developer agrees in writing that they apply, by way of a further agreement that includes the terms set out at Schedule "G"; and
- (3) In the event of the transfer of title to a portion of the Squamish Oceanfront Lands, the right of consent of the transferee is limited to the lands acquired by the transferee, and the transferee shall not have any right of consent as regards lands that it has not acquired.
14. Changes made to the provisions of the Zoning Bylaw and Subdivision Bylaw that do not fall within the definition of the Specified Bylaw Provisions will apply to the development of the Squamish Oceanfront Lands, including any parcels created therefrom. For certainty, the interpretation of whether a section in the Zoning Bylaw and Subdivision Amendment Bylaw is one of the Specified Bylaw Provisions is not impacted by the headings used in the Zoning Bylaw and Subdivision Bylaw.

(2) Development Permit Protection

15. In the event of the transfer of title of a portion of the Squamish Oceanfront Lands, the right of consent of the transferee under section 905.1(7) of the *Local Government Act* is limited to the lands acquired by the transferee, and the transferee shall not have any right of consent as regards any land that the transferee has not acquired.

F. Amendment, Termination, Enforcement, Arbitration and Title Transfer

F.1. Amendment

16. (1) No amendment to this Agreement shall be effective unless it is made in writing and is duly executed by the Developer and the District.
- (2) The District, by resolution without a new public hearing, and the Developer, may agree to "minor amendments" of this Agreement. For the purposes of this Agreement, a "minor amendment" is any amendment other than one that proposes the renewal or extension of this Agreement or changes to any of the following provisions of this Agreement:
- (a) the lands that are the subject of this Agreement (Schedule "A");
 - (b) the definition of the Specified Bylaw Provisions (section A.1);
 - (c) the Term of this Agreement (section 17);
 - (d) the provision of this Agreement regarding what cannot constitute a minor amendment (section 16); or
 - (e) the provisions of this Agreement regarding transfer (section 24).
- (3) Nothing in subsection (2) prevents the District from deciding to hold a public hearing in advance of a minor amendment to this Agreement if it so chooses.
- (4) A public hearing is required as a precondition to an amendment to this Agreement that is not a minor amendment.

F.2 Term, Termination, Enforcement and Arbitration

(1) Term

17. The Term of this Agreement is 20 years from the date of the adoption of the PDA Bylaw, unless otherwise terminated in accordance with the provisions hereof.

(2) Termination

18. The parties may terminate this Agreement by mutual written agreement at any time before the transfer of a subdivided parcel within the Squamish Oceanfront Lands to a third party.
19. The District may, but is not obliged to, terminate this Agreement before the expiry of the Term if, concurrently with the Developer's acquisition of the Squamish Oceanfront Lands, the Subdivision Servicing Covenant is not registered against the title to each of the parcels created by the Precinct

Subdivision.

20. Section 33 [Severability] hereof shall survive the termination of this Agreement.
21. The Developer and the District agree that neither party may terminate this Agreement before the expiry of the Term, except as provided in sections 18 and 19.

(3) Enforcement

22. The Developer and the District agree that the following enforcement procedures and remedies will be available if the other does not comply with any other section hereof when required:
 - (a) apart from disputes related to such matters that are referred to in section 23 [Interpretation and Arbitration], either party may commence proceedings for a declaration or to otherwise enforce against any breach, and, if successful, will be entitled to recover costs from the other on a solicitor and his own client basis;
 - (b) either party may commence proceedings for injunctive relief in connection with a breach, and, if successful, will be entitled to receive costs from the other on a solicitor and his own client basis; and
 - (c) the Developer or the District, as the case may be, will be responsible to the other for the cost, losses and damages that flow from any breach of the terms of the Agreement by the other; and

provided however that, in the event of a default in performance of any such sections, each will give the other written notice within thirty days after it becomes aware that any default has occurred, and the other will have thirty days from the date of the written notice to correct the default.

(4) Interpretation and arbitration

23. (1) In the event of any dispute related to matters under the following provisions:
 - (a) section 1 [Definitions, and terms of Public Access Statutory Right of Way];
 - (b) subsections 4(a), 7 and 8(e) and (f) [issues related to the construction of the Oceanfront Park; the waterfront public walkways; open space, pedestrian and greenway connections; and public art];
 - (c) subsections 4(b)(i) and 6(c) [interpretation of Licence of Occupation; and access by Developer];
 - (d) subsections 5(b), 6(a) and 8(e) [the choice between registration of a Public Access Statutory Right of Way, or dedication of land, for the waterfront public walkway];
 - (e) section 1 and subsections 8(c), (d), (i), (j) and (k) [interpretation of Environmental Contamination Covenant, Floodproofing Covenant, Industry Covenant or Rental Pool Covenant];

(f) subsection 24 (7) to (10) [Assumption Agreement terms];

and any failure to reach agreement on any matter related thereto, such dispute or disagreement may be submitted by either party to and be finally settled by a single arbitrator pursuant to the *Arbitration Act* (British Columbia), provided that it is understood and agreed that:

(g) the Developer's ability to proceed with Subdivision and construction is not to be delayed while any arbitration related to any of the above matters other than Assumption Agreement terms occurs, but rather the Developer may proceed on the basis of the position it takes on any such matter, provided it first provides security to the District by way of a clean irrevocable letter of credit securing the reasonable difference in cost of satisfying the matter according to the Developer's position and the costs of satisfying the matter according to the District's position; and

(h) this section 23 is not intended to, nor is to be construed as, preventing the parties hereto, or either of them, from seeking relief from the courts, including further to sections 4, 20 or 22(b) hereof, to establish appropriate terms on which the Developer may proceed with Subdivision and construction pending an arbitration (i.e. regarding the scope of the park obligation, Assumption Agreement terms, etc.);

(2) If the parties cannot agree to a single arbitrator, then such arbitrator shall be chosen by reference to a Judge of the Supreme Court of British Columbia;

(3) The parties shall share equally in the costs of:

(a) referring the choice of an arbitrator to a Judge of the Supreme Court of British Columbia, and

(b) any arbitration;

(4) The determination made by a single arbitrator will be final and binding upon the Developer and the District; and

(5) The provisions of this section will be deemed to be a submission to arbitration within the provisions of the *Arbitration Act* (British Columbia), except on the question of arbitrator remuneration.

F.3 Rights and obligations upon title transfer

Rights of Developer

24. (1) Nothing in the Agreement in any way limits the right of the Developer to sell all, or any portion of, the Squamish Oceanfront Lands.

Rights of transferees – generally

(2) In the event of a sale, the "class of persons" by whom the rights set out in this Agreement may be exercised without further consent by the District, as contemplated by section 905.2(5)(b) of the *Local Government Act*, is any company, partnership, individual or other

entity to whom the Developer transfers the Squamish Oceanfront Lands, or individual parcels subdivided therefrom, other than companies, partnerships, individuals or entities that are in receivership or bankruptcy. By signing this Agreement, the District gives its consent to the assignment of such rights to any party within such 'class of persons' consent, with such rights being as more particularly set out in subsections (4) through (10) inclusive of this section.

- (3) A company, partnership, individual or entity that is in receivership or bankruptcy may only exercise the rights set out in this Agreement if it first obtains the consent of the District to the assignment of such rights.

Obligations of transferees – generally

- (4) Further to sections 905.6 and 927(4) of the *Local Government Act*, the terms of this Agreement are binding on all persons or entities that acquire an interest in the land affected by this Agreement, with such obligations being as more particularly set out in subsections (5) through (10) inclusive of this section.

Obligations of the Developer and transferee – transfer of the whole of the Squamish Oceanfront Land

- (5) In the event of a transfer of the whole of the Squamish Oceanfront Lands to a party within the "class of persons" referenced in subsection (2), then:
 - (a) this Agreement is, effective immediately upon such transfer, assigned to the transferee such as to be a Phased Development Agreement between the District of the transferee, and enforceable as between the District and the transferee;
 - (b) the obligations of the Developer to the District under this Agreement (as compared to the obligations of the transferee to the District) will cease if, but only if, the Developer provides the District with an acknowledgement signed by the transferee that the transferee assumes the obligations of the Developer under this Agreement; and
 - (c) notwithstanding subsection (b), the Developer will not be released as regards any breach of this Agreement that occurred while the Developer was the owner of or had a relevant interest in the Squamish Oceanfront Lands, unless the District provides the Developer with a release to that effect.

Rights of transferee – transfer of a subdivided portion of the Squamish Oceanfront Land

- (6) In the event of a transfer of any subdivided portion of the Squamish Oceanfront Land:
 - (a) the transferee shall have all right, title, benefit, interest, privilege and advantage of the Developer further to Part E [Bylaw changes and development permits] of this Agreement in respect of the portion of the Squamish Oceanfront Lands transferred to the transferee, but only in respect of that portion of the Squamish Oceanfront Lands transferred; and

- (b) for greater certainty, the agreement of the transferee is not and will not be required under Part E [Bylaw changes and development permits] of this Agreement on the issue of whether a change made to the Specified Bylaw Provisions is applicable to the development of lands other than the portion of the Squamish Oceanfront Lands transferred to the transferee;
- (c) subject to subsection (8), the transferee:
 - (i) shall not have any rights under any provision of this Agreement other than those in Part E [Bylaw changes and development permits], as against either the Developer or the District; and
 - (ii) notwithstanding subsection (1), the transferee shall have no rights, or remedies against either the Developer or the District, in the event of the termination of this Agreement further to the provisions hereof.

Obligations of the Developer and the transferee – transfer of a subdivided portion of the Squamish Oceanfront Land

- (7) Unless an Assumption Agreement is entered into between the District, the Developer and the transferee, a transfer of a subdivided portion of the Squamish Oceanfront Lands does not in any way affect:
 - (a) the rights and obligations of the District as against the Developer (as compared to the transferee) under Parts A through D inclusive of this Agreement;
 - (b) the rights and obligations of the Developer (as compared to the transferee) as against the District under Parts A through D inclusive of this Agreement; or
 - (c) the District's right to terminate this Agreement (and by doing so terminate the rights of the transferee) under section 19 of this Agreement.
- (8) An Assumption Agreement under subsection (7), entered into between the District, the Developer and the transferee, can provide that some or all of the rights and obligations of the Developer to the District under this Agreement are transferred to the transferee and cease to be rights or obligations of the Developer, as set out in the Assumption Agreement;
- (9) Unless otherwise provided for in an Assumption Agreement under subsections (7) and (8), the obligation of the transferee in respect of a subdivided portion of the Squamish Oceanfront Lands includes an obligation to:
 - (a) cooperate fully and promptly execute all documentation that the Developer may require; and
 - (b) provide all authorizations, access and information that the Developer may require to facilitate or enable the performance and discharge by the Developer of its rights and obligations under this Agreement.

- (10) In the event that a transferee transfers all or any part of the transferee's land to a subsequent transferee, the respective rights and obligations of the transferee and the subsequent transferee in respect of such part of the transferee's land, will, insofar as the matters dealt with in subsections (6), (7), (8) and (9) are concerned, be on the basis as set out in those subsections.
- (11) The District will not act unreasonably in deciding whether to enter into an Assumption Agreement, and more particularly will not refuse to enter into an Assumption Agreement unless its interests are prejudiced in a substantial practical way.

G. Other

Binding Effect and statutory approval

25. This Agreement shall, subject to section 24, enure to the benefit of and be binding upon the parties hereto, and their respective successors and permitted assigns.
26. This Agreement does not restrict any discretion of the District's Council or officials under its or their statutory powers, apart from the restrictions expressly provided for herein and as provided for at section 905.1 of the *Local Government Act*.
27. All obligations of the Developer hereunder are subject to the Developer being able to obtain all statutorily required approvals therefor, including approval from the Approving Officer.

Further Acts

28. The Developer and the District shall do all further acts as may be necessary for carrying out this Agreement, including without limitation execution of all required documentation and alterations required to achieve registration at the Land Title Office.

No Other Agreements

29. This Agreement is the entire agreement between the parties regarding its subject. It is mutually understood, acknowledged and agreed by the parties that the District has made no representations, covenants, warranties, guarantees, promises or agreements (oral or otherwise) with the Developer other than those contained in this Agreement.

Time of the Essence

30. Time is of the essence of this Agreement.

Force Majeure

31. All obligations of the parties shall be suspended so long as the performance of such obligation is prevented, in whole or in part, by reason of labour dispute, fire, act of God, unusual delay by common carriers, earthquake, act of the elements, riot, civil commotion or inability to obtain necessary materials on the open market, and the period in which any party is required to perform any such obligation is extended for the period of such suspension. The impact of the

Developer's financial circumstances upon the Developer's ability to perform this Agreement does not suspend the Developer's obligations under this Agreement. This provision does not extend the Term.

No Waiver

32. No provision of this Agreement is to be considered to have been waived by a party unless the waiver is expressed in writing by the party. The waiver by a party of any breach by another party of any provision is not to be construed as or constitute a waiver of any further or other breach.

Severability

33. If any part of this Agreement other than Part E [Bylaw changes and development permits] is held to be invalid, illegal or unenforceable by a Court having the jurisdiction to do so, that part is to be considered to have been severed from the rest of this Agreement and the rest of this Agreement remains in force unaffected by that holding or by the severance of that part. In the event that Part E is held to be invalid, illegal or unenforceable by a Court having jurisdiction to do so, such a holding shall not limit such nonconforming use protection as has accrued to the Developer or transferee under section 911 of the *Local Government Act* in connection with the subdivision and development of the Squamish Oceanfront Lands in keeping with the Site Plan, including by way of the doctrine of "commitment to use", nor the application of the law related to unjust enrichment.

Interpretation

34. In this Agreement:
- (a) the headings and captions are for convenience only and do not form a part of this Agreement and will not be used to interpret, define or limit the scope, extent or intent of this Agreement or any of its provisions;
 - (b) the word "including" when following any general term or statement is not to be construed as limiting the general term or statement to the specific items or matters set forth or to similar terms or matters but rather as permitting it to refer to other items or matters that could reasonably fall within its scope;
 - (c) a reference to currency means Canadian currency;
 - (d) a reference to a statute includes every regulation made pursuant thereto, all amendments to the statute or to any such regulation in force from time to time and any statute or regulation that supplements or supersedes such statute or any such regulation;
 - (e) a reference to time or date is to the local time or date in Squamish, British Columbia;
 - (f) a word importing the masculine gender includes the feminine or neuter, and a word importing the singular includes the plural and vice versa;
 - (g) a reference to approval, authorization, consent, designation, waiver or notice means written approval, authorization, consent, designation, waiver or notice; and

- (h) a reference to a section means a section of this Agreement, unless a specific reference is provided to a statute.

35. This Agreement is to be construed in accordance with and governed by the laws applicable in the Province of British Columbia.

Notice

36. A notice, demand, statement, request or other evidence required or permitted to be given hereunder must be written and will be sufficiently given if delivered in person or transmitted by facsimile addressed as follows:

- (a) if to the Developer:

0983016 BC Ltd.

401 – 37989 Cleveland Avenue
PO Box 1068
Squamish, BC V8B 0A7

Attention: Michael Hutchison

with a copy to:

Clark Wilson LLP 900-885 West
Georgia Street
Vancouver, BC V6C 3H1 Fax: 604.687.6314

Attention: Peter Kenward

- (b) if to the District:

District of Squamish

37955 Second Avenue
Squamish, BC V8B 0A3

Attention: Corien Becker

with a copy to:

Lidstone and Company
128 West Pender Street, Suite 1300
Vancouver, BC V6B 1R8 Attention: Don Lidstone, Q.C.

and a party at any time may give notice to the others of a change of address after which the address so specified will be considered to be the address of the party who gave the notice. Any notice, demand, statement, request or other evidence delivered in person will be considered to have been given at the time of personal delivery and any notice, demand, statement, request or

other evidence transmitted by facsimile will be considered to have been given to the party to whom it is addressed on the next business day following the date of such transmission.

Execution

37. This agreement may be executed in counterparts, and such counterparts together shall constitute a single instrument.

Costs

38. Every obligation of the Developer under Parts A through D of this Agreement must be satisfied by the Developer at its sole cost, except as provided herein.

Schedules

39. The following schedules are annexed to and form part of this Agreement:

Schedule "A" – Squamish Oceanfront Lands

Schedule "B" – Subdivision Servicing Covenant

Schedule "C" – Precinct Subdivision Plan

Schedule "D" – Site Plan

Schedule "E" – Zoning Bylaw

Schedule "F" – Subdivision Amendment Bylaw

Schedule "G" – Form for Agreement to Bylaw Changes

Schedule "H" – Licence of Occupation

Schedule "I" – Floodproofing Covenant

Schedule "J" – Environmental Contamination Covenant

Schedule "K1" – Industry Covenant: Precinct 4

Schedule "K2" – Industry Covenant: Other Precinct

Parcels Schedule "L" – Estuary Management Plan

Schedule "M" – Green Shores Guidelines

Schedule "N" – Rental Pool Covenant

Schedule "O" – Area Plan Schedule H

IN WITNESS WHEREOF the Parties have executed this Agreement as of the date first written above.

0983016 BC LTD.

DISTRICT OF SQUAMISH

Per: _____
Authorized Signatory

Per: _____
Patricia Heintzman,
Mayor of Squamish

Per: _____
Authorized Signatory

Per: _____
Robin Arthurs,
General Manager of Corporate Services

APPROVED BY THE INSPECTOR OF MUNICIPALITIES THE _____ DAY OF _____, 2015.

SCHEDULE A [SQUAMISH OCEANFRONT LANDS]

The Squamish Oceanfront Lands are the lands legally described as follows.

PID: 007-774-010

LOT G DISTRICT LOTS 486, 4271, 4618, 5717, 6042 AND 7134 PLAN 14953

PID: 007-779-674

LOT D BLOCK 1 DISTRICT LOTS 486 AND 4271 PLAN 14521

PID: 026-267-152

LOT 3 DISTRICT LOT 4271 GROUP 1 NEW WESTMINSTER DISTRICT PLAN BCP16861

PID: 026-267-161

LOT 2 DISTRICT LOT 4271 GROUP 1 NEW WESTMINSTER DISTRICT PLAN BCP16861

PID: 026-267-128

LOT 1 DISTRICT LOT 486 GROUP 1 NEW WESTMINSTER DISTRICT PLAN BCP16860

PID: 008-606-153

BLOCK B DISTRICT LOTS 4618, 5717, 6042 AND 7134 PLAN 13452

PID: 026-267-136

LOT 2 DISTRICT LOT 486 PLAN BCP16860

PID: 026-267-144

LOT 1 DISTRICT LOT 4271 PLAN BCP16861

PID: 015-788-741

DISTRICT LOT 5717 EXCEPT PORTIONS IN PLANS 13452 AND 14953

PID: 015-792-587

DISTRICT LOT 6042 EXCEPT PART IN PLAN 13452

PID: 026-267-403

LOT 1 DISTRICT LOT 486 GROUP 1 NEW WESTMINSTER DISTRICT PLAN BCP16863

PID: 026-267-420

LOT 2 DISTRICT LOT 486 GROUP 1 NEW WESTMINSTER DISTRICT PLAN BCP16863

PID: 026-267-438

LOT 3 DISTRICT LOT 486 GROUP 1 NEW WESTMINSTER DISTRICT PLAN BCP16863

SCHEDULE B

SUBDIVISION SERVICING COVENANT

This COVENANT dated for reference the ____ day of _____, 20____.

BETWEEN:

0983016 B.C. Ltd

401 – 37989 Cleveland Avenue
PO Box 1068
Squamish, BC V8B 0A7

(the “**Developer**”)

AND

District of Squamish

37955 Second Avenue
Squamish, BC
V8B 0A3

(the “**District**”)

WHEREAS:

- A. In 2010, following a lengthy and extensive planning process, the District’s Council adopted a bylaw (Bylaw 2157, 2010) that comprised a schedule to the District’s Official Community Plan Bylaw and guide the future development of the Developer’s Land (as defined herein) and other lands in the immediate area, being the Squamish Oceanfront Peninsula Sub Area Plan (the “**Area Plan**”);
- B. The District subsequently agreed to sell the Developer’s Land, as hereinafter defined, to the Newport Beach Developments Limited Partnership, the general partner of which is the Developer and the limited partner of which is the District;
- C. The Developer is therefore now the registered owner of the Developer’s Land, and holds the land in its capacity as general partner of, and on behalf of, the Newport Beach Developments Limited Partnership;
- D. As anticipated by, and subsequent to the adoption of, the Area Plan, the Developer and the District engaged a further more detailed review of land use, infrastructure and other regulatory considerations, and then, following further substantial public input and public hearing processes the District:

- the District adopted District of Squamish Phased Development Agreement Bylaw No. 2387, 2015 (the “**Phased Development Agreement Authorization Bylaw**”) on _____, 2015 to authorize the entering into of the Phased Development Agreement defined herein;
 - the District amended its zoning bylaw on _____, 2015, by way of the enactment of District of Squamish Zoning Amendment Bylaw No. 2386, 2015 (the “**Zoning Amendment Bylaw**”) to allow for the project that was the subject of a Phased Development Agreement; and
 - the District on _____, 2015, enacted District of Squamish Subdivision Amendment Bylaw No. 2373, 2015 (the “**Subdivision Amendment Bylaw**”) to allow for the project;
- E. On _____, the District and the Developer entered into a Phased Development Agreement, which established certain terms in connection with the project that is the subject of the Phased Development Agreement;
- F. On _____, the District’s Approving Officer approved the Precinct Subdivision (defined herein) contemplated by the Phased Development Agreement;
- G. Section 219 of the *Land Title Act* provides that the Developer may grant a covenant to the District of a negative or positive nature respecting the use of the Developer’s Land;
- H. In light of the approval of the bylaws referred to above, the approval of the Precinct Subdivision, and the entering into of the Phased Development Agreement, the Developer has agreed to grant this Covenant to restrict the use of the Developer’s Land on the terms and conditions set forth herein;

NOW THEREFORE THIS AGREEMENT WITNESSES that pursuant to Section 219 of the *Land Title Act*, and in consideration of the promises hereby contained, the parties agree as follows:

1. **Definitions**

In this Agreement:

“**Developer’s Land**” means [“Squamish Oceanfront Lands”, as defined in the Phased Development Agreement, as it stands following subdivision by the Precinct Subdivision], as set out at Appendix “1” to this Agreement;

“**Phased Development Agreement**” means that certain Phased Development Agreement, the body of which, together with Schedules A and C of the Phased Development Agreement, are attached as Appendix “2” to this Agreement;

“**Precinct**” means a Precinct identified in the Phased Development Agreement;

“**Precinct Subdivision**” means the Precinct Subdivision contemplated by the Phased

Development Agreement and approved by the Approving Officer, per the subdivision plan attached at Schedule C to the Phased Development Agreement;

"Release" means a release or discharge sufficient to remove a charge or other interest registered against the title to land at the Land Title Office; and

"Required Infrastructure" means road, water, sanitary sewer, and drainage works as provided for at Appendix "3" to this Agreement.

2. Section 219 Covenant

- (a) Pursuant to Section 219 of the *Land Title Act*, the Developer covenants and agrees with the District that the Developer shall not build on any portion of the Developer's Land except in compliance herewith;
- (b) The District is not obliged to issue any building permit in respect of the Developer's Land (or any parcel created therefrom) until the Required Infrastructure has been provided by the Developer, or the District holds security from and a development servicing agreement under section 940 of the *Local Government Act* with the Developer adequate to fund the provision of the Required Infrastructure; and
- (c) Notwithstanding subsection (b), the Developer, subject to the Phased Development Agreement, shall be entitled to build on the Developer's Land for the purposes of constructing the Required Infrastructure or any other infrastructure related to a subdivision that has been approved by the Approving Officer.

3. Release of Subdivision Servicing Covenant

The District will forthwith provide the Developer with an executed Release of this Section 219 Covenant as regards the Developer's Land, when the Required Infrastructure:

- (a) has been provided by the Developer, along with a certificate of completion and a certificate of the cost of each work, prepared by the Developer's professional engineer; or
- (b) the District holds security from the Developer adequate to fund the provision of the Required Infrastructure.

4. Release

The District will provide the Developer with an executed Release of this Section 219 Covenant:

- (a) as against any portion of the Developer's Land that the District or any other government authority seeks to acquire by way of expropriation; and
- (b) in its entirety, if the Zoning Amendment Bylaw, the Subdivision Amendment Bylaw, the Phased Development Agreement Authorization Bylaw, or the Phased Development Agreement is quashed or set aside or declared unlawful by a Court

of competent jurisdiction.

5. Impact on Market Value

If the District or any other government authority seek to acquire any or all of the land that is subject to this Section 219 Covenant, other than by way of a required dedication or transfer under section 941 of the *Local Government Act*, the price of acquisition and market value of the land will be determined as if this Section 219 Covenant was not registered against it.

6. Run with Lands

This Covenant is granted voluntarily by the Developer to the District pursuant to Section 219 of the *Land Title Act* of the Province of British Columbia and shall run with the lands.

7. Binding Effect

This Covenant shall enure to the benefit of and be binding upon the parties hereto, their respective successors and permitted assigns, provided however that the enforcement of this Covenant shall be entirely within the discretion of the District and the execution and registration of this Covenant against title to the Developer's Land shall not be interpreted as creating any duty on the part of the District to the Developer or to any other person to enforce any provision of the breach of any provision of this Covenant.

8. Further Acts

The Developer and the District shall do all further acts as may be necessary for carrying out this Covenant, including without limitation execution of all required documents and alterations required to achieve registration at the Land Title Office. The Developer agrees to do everything reasonably necessary, at the Developer's expense, to ensure that this Agreement is registered against title to the Developer's Land with priority over all financial charges, liens and encumbrances registered, or the registration of which is pending, at the time of application for registration of this Agreement.

9. Severability

If any part of this Agreement is held to be invalid, illegal or unenforceable by a court having the jurisdiction to do so, that part is to be considered to have been severed from the rest of this Agreement and the rest of this Agreement remains in force unaffected by that holding or by the severance of that part.

10. Indemnity, Release and Liability

The Developer releases, and must indemnify and save harmless, the District, its elected and appointed officials and employees, from and against all liability, actions, causes of action, claims, damages, expenses, costs, debts, demands or losses suffered or incurred by the Developer, or anyone else, arising from the granting or existence of this Agreement, or any default of the Developer under or in respect of this Agreement. The parties agree that this Agreement creates obligations arising out of the nature of this document as a section 219 covenant only. The parties agree that no tort obligations or liabilities of any kind exist between the parties in connection with the performance of, or any default under or in

respect of, this Agreement. The intent of this section is to exclude tort liability of any kind and to limit the parties to their rights and remedies under the law pertaining to section 219 covenants.

11. Interpretation

In this Covenant:

- (a) the headings and captions are for convenience only and do not form a part of this Covenant and will not be used to interpret, define or limit the scope, extent or intent of this Covenant or any of its provisions;
- (b) the word "including" when following any general term or statement is not to be construed as limiting the general term or statement to the specific item or matters set forth or to similar terms or matters but rather as permitting it to refer to other items or matters that could reasonably fall within its scope;
- (c) a reference to a statute includes every regulation made pursuant thereto, all amendments to the statute or to any such regulation in force from time to time and any statute or regulation that supplements or supersedes such statute or any such regulation;
- (d) a word importing the masculine gender includes the feminine or neuter, and a word importing the singular includes the plural and vice versa; and
- (e) every reference to each party hereto shall be deemed to include the officers, employees, elected officials, agents, servants, successors and assigns of that party.

12. Appendices

The following schedules are annexed to and form part of this Covenant:

Appendix "1" – Land;

Appendix "2" – Phased Development Agreement, with Schedules A and C; and

Appendix "3" – Required Infrastructure.

IN WITNESS WHEREOF the Developer and the District have duly executed this Covenant as of the day, month and year first above written by executing the Form C attached hereto.

APPENDIX "1" – DEVELOPER'S LAND

[List titles comprising Squamish Oceanfront Lands, following Precinct Subdivision]

APPENDIX "2" – PHASED DEVELOPMENT AGREEMENT TEXT, WITH SCHEDULES A AND C

APPENDIX "3" – REQUIRED INFRASTRUCTURE

The Required Infrastructure consists of the following:

1. Main road

The Developer will construct, within the road that is dedicated as part of the Precinct Subdivision referenced in the Phased Development Agreement:

- two 3.5 metre wide travel lanes,
- two 1.5 metre wide bicycle lanes,
- two 2.3 metre wide parking lanes,
- two 1.65 metre wide sidewalks, and
- two 1.05 metre boulevards

generally in keeping with the layout on the Road Cross Section Plan attached hereto and forming part of this Appendix, on the Main Road area shaded in grey on the Site Plan attached hereto and forming part of this Appendix.

The road structure (sub-base, base and asphalt thickness) will be built in accordance with the following standards:

- compacted sub-base thickness: 300 mm;
- compacted base thickness: 150 mm; and
- compacted asphalt thickness lower / upper course: 45 / 40 mm.

Streetlights will be the City Spirit Luminaire, installed approximately every 100 metres on each side of the Main Road.

Street trees will be 8 cm calliper with 96 cm rootball and 1.8 metre clear stem at installation, installed with 7 to 12m spacing. Tree species will match those for Cleveland Avenue (Acer Rubrum 'Red Sunset Maple').

2. Water main

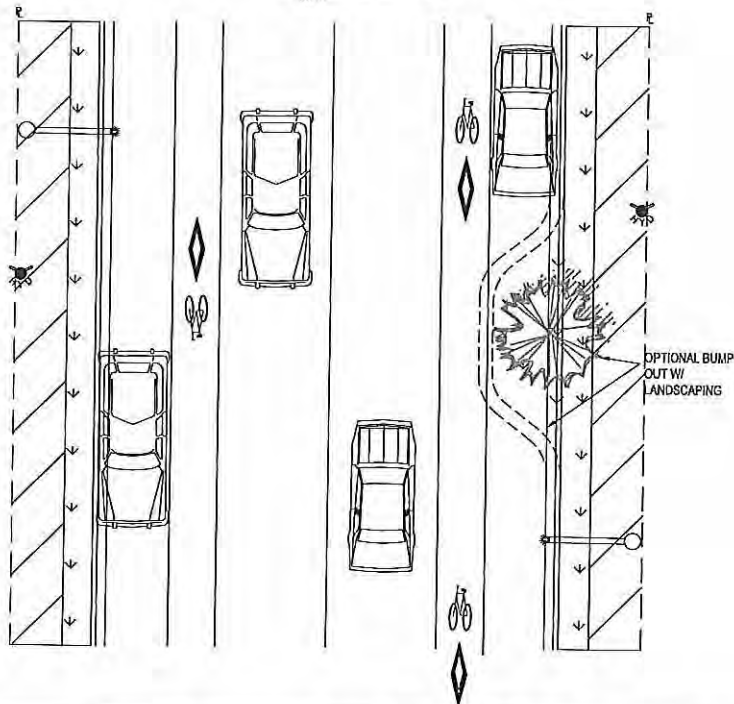
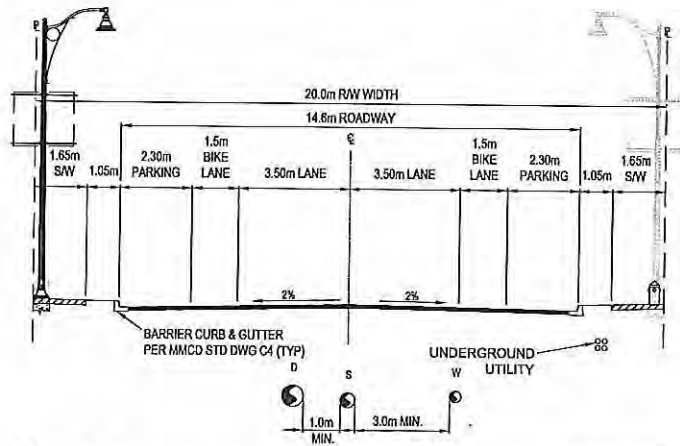
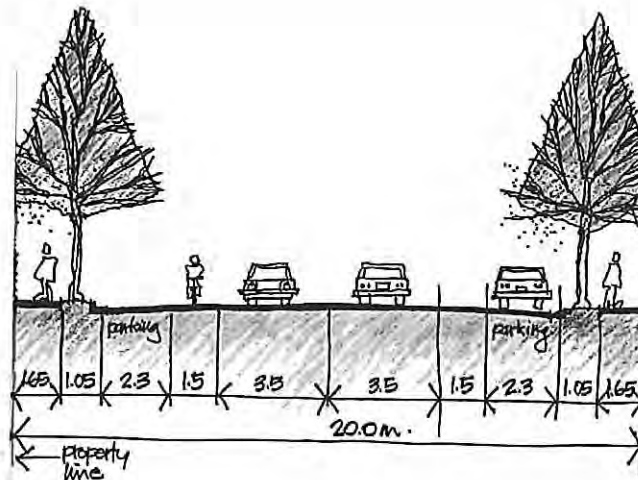
The Developer will construct, within the length (approximately 825 metres) of the dedicated area for the Main Road shown shaded in grey on the Site Plan attached hereto and forming part of this Appendix, approximately 825 metres of C900 300mm PVC water main, at a depth of between 1 and 1.5 metres.

3. Sanitary sewer main

The Developer will construct, within the length (approximately 720 metres) of the portion of the

dedicated area for the Main Road that is south of the bend at Galbraith Road shown shaded in grey on the Site Plan attached hereto and forming part of this Appendix, approximately:

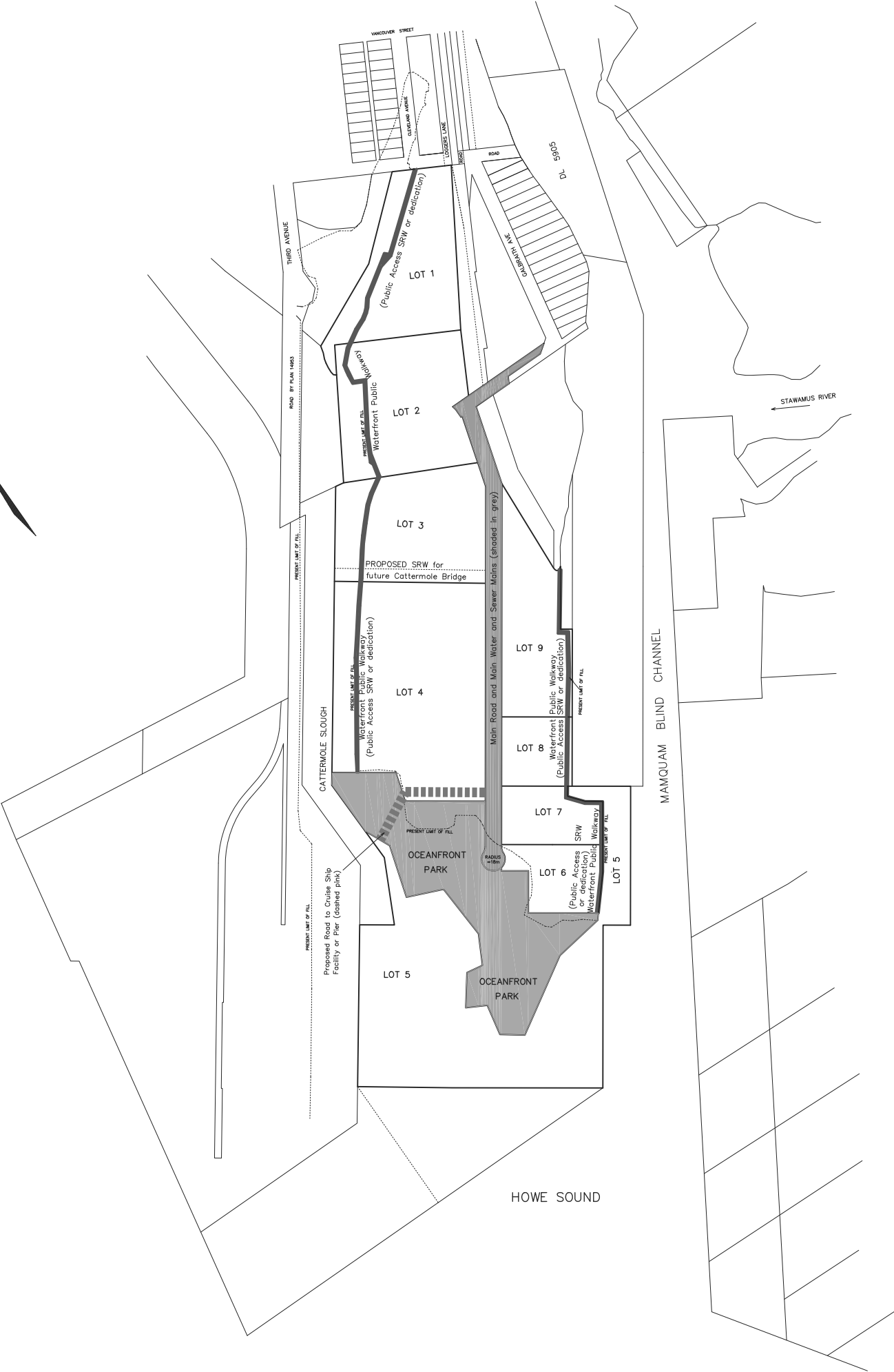
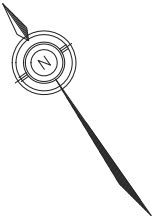
- 220 metres of DR35 PVC 200 mm sanitary sewer, in the southerly 220 metres of the Main Road, at a depth of between 1.0 and 2.5 metres, and
- 500 metres of DR35 PVC 300 mm sanitary sewer, to the immediate north of that 220 metres, to the bend at Galbraith Road, at a depth of between 2.5 and 4.5 metres.



SITE PLAN



The intended plot size of this plan is 864mm in width by 1120mm in height (E Size) when printed at a scale of 1:2000.
All distances shown are horizontal ground-level distances in metres and decimals thereof, unless otherwise noted.



SCHEDULE C
PRECINCT SUBDIVISION PLAN

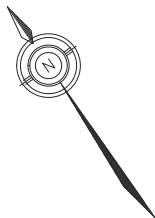
PROPOSED SUBDIVISION PLAN OF:

- (1) LOT 1, DISTRICT LOT 486, PLAN BCP16860;
 - (2) LOT 2, DISTRICT LOT 486, PLAN BCP16860;
 - (3) LOT 1, DISTRICT LOT 4271, PLAN BCP16861;
 - (4) LOT 2, DISTRICT LOT 4271, PLAN BCP16861;
 - (5) LOT 3, DISTRICT LOT 4271, PLAN BCP16861;
 - (6) LOTS 1, 2 AND 3, DISTRICT LOT 486, PLAN BCP16863;
 - (7) LOT G, DISTRICT LOTS 486, 4271, 4618, 5717, 6042 AND 7134, PLAN 14953;
 - (8) BLOCK B, DISTRICT LOTS 4618, 5717, 6042 AND 7134, PLAN 13452;
 - (9) LOT D, BLOCK 1, DISTRICT LOTS 486 AND 4271, PLAN 14521;
 - (10) DISTRICT LOT 5717, EXCEPT PORTIONS IN PLANS 13452 AND 14953;
 - (11) DISTRICT LOT 6042, EXCEPT PART IN PLAN 13452;
- ALL OF GROUP 1, NEW WESTMINSTER DISTRICT.**

50 25 0 25 50 100

The intended plot size of this plan is 864mm in width by 1120mm in height (8 size) when printed at a scale of 1:2000.

All distances shown are horizontal ground-level distances in metres and decimals thereof, unless otherwise noted.



AREAS

LOT 1 = 3.68 hectares (9.1 acres)
 LOT 2 = 4.09 hectares (10.1 acres)
 LOT 3 = 3.87 hectares (9.6 acres)
 LOT 4 = 7.41 hectares (18.3 acres)
 LOT 5 = 9.21 hectares (22.7 acres)
 LOT 6 = 1.33 hectares (3.3 acres)
 LOT 7 = 1.28 hectares (3.2 acres)
 LOT 8 = 1.15 hectares (2.8 acres)
 LOT 9 = 2.82 hectares (7.0 acres)

PARK = 5.56 hectares (13.7 acres)
 ROAD = 2.05 hectares (5.1 acres)

TOTAL = 42.45 hectares (104.9 acres)

FINAL AREAS MAY VARY UPON COMPLETION OF LEGAL FIELD SURVEY AND PLAN.

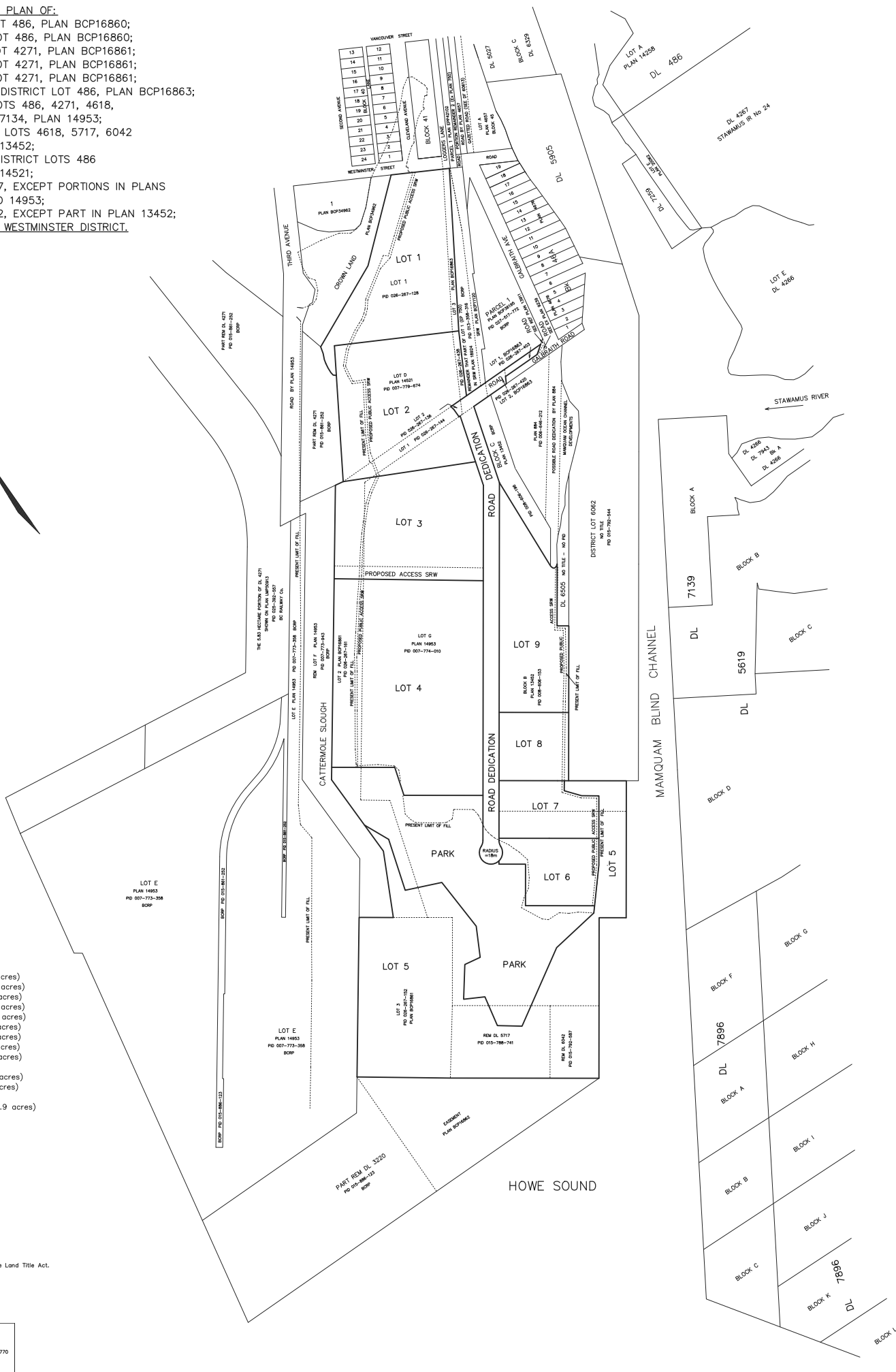
Lands are subject to section 108 of the Land Title Act.

Final Lot configurations may vary upon completion of a legal survey.

May 6, 2015

BUNBURY & ASSOCIATES
 BRITISH COLUMBIA LAND SURVEYORS
 SQUAMISH 604-892-3090 WHISTLER 604-932-3770

FILE No 2014-236.514



SCHEDULE D

SITE PLAN

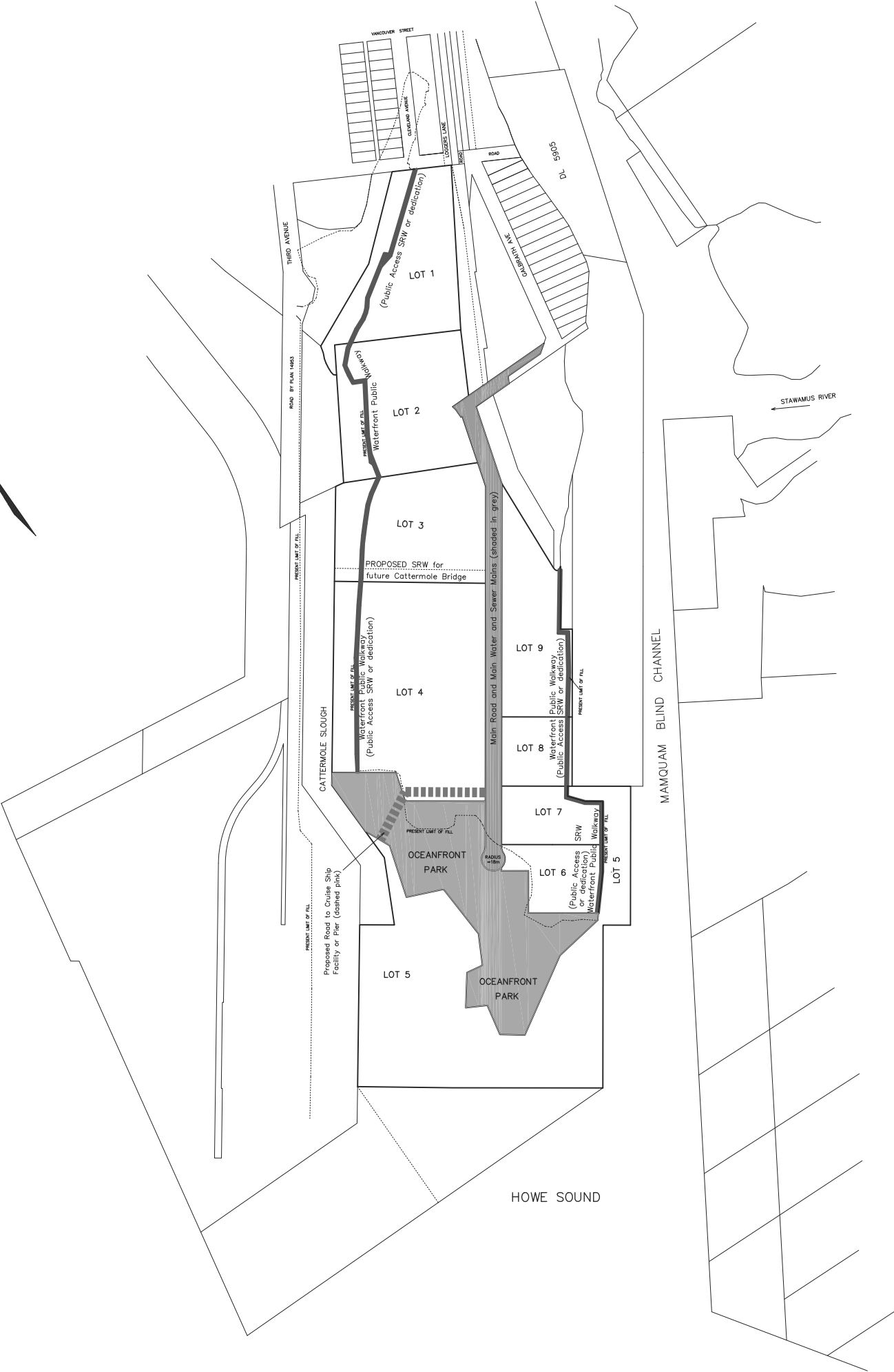
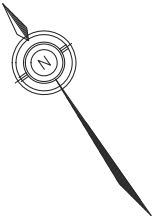
The Site Plan shows:

- the Squamish Oceanfront Lands,
- the 'Precinct Parcels' resulting from the Precinct Subdivision,
- the general location of the Main Road and sewer and water mains to be constructed in connection with the Precinct Subdivision,
- the land area generally located around the perimeter of the Squamish Oceanfront Lands that will comprise the Waterfront Public Walkway and that will be either the subject of the Public Access Statutory Right of Way or dedicated as park, and
- the general location of the access route through the Oceanfront Park that will provide access to pier and cruise ship facility, if constructed.

SITE PLAN



The intended plot size of this plan is 864mm in width by 1120mm in height (E Size) when printed at a scale of 1:2000.
All distances shown are horizontal ground-level distances in metres and decimals thereof, unless otherwise noted.



SCHEDULE E
ZONING BYLAW

**District of Squamish
Zoning Bylaw,
No. 2200, 2011**

Consolidated March 2015

Amendment Bylaw
(Residential Child Care) No. 2361, 2014



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SECTION 1 | INTERPRETATION

1.1 TITLE

This Bylaw may be cited for all purposes as the District of Squamish Zoning Bylaw No. 2200, 2011.

1.2 INTERPRETATION

- (a) Uses listed in this bylaw under the heading “Permitted Uses” may be conducted in the zone in respect of which the uses are listed, and all other uses are prohibited in that zone;
- (b) Areas, widths and depths specified in this bylaw in a table entitled “Minimum Lot Size” are the minimum areas, widths and depths respectively of lots that may be created by subdivision in the zone in respect of which the areas, widths and depths are specified, whether under the Land Title Act or the Bare Land Strata Regulations;
- (c) Areas, widths and depths specified in this bylaw in a table entitled “Minimum Site Size” in respect of particular categories of use and buildings are the minimum areas, widths and depths of sites on which such uses and buildings are permitted in the zone in respect of which the areas, widths and depths are specified;
- (d) Lot coverages specified in this bylaw in percentage terms or in terms of area under the heading “Maximum Lot Coverage” are the maximum proportions or areas, respectively, of lots that may be covered by buildings and structures in the zone in respect of which the lot coverage is specified;
- (e) Floor area ratios specified in this bylaw under the heading “Maximum Floor Area Ratio” are the maximum amounts of floor area that may be constructed and used on a lot in the zone for which the floor area ratio is specified;
- (f) If this bylaw specifies a distance under the column heading “Front Setback”, “Rear Setback”, “Interior Side Setback” or “Exterior Side Setback” in a table entitled “Siting Requirements for Principal Buildings”, no portion of a principal building or structure may be constructed within the specified distance of the front, rear interior side or exterior side lot line, as the case may be;
- (g) If this bylaw specifies a distance for a particular category of building in a table entitled “Maximum Height”, no building or structure in that category may be constructed in the zone for which the distance is specified, such that its height exceeds the specified height; and
- (h) Words and phrases in italics, including hyperlinks, are included in this bylaw for the convenience of the reader and do not form a part of the bylaw.

1.3 DEFINITIONS

In this Bylaw:

ACCESSORY BOARDING means an accessory use to a principal single unit dwelling, two unit dwelling, or townhouse use for the accommodation of persons other than members of the immediate principle residents. It is contained entirely within the dwelling unit and accommodates a maximum of 2 boarders, but does not include a bed and breakfast or a secondary suite. *(Bylaw 2303, 2013)*

ACCESSORY BUILDING, STRUCTURE OR USE means any permanent or temporary building, structure or use customarily associated with and subordinate to the principal building, structure or use located on the same lot and includes greenhouses, sheds, detached garages and vehicle tents.

ACCESSORY RESIDENTIAL DWELLING means a residential dwelling that is permitted in a non-residential zone, which is accessory to a permitted principal use on a lot. *(Bylaw 2303, 2013)*

ACCESSORY RETAIL SALES means a sales use accessory to a principal use that:

- (a) is accessory to a principle commercial, agricultural or industrial use permitted in the zone;
- (b) for industrial zones: is manufactured, repaired, warehoused or wholesaled on the same lot;
- (c) is limited to 20% of the total floor area contained within the building where the accessory retail sales will occur; and
- (d) can include rental, display, or sales of goods. *(Bylaw 2303, 2013)*

ACCESSORY SLEEPING UNITS means one or more self-contained rooms used for living and sleeping where such unit does not contain facilities for the preparation or cooking of food, and is accessory to a school or educational use.

ACCESSORY USE means a use which is:

- (a) subordinate to a principal use on the same lot, and exists to aid/ contribute to/ carry out the function of that principal use;
- (b) subordinate in area, extent and purpose to the principal use served; and
- (c) customarily incidental to the principal use. *(Bylaw 2303, 2013)*

ACCOMMODATION UNIT means a self-contained room within a hotel or motel containing facilities for living and sleeping and occupied or intended to be occupied by transient guests.

ADULT VIDEO means an adult motion picture as defined in the Motion Picture Act.

ADULT VIDEO STORE means premises in which adult motion pictures are available for distribution, sale or rental.

AGRICULTURE means a use providing for the growing and rearing of livestock, including dogs, poultry, fowl, swine, horses, cattle, other livestock, and bees; growing, producing, and harvesting of agricultural products; includes the storage, processing, and sale of individual farm products harvested, reared, or produced on that farm and the storage of farm machinery, implements, and supplies and repairs to farm machinery and implements used on that farm; specifically excludes all manufacturing, processing, storage and repairs not specifically included in the definition, processing of livestock and poultry not produced on the site, piggery use, feed lots, and mink farms.

AGRICULTURE, URBAN means the act of growing food on a lot. In addition to produce grown in a garden, this also includes community gardens, fruit and nut tree production, the keeping of hens and/or bees, and agricultural retail sales limited to 30 m² in gross floor area and provided that at least 75% of goods for sale are produced on site. Urban agriculture is an accessory use on parcels that are zoned residential. *(Bylaw 2303, 2013)*

AIRPORT includes airstrips, terminal buildings, hangars, restaurant and accessory offices.

ALCOHOLIC BEVERAGE MANUFACTURING includes breweries, distilleries and wineries. It means a use where alcohol is manufactured. This use includes selling of alcoholic off-sales products that are manufactured on site, as well as a tasting area to serve alcohol that is manufactured on site, that complies with federal liquor laws. *(Bylaw 2303, 2013)*

ALTERNATIVE FUEL SERVICE STATION means any one of the following:

- (a) electric Vehicle Charging Station;
- (b) fast-fill compressed natural gas (CNG) vehicle refueling station;
- (c) hydrogen vehicle refueling station; and/or
- (d) liquefied petroleum gas (propane) vehicle refueling station. *(Bylaw 2303, 2013)*

ANIMAL ATTRACTANT means any substance or material, with or without an odour, which attracts or is likely to attract animals; and without limitation includes food or other edible products, whether intended for humans, animals, or birds, grease, oil, antifreeze, paint, petroleum products, and compost other than grass clippings, leaves or branches.

APPROVING OFFICER means the Approving Officer appointed by Council to regulate the subdivision of lands.

AQUACULTURE means the controlled cultivation, rearing, and harvesting of shellfish, and marine plants.

ARTISAN means the use of a premises for the creation and production of arts and crafts for sale to the general public and includes but is not limited to the production of pottery, ceramics, sculpture, painting, drawing, weaving, candle production, tile art, creative writing, moving or still photography none of which involves amplified sound or the use of toxic or hazardous materials. *(Bylaw 1728, 2002)*

ARTS AND CULTURE means a use which provides for the presentation and display of artistic and cultural endeavors, and includes art galleries, museums, and theatres.

ASSEMBLY means a use which provides for the assembly of persons for religious, charitable, philanthropic, cultural, recreational, or educational purposes.

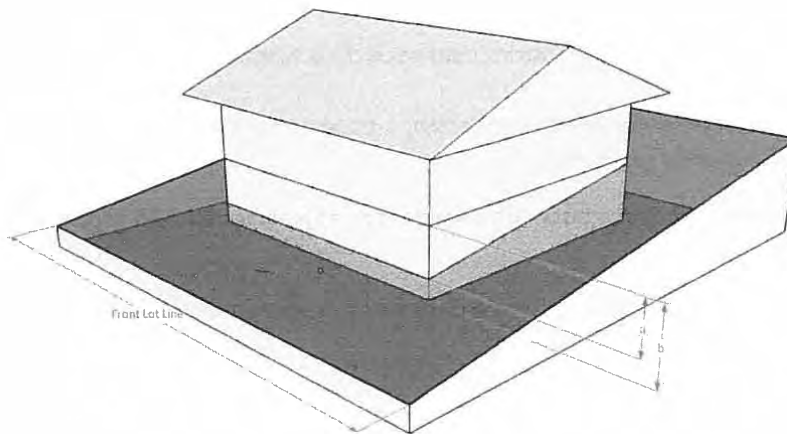
ASSISTED LIVING FACILITY means use of a premises as an assisted living residence and operated by licensee under the *Community Care and Assisted Living Act*. Excludes Emergency Shelter. (*Bylaw 2315, 2013*)

AUTOMOBILE-ORIENTED COMMERCIAL means a use providing for the retail sale of automobiles, trucks, recreational vehicles and related parts and accessories, and includes facilities to service, wash or repair; excludes vehicle fueling stations. (*Bylaw 2303, 2013*)

AUTOMOBILE REPAIR SHOP means a building used or intended to be used for repairs of motor vehicles.

BASEMENT means that portion of a building located below the first storey, and includes a walk-out basement; a building shall have not more than one basement.

BASEMENT, WALK-OUT means a storey of a building located below the first storey and having at least one wall wholly above height datum.



Basement, where $a < 1.5m$ and $b > 1.5m$

BAY WINDOW means a decorative projection from the wall of a building, not incorporating floor area, constructed in a way that does not require a foundation or the cantilevering of joist, glazed on all sides with a minimum 50% glazing.

BED AND BREAKFAST means the use of a dwelling unit for temporary lodging of paying guests, limited to a maximum of two (2) bedrooms and common areas, including a dining room. A bed and breakfast use is not considered a home occupation use for the purpose of this Bylaw.

BEES mean any insect of the species *apis mellifera*; (*Bylaw 2303, 2013*)

BEEHIVE means a structure which houses a colony of worker bees with a queen and drones; (*Bylaw 2303, 2013*)

BICYCLE PARKING, CLASS A means a secure, long-term parking space for bicycles that is provided in a separate, dedicated room or enclosure located no lower than the first complete parking level below grade, with direct access to outside, and accessed with a separate lock and key or programmed entry system, available only to authorised users.

BICYCLE PARKING, CLASS B means a space provided on a rack with a minimum width of 0.3m for each bicycle, constructed of sturdy theft-resistant material and having secure theft-resistant anchoring to the floor or ground.

BIOMASS means:

- (a) wood or wood products;
- (b) uncontaminated wood waste, such as mill ends, wood chips, shavings, sawdust, sander dust, clean construction waste and hog fuel;
- (c) manufactured wood fuel;
- (d) vegetative or agricultural products as specifically authorized by the district director.

But, unless otherwise authorized by the District, does not include substances that contain any of the following:

- (e) glue, paint or preservative, or foreign substances harmful to humans, animals or plants when combusted;
- (f) wood or wood products with chloride content greater than 0.05 percent dry basis;
- (g) wood or wood products with moisture content greater than 60 percent dry basis;
- (h) manure;
- (i) recyclable post consumer waste;
- (j) paper or paper products; or
- (k) demolition waste or other municipal solid waste containing materials other than uncontaminated wood waste.

BOILER means any combustion equipment fuelled solely by natural gas, propane or biomass that produces hot water or steam, but does not include:

- (a) waste heat boilers;

(b) sulphur plant reaction furnaces, steam reformer heaters and steam cracking heaters in the refined petroleum products industry as identified in the North American Industry Classification System (NAICS) code 324110; and

(c) process heaters.

BUILDING means any structure used or intended for supporting or sheltering any use, persons, animals, or property.

BUILDING FACE, FRONT means the extended line of the wall of a building (or of any projecting portion of the building, except steps, sills, cornices, eaves, fire escapes and unroofed porches) which faces the front lot line.

BUILDING FACE, REAR means the extended line of the wall of a building (or of any projecting portion of the building, except steps, sills, cornices, eaves, fire escapes and unroofed porches) which faces the rear lot line.

BUILDING FACE, SIDE means the extended line of the wall of a building (or of any projecting portion of the building, except steps, sills, cornices, eaves, fire escapes and unroofed porches) which faces a side lot line.

BUILDING INSPECTOR means the District Building Inspector appointed by Council.

BUILDING SUPPLY OUTLET means a building that is used for the supply and sale of building materials, fixtures, hardware, equipment and other similar goods related to construction and home improvement, and may have an outdoor storage area.

BUSINESS AND PROFESSIONAL OFFICE, MAJOR means the use of a building for the purpose of carrying out business or professional activities. (*Bylaw 2190, 2011*)

BUSINESS AND PROFESSIONAL OFFICE, MINOR means the use of a building for the purpose of conducting a business in an office environment, where such a business does not rely upon a continuous flow of customers visiting the premises and does not engage in any retail sales, and may include but not be limited to such businesses as architectural, data processing, drafting, engineering, legal, surveying or, real estate appraisal offices, and specifically excludes medical and dental offices, travel agencies, insurance offices and real estate offices.

BUSINESS SERVICE ESTABLISHMENT means the use of a building where business services are provided and goods accessory to the provision of such services may be sold, and includes locksmith, printing/copying services, computer repairs and services, office equipment and supplies, alarm and security services, mailing and shipping services and other similar services.

BYLAW ENFORCEMENT OFFICER means the Bylaw Enforcement Officer appointed by Council.

CARPORT means an open structure that is an accessory building or attached to the principal building for the use of parking of one or more motor vehicles.

CHILD CARE FACILITY means a use or facility providing for the care of children licensed according to the Child Care Licensing Regulation under the Community Care and Assisted Living Act.

CHILD CARE FACILITY, RESIDENTIAL means the use of a dwelling unit for the care of not more than 16 children, licensed according to the Child Care Licensing Regulation under the Community Care and Assisted Living Act.

CINEMA means a means a place where motion pictures are exhibited for public viewing. (*Bylaw 2303, 2013*)

CIVIC means a use for functions provided by a government body; includes federal, provincial and municipal offices and yards, schools and colleges, hospitals, community centres, swimming pools, libraries, museums, parks, playgrounds, day cares, cemeteries, police and fire stations and waterways.

COMMERCIAL is a category of use providing for an occupation, employment or enterprise that is carried on for gain or monetary profit by any person.

COMMERCIAL COMPOSTING means the controlled biological oxidation and decomposition of organic matter with or without the addition of amendment material such as wood waste that produces compost, conducted as a business or business activity.

COMMERCIAL RECREATION means a use providing for outdoor commercial recreation facilities and accessory retail sales and services customarily incidental to such facilities; includes golf courses, driving ranges, stadiums, marinas, and sports clubs.

COMMERCIAL VEHICLE means a vehicle engaged in carrying or designed to carry goods, wares or merchandise and licensed as a commercial vehicle.

COMMUNITY CARE FACILITY means use of a premises as a community care facility and operated by a licensee under the *Community Care and Assisted Living Act*. Excludes Emergency Shelter. (*Bylaw 2315, 2013*)

COMMUNITY GARDEN means a public place for growing and maintaining edible and ornamental plants for personal and non-commercial use or for charitable donation, and operated or overseen by a non-profit society, community group or school. (*Bylaw 2303, 2013*)

COMMUNITY SEWER SYSTEM means a sewage collection and disposal system owned and operated by the District of Squamish.

COMMUNITY WATER SYSTEM means a system of waterworks owned and operated by the District of Squamish.

COMPREHENSIVE DEVELOPMENT PLAN means:

- (a) a site plan or plans, including the legal description of the area to be developed, showing the location of all existing and proposed buildings, streets, lanes, highways, driveways, parking and loading areas, sidewalks, street lighting, utilities and utility easements, watercourses and other geographical features of the site;

- (b) architectural plans, including information on exterior finishes for any proposed buildings or structures;
- (c) landscaping plans, including plant specifications for all portions of the site not covered by buildings, structures and circulation spaces;
- (d) the location, size, height, colour, lighting and orientation of all signs, if applicable;
- (e) density, floor area ratio, lot coverage, size and height of buildings; and
- (f) a statement of proposed uses.

CONFORMING BUILDING OR USE means a building or use which conforms with all the regulations of this Bylaw for the zone in which such building or use is located.

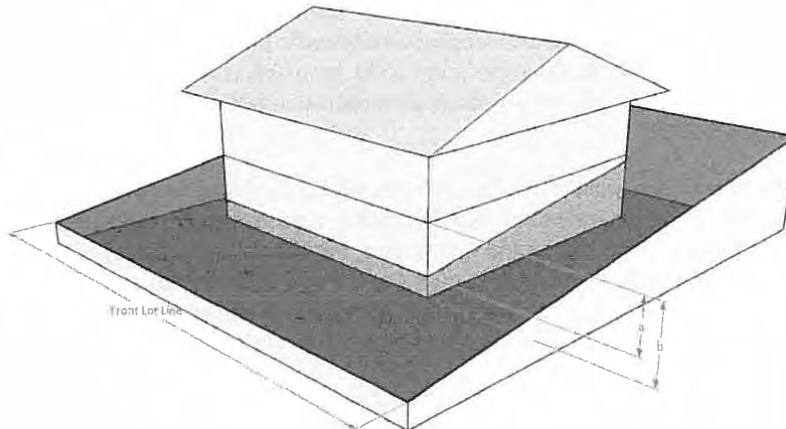
CONSTRUCTION means to erect, repair, alter, add, install, demolish, remove, excavate and shore.

CONVENIENCE STORE means a use which provides for the sale of goods to serve the day-to-day shopping needs of the general public including groceries, magazines, confections, and bakery goods.

COOP means a covered enclosed structure to shelter hens; (*Bylaw 2303, 2013*)

COUNCIL means the elected officials of the District of Squamish.

CRAWL SPACE means that portion of a building situated between the underside of the floor next above and the ground floor slab or ground surface where no slab exists, having a vertical clearance of no more than 1.5 metres (5 feet).



Crawl Space, where $a < 1.5m$ and $b < 1.5m$

DEVELOPMENT means the improvement of land with buildings or structures.

DISTRICT means the Corporation of the District of Squamish or the area within the boundaries of the District of Squamish as the context requires.

DRIVE-THROUGH RESTAURANT means a building providing for restaurant use with drive-through takeout facilities or consumption of food in vehicles parked on the lot.

DWELLING, APARTMENT means a building used for residential purposes and consisting of 3 or more dwelling units.

DWELLING, SINGLE UNIT means a detached building used for residential purposes and consisting of one dwelling unit, and includes a modular home.

DWELLING, TOWNHOUSE means a lateral series or cluster of two or more individual dwelling units having all or a portion of a wall common to adjacent dwellings, where access to each unit is from the finished grade of the lot.

DWELLING, TWO UNIT means a building consisting of two dwelling units, excluding secondary suites, which are placed either vertically one above the other, or connected to one another horizontally by a common wall (all storeys) and a common foundation having a length of at least 20% of the depth of the building. *(Bylaw 2235, 2012)*

DWELLING UNIT means one or more habitable rooms constituting a self-contained unit with a separate entrance and a single electrical service, used or intended to be used for residential purposes by a single household and containing only one kitchen equipped with a sink and cooking facilities. For the purpose of this definition, a second room in a dwelling unit equipped for canning, frying or cooking of special meals for the exclusive use of the household occupying that dwelling unit does not constitute a kitchen.

ELECTRIC VEHICLE CHARGING STATION means public electric vehicle charging station located in commercial, comprehensive development, mixed-use, industrial, institutional and civic zones. Public charging stations can supply charging for a fee. *(Bylaw 2303, 2013)*

EMERGENCY SHELTER means a use staffed and supervised by a public authority or non-profit agency for the purpose of providing temporary sleeping accommodation for people in need of emergency shelter on a short-term basis (to a maximum of 30 days). Emergency Shelter use includes drop-in and meal services as well as accessory administration and office space for use by program staff. *(Bylaw 2315, 2011)*

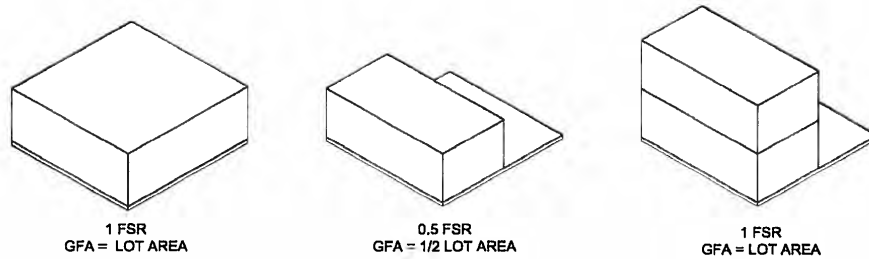
ENTERTAINMENT means a commercial use that is contained within a building and provides recreational opportunities to the general public, and specifically includes arcades, bowling alleys, billiard and pool halls, cinemas, clubs, lodges and similar uses, but specifically excludes adult video stores, any stand alone facility licensed under the Liquor Control and Licensing Act as a liquor primary licensed premises, and slot machines and casinos, except for temporary charity casinos with a maximum three (3) day event with a maximum twelve (12) days per year duration.

FENCE means a structure intended for the purpose of total or partial physical and/or visual separation, screening or enclosure of a property or portion thereof and does not include retaining wall.

FITNESS CENTRE means a building or portion of a building used to provide equipment and training to improve athletic condition and health.

FLOOR AREA means the space on any storey of a building between exterior walls and required firewalls, including the space occupied by interior walls and partitions, but not including exits, vertical service spaces, and their enclosing assemblies. (*Bylaw 2303, 2013*)

FLOOR AREA RATIO means the figure obtained when the gross floor area of all buildings is divided by the area of the lot.



FOOD PRIMARY ESTABLISHMENT means a use where the preparation, service and sale of food is the primary focus. A food-primary establishment must offer both appetizers and main courses and have a Food Primary License issued by the Province of British Columbia Liquor Control and Licensing Branch.

FOOD PRIMARY LICENSE means a liquor license issued by the Province of British Columbia Liquor Control and Licensing Branch for a business where the service of food, as opposed to liquor, is the primary focus.

FOOTPRINT means the total area of a structure on one level (footprint) to the exterior walls and a line joining all columns but not including overhangs. (*Bylaw 2235, 2012*)

FRONTAGE means the length of a lot boundary which immediately adjoins a public street.

GARAGE means a roofed accessory building or portion of a principal building with more than 60% of the perimeter being enclosed within walls, the principal use of which is for parking one or more motor vehicles. (*Bylaw 2303, 2013*)

GASOLINE SERVICE STATION means a building used principally for the retail sale of fuels, lubricating oils and accessories for motor vehicles and the servicing and repairing of motor vehicles, and includes an accessory car wash, but excludes all body repairs and painting of motor vehicles.

GRADE, FINISHED means the level of finished ground adjoining the exterior walls of a building except that localized depressions such as for vehicle or pedestrian entrances need not be considered in the determination of the level of finished ground.

GRADE, NATURAL means:

- (a) with reference to a Building or Structure not requiring subdivision, the elevation of the ground surface in its existing state at each of the points used in

calculating the Height Datum Points, prior to any disturbance, alteration, excavation or filling, as determined by a registered land surveyor;

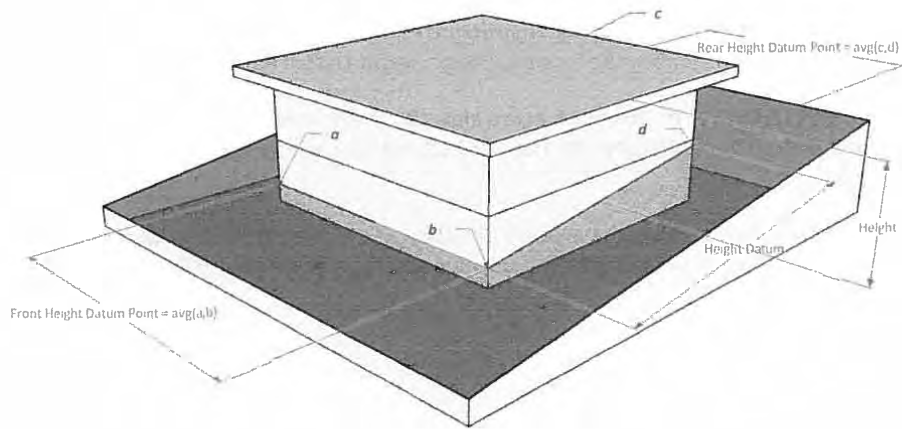
- (b) with reference to any development requiring subdivision, means the elevations shown on the grading plan submitted as a component of subdivision prior to any construction where such a plan has been approved by the District, but excludes Localized Depressions in all cases; and
- (c) with reference to any development where the elevation of the ground surface in its existing state is below the required flood plain construction level as determined by a Professional Engineer, means 0.6 m (2 ft.) above the highest elevation of the crown of any Highway abutting the lot.

GROSS FLOOR AREA means the total area of space on all storeys of a building as calculated according to Section 4.25 of the General Regulations.

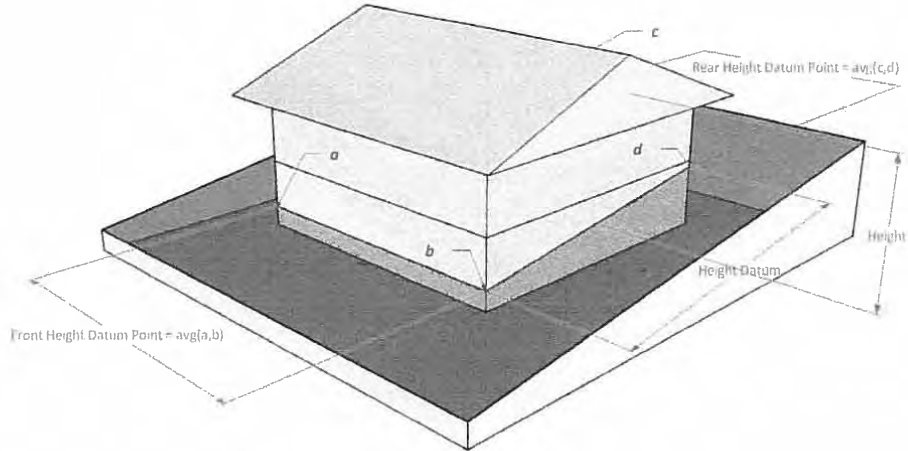
HABITABLE SPACE means an interior space of a building that is designed or intended for living, sleeping, eating or food preparation, and excludes bathrooms, utility rooms, workrooms, furnace rooms and storage rooms.

HEIGHT with reference to a building or structure means the vertical distance from the Height Datum to:

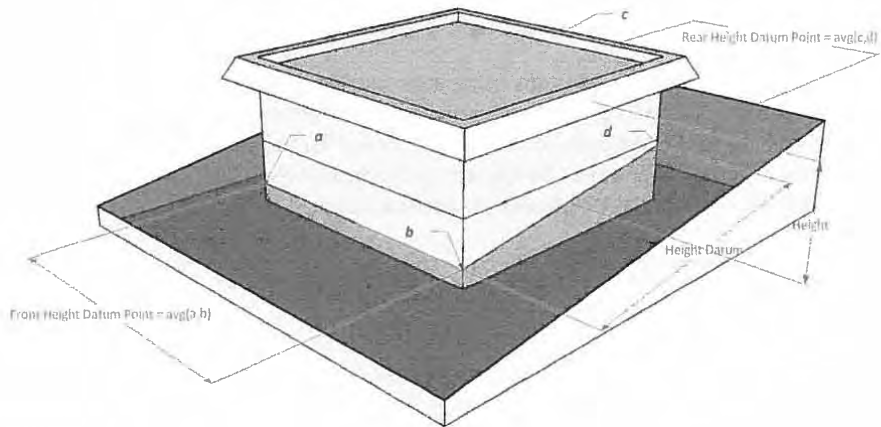
- (a) the highest point of the roof surface of a flat roof;
- (b) the deck line of a mansard roof;
- (c) the mean level between the top of upper floor walls and the ridge of the largest common roof section, a gable, hip gambrel, or other major sloping roof;
- (d) the highest point of a façade, false framing or parapet; and
- (e) the highest point of a structure other than a building. (Bylaw 2303, 2013)



Example of Height, as measured to the highest point of the roof surface of a flat roof.



Example of Height, as measured to the mean level for a sloped roof.

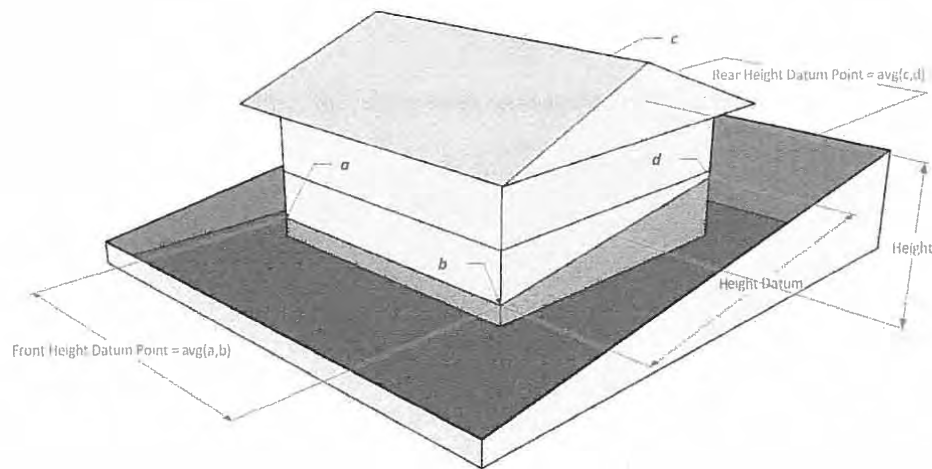


Example of Height, as measured to the deck line of a mansard roof.

HEIGHT DATUM with reference to a building or structure means the line established by longitudinally extending a line joining the Front and Rear Height Datum Points.

HEIGHT DATUM POINT, FRONT means the average elevation of the two points on a lot established where the front building face intersects with the side building face as measured from the lesser of natural or finished grade.

HEIGHT DATUM POINT, REAR means the average elevation of the two points on a lot established where the rear building face intersects with the side building faces as measured from the lesser of natural or finished grade.



Example of Height Datum and Height Datum Points (Front and Rear)

HEN means a domesticated female chicken that is at least four months old; (*Bylaw 2303, 2013*)

HIGHWAY means a public street, path, walkway, trail, lane, bridge, road, thoroughfare, or any other public way, but does not include a private right-of-way on private property.

HOME OCCUPATION, RESIDENTIAL means any occupation carried on for financial gain or otherwise, in or from a dwelling unit or accessory building in a Residential zone, which use is separate and subordinate to the use of the dwelling unit for residential purpose, shall not alter the residential character of the area, and shall be subject to the provisions of Section 4.18 of this Bylaw. Home occupation, residential includes but is not limited to:

- (a) home occupation, office;
- (b) child care facility;
- (c) a home business that brings no more than one client at a time to the residence (i.e. massage therapy and hair styling); and
- (d) dog daycare of three dogs or less. (*Bylaw 2303, 2013*)

HOME OCCUPATION, OFFICE means an office within a dwelling unit that is used to provide the following or similar type services: accounting and bookkeeping, research, business, marketing, design or computer consultant, janitorial service, contractor and tradesman, newspaper preparation, security service, recreation service, arts and crafts, but excludes the carrying out of anything that generates nuisance outside the residential unit. *(Bylaw 2235, 2012)*

HORSE STABLE means facility for the boarding, riding, breeding, and renting of horses, but does not include an indoor riding arena. *(Bylaw 2235, 2012)*

HOSPITAL means an institution operated for the reception and treatment of persons suffering from illness or disability, and includes the provision of complex care within a Community Care Facility.

HOSTEL means a building in which sleeping units are provided and offered to the public for compensation and which is open to transient guests but does not incorporate dwelling units nor an off-street parking area for guests, and may include a restaurant as an accessory use.

HOTEL means a building in which accommodation units are provided and offered to the public for compensation and which is open to transient guests but does not incorporate dwelling units, and may include accessory uses such as a restaurant, health club, liquor primary establishment, and retail stores to a maximum of 33% of gross floor area.

HOUSEHOLD PETS means an animal kept for companionship and amusement rather than for practical purposes and does not include horses, mules, donkeys, cattle, llamas, chickens, turkeys, geese, ducks, sheep, swine, ostriches, peacocks, un-caged pigeons or animals used for agricultural purposes.

INDOOR FOOD PRODUCTION means an industrial use where plants are grown inside a building that is connected to District services, including sewer, water, and drainage. May include food processing. Plants may be grown for biomedical purposes, but does not include medical marihuana production. *(Bylaw 2303, 2013)*

INDOOR RECREATION means the use of a building for indoor recreational activities that require warehouse type space, and may include climbing walls and adventure centers, but specifically excludes arcades.

INDOOR RIDING ARENA means an enclosed equestrian riding ring. Permitted uses in an indoor riding arena include:

- indoor horse riding;
- indoor horse stables; and
- storage for equestrian-related items.

INDUSTRIAL means a use providing for the processing, fabricating, assembly, storing, transporting, distributing, wholesaling, testing, servicing, repairing, wrecking, or salvaging of goods, materials, or things; includes without limitation the operation of truck and shipping terminals, docks, railway service spur, passenger depots, marinas, heliport and seaplane facilities, bulk gas and fuel loading and storage facilities, auction and liquidation sales, sawmill, pulp mill and log booming. Includes medical marihuana production and indoor food production. *(Bylaw 2303, 2013)*

INDUSTRIAL FUEL INSTALLATION means a building or land used for the sale of motor fuel and lubricants for use only in industrial equipment and commercial vehicles.

INSTITUTIONAL means a use by a public authority for the intended benefit of the public.

INTERPRETIVE SIGNAGE means a sign and/or structure providing general or tourism information to the public.

KENNEL means an establishment for the overnight boarding or breeding of four or more dogs.
(*Bylaw 2303, 2013*)

LANDSCAPING means changing, modifying or enhancing the visual external appearance of a site development including reshaping the earth, planting or preserving vegetation, adding walks, patios, fencing or other ornamental features, and includes the retention of existing trees and plants where appropriate. This does not include the alteration of a site for the purposes of determining height datum.

LANE means a public way which affords access to a lot, at the side or rear of the lot.

LIGHT INDUSTRIAL means a use providing for the processing, fabricating, assembling, leasing, warehousing, transporting, distributing, wholesaling, testing, servicing, or repairing of goods or materials, where the primary activity of such a use is carried out within or exterior to a building, which may be serviced with a railway spur. Includes medical marihuana production and indoor food production. (*Bylaw 2303, 2013*)

LIQUOR PRIMARY ESTABLISHMENT means a use that holds a Liquor Primary License issued by the Province of British Columbia Liquor Control and Licensing Branch where the primary purpose is the service of liquor, as opposed to food, such as pubs, bars, lounges, and night clubs.

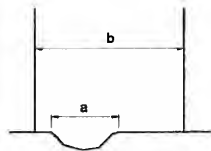
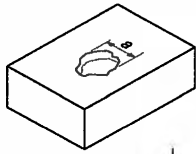
LIQUOR STORE means the use of premises for the sale of liquor, beer or wine for consumption off premises. This includes a government liquor store, government beer store or government wine store, or an agency established under the Liquor Distribution Act, including an agency store, an authorized vendor, a distributor, and a licensee. An accessory retail sale of alcoholic beverages that are manufactured on-site by an Alcoholic Beverage Manufacturer is not considered a liquor store. (*Bylaw 2303, 2013*)

LIVE-WORK UNIT means a dwelling unit in which the resident is permitted to undertake income-generating artisan use, professional consulting, personal service establishment use, retail sales, and small-scale manufacturing.

LOCALIZED DEPRESSION means an existing depression in Natural Grade not exceeding 3.0 metres (9.8ft.) in width, or the lesser of 3.0 metres or 20% of the wall length along any building wall that it intersects; or a depression below finished grade created for the purposes of providing vehicles or pedestrian entrance to a building subject to the following conditions:

- (a) only one vehicle entrance and one pedestrian entrance are permitted as localized depressions on a single unit dwelling.

- (b) on any side of the building in a single unit residential zone, the Localized Depression width shall not exceed the lesser of 50% of the corresponding building width or:
- (i) 6.0 metre width for vehicle access;
 - (ii) 2.44 metres wide and 3.0 square metres in area for a pedestrian access;
 - (iii) 7.3 metres wide for a combined vehicle and pedestrian access; and
- (c) any combination of vehicle or pedestrian entrances and existing depressions remaining after finish grading shall not exceed 50% of the corresponding building width or length along any side of a building.



*Example of a Localized
Depression in natural Grade*

$$a = 3m, b = 20\%$$

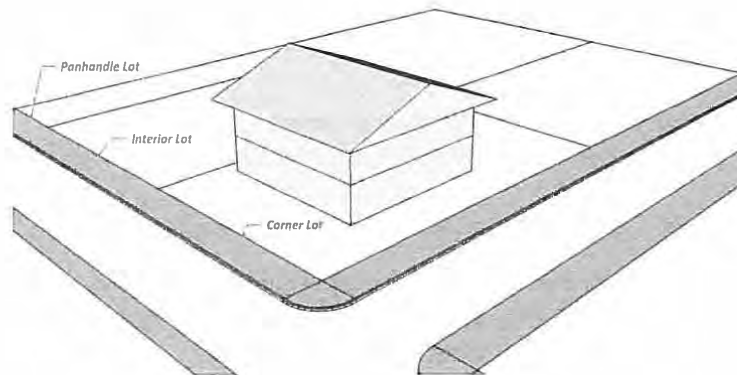
LODGING AND ROOMING HOUSE means a building in which more than two (2) sleeping units are rented to more than two (2) and not more than four (4) persons, and excludes the preparation of meals within the rental units, but does not include a bed and breakfast.

LOT means a block, parcel or other area in which land is held or into which land is subdivided.

LOT, CORNER means a lot at the intersection of two or more public streets.

LOT, INTERIOR means a lot other than a corner lot.

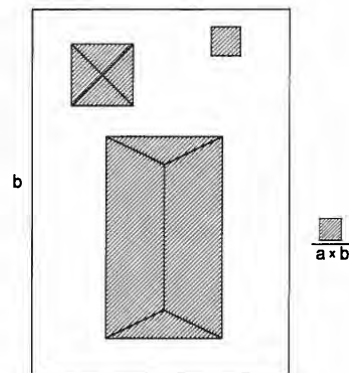
LOT, PANHANDLE means a lot which gains access to a public street through a strip of land narrower than the typical frontage dimensions required for the lot.



Example of Panhandle, Interior, and Corner Lots.

LOT AREA means the total horizontal area within the boundaries of a lot.

LOT COVERAGE means the greatest horizontal area covered by all buildings or structures on a lot, measured above finished grade, including any projecting portions thereof but excluding balconies, chimneys, sunshades, bay windows, canopies, cornices, eaves and gutters, fire escapes, sills, steps, open and uncovered terraces, decks or patios that are no more than 0.61 metres (2 feet) above finished grade, roof structures and similar projections, swimming pools, and provided that an exterior insulation and weather protection wall system has been approved by a Professional Engineer, exterior cladding or exterior solid wall systems up to a maximum exclusion of 0.165 metres (6.5 inches).



Example of Lot Coverage

LOT DEPTH means the mean distance between the front and rear lot lines.

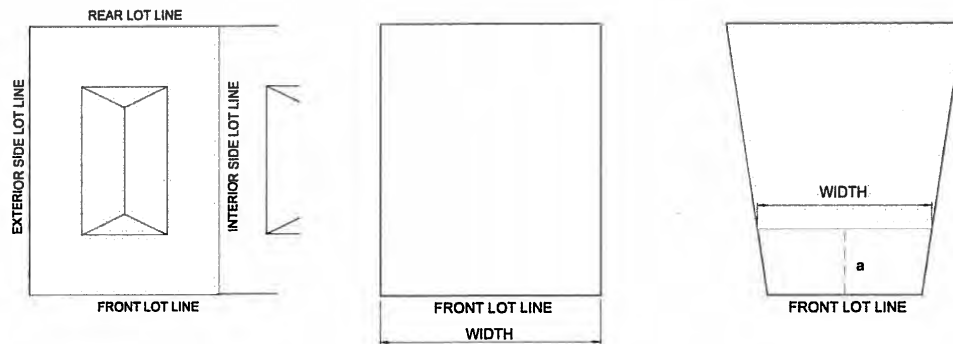
LOT LINE means the boundary line of a lot.

LOT LINE, EXTERIOR SIDE means the lot line or lines, other than the front and rear lot line, common to a lot and a public street, and in the case of a bare land strata lot common to the lot and the access route in the strata plan.

LOT LINE, FRONT means the lot line of a lot abutting a public roadway other than a lane. In the case of a corner lot, this shall be the narrower of the two frontages. In the case of a panhandle lot, the front lot line is the line formed by joining the two points of the access strip that do not front on a public street, and in the case of a bare land strata lot means the property line abutting the access route in the strata plan.

LOT LINE, INTERIOR SIDE means a lot line other than a front and rear lot line, common to a lot and another lot or a lane.

LOT LINE, REAR means the lot line or lines opposite to and most distant from the front lot line, or, where the rear portion of the lot is bounded by intersecting lot lines, the point of such intersection.



Example of Lot Lines (L) and Lot Width where the Front Lot Line measures at 90° to the Lot Depth (C) or Lot Width where the Front and Side Lot Lines do not meet at 90°, in which case $a = 4.57$ m

LOT WIDTH means the distance between side lot lines at the front setback line, measured at right angles to the lot depth, or in the case where the side lot line and front lot line do not meet at a 90° angle, measured at a 4.57 metre (15 feet) setback from the front lot line.

MANUFACTURING means to create, craft, make, process, or produce a finished product.

MARINA means a use providing moorage space for watercraft either free of charge or for payment of fee, but excludes use of any watercraft as living quarters, except for a caretaker.

MARINE-ORIENTED LIGHT INDUSTRY means a use providing for the fabricating, assembling, manufacturing, leasing, wholesaling, testing, servicing, maintaining or repairing of marine-oriented goods or materials, including, but not limited to, water vessels or watercrafts such as boats, kayaks and canoes, where the primary activity of such a use is carried out within a marina setting either within, or exterior to, a building or structure.

MEDICAL MARIHUANA PRODUCTION is an industrial, biomedical use. It means the growing, harvesting, storing, packaging, shipping and disposing of marihuana as licensed under the federal Marihuana for Medical Purposes Regulations (MMPR). (*Bylaw 2303, 2013*)

MOBILE HOME means a factory built single unit dwelling capable of being moved from place to place on an integrated chassis.

MOBILE HOME PARK that means a lot on which is installed or intended to be installed, two or more mobile homes.

MOBILE HOME SPACE means an area of land located within a mobile home park occupied or intended to be occupied by one mobile home.

MODULAR HOME means a single unit dwelling assembled on site using factory built components.

MOTEL means a building wherein accommodation units with or without private cooking facilities are provided, occupied or intended to be occupied primarily by transient motorists, with each accommodation unit being self-contained with its own bathroom and having its own parking space located on the lot, and may have a public dining room or café.

MOTOR VEHICLE REPAIR SHOP means a building used for the repair and servicing of motor vehicles, and excludes a wrecking and salvage yard.

MULTIPLE-UNIT RESIDENTIAL means a residential use in a building divided into not less than 3 dwelling units.

NEIGHBOURHOOD COMMERCIAL means a commercial use that is specifically intended to serve the day to day needs of the students, faculty, administrative staff, and residents of the neighbourhood, and includes a convenience store, professional offices, personal service establishments, child care facilities, restaurant, entertainment, video store, drug store and book store.

NEIGHBOURHOOD ENERGY UTILITY (also called DISTRICT HEATING) means a system for distributing heat generated in a centralized location for residential and commercial heating requirements such as space heating and water heating. *(Bylaw 2303, 2013)*

NON-CONFORMING BUILDING OR USE means any building or use which does not conform with all applicable regulations of this Bylaw.

NURSERY means a use where plants are propagated and grown. They include retail nurseries which sell to the general public, wholesale nurseries which sell only to businesses, and private nurseries which supply the needs of institutions or private estates. Includes sale of plant-related retail items. *(Bylaw 2303, 2013)*

OFF-STREET LOADING means a use of a lot providing for the loading and unloading of vehicles accessory to uses located on that lot.

OFF-STREET PARKING means a use of a lot providing for the parking of vehicles accessory to uses located on that lot; and includes parking spaces, turning areas for access to parking spaces and access and egress driveways.

PARKING AREA means a covered or uncovered area of a lot used for the off-street parking of vehicles of persons occupying or visiting the lot.

PARKING AREA, CONCEALED means a parking area concealed by its location wholly within a principal building and, other than at driveway and stairwell entrances, that does not project above the height datum except as permitted in this bylaw.

PARKING SPACE means a space for the parking of one motor vehicle but does not include aisle space for access and maneuvering of motor vehicles.

PERSONAL CARE SERVICE means those services that assist with the activities of daily living and specific nursing and rehabilitation tasks, which include assistance with personal hygiene, bathing, dressing, grooming, eating, moving around safely, and managing medication. *(Bylaw 2303, 2013)*

PERSONAL SERVICE ESTABLISHMENT means the use of a building where personal services are provided and goods accessory to the provision of such services may be sold, and includes barber shop, beauty salon, shoe repair shop, dry cleaning, laundromats, electrical appliance repair, upholstery, watch repair, photographer, tailor or dressmaker, tattoo parlour and other similar services. *(Bylaw 2303, 2013)*

PET DAYCARE means premises in which care is provided to household pets during the day and may include the provision of pet training services but does not include breeding or animal overnight boarding facilities. *(Bylaw 2303, 2013)*

PET GROOMING means grooming of domestic cats and dogs. Pet grooming use includes accessory pet daycare use. *(Bylaw 2303, 2013)*

PRINCIPAL USE means the primary purpose for which land, buildings or structures are ordinarily used.

PROCESS HEATER means any combustion equipment fuelled by natural gas, propane or Biomass for the purpose of transferring heat to material being processed other than by direct contact with the flue gas, but does not include:

- (a) boilers;
- (b) any process used to chemically transform ore or intermediate products into bulk metallic products; or
- (c) unfired waste heat recovery systems used to recover sensible heat from the exhaust of any combustion equipment.

PROFESSIONAL ENGINEER means a person who is registered or duly licensed as such under the provisions of the Engineers and Geoscientists Act.

PROPERTY LINE means the same as Lot Line.

PUBLIC PARKING means the principal use of a surface lot, building or structure for the parking or storage of vehicles for the public, and in the case of a building or structure, the parking may be concealed.

PUBLIC SERVICE means a use providing for the essential servicing of the District with water, sewer, electrical, telephone and similar services established by the District or a corporation operating under the Telecommunications Act; includes broadcast transmission facilities, sewer, water main and power line easements, pump house, sub-stations, telephone exchanges, and traffic controls.

PUBLIC STREET means a highway that provides primary access to lots and excludes a lane.

RAIL MARSHALLING YARDS means the use of land for the moving, storage and shunting of railway vehicles.

RECREATIONAL VEHICLE means a vehicle which is or was originally designed as a recreational conveyance to travel or to be transported on a highway and constructed or equipped to be used as temporary living quarters by travelers and includes but is not limited to motor home, camper, travel trailer, tent trailer, but does not include a manufactured home.

RECREATIONAL VEHICLE PARK means a parcel of land used or intended to be used for the parking of recreational vehicles on a transitory basis, and includes all buildings or structures thereon.
(*Bylaw 2235, 2012*)

RECYCLING DEPOT means a use that allows for the conversion of used products including, but not limited to: glass, tin, aluminum, steel, paper, cardboard, gyproc, or plastics into materials that will be used for the manufacturing of goods located at another location.

REFUSE means any discarded or abandoned food, substance, material, or object, whether from domestic, commercial, industrial, institutional or other use;

RESTAURANT means a use where the preparation, service and sale of food to the public for immediate consumption is the primary focus, occurring within the premises or delivered to other premises, and includes a Food Primary Establishment except where expressly prohibited, but excludes facilities for the consumption of food in motor vehicles parked on the site, or with drive-through takeout facilities.

RETAIL STORE means a building or portion of a building where goods are offered to the general public for retail sale and does not include a Liquor Store.

ROADWAY means the portion of a highway that is improved, designed, or ordinarily used for vehicular traffic.

SCHOOL means a school, where academic, commercial or technical school subjects are taught or which is maintained for philanthropic or religious purposes.

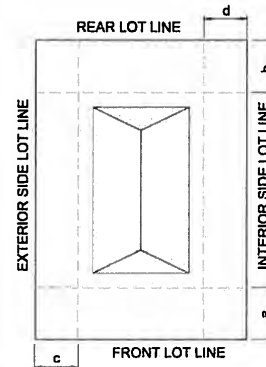
SCREENING means a continuous fence, wall, compact evergreen hedge or combination thereof, supplemented with landscape planting.

SECONDARY SUITE means a second, self-contained dwelling unit with private access, its own kitchen and bathroom, and located within a single-unit dwelling, within a detached accessory building or within a townhouse dwelling unit as permitted in the CD-40 Zone, complying with the requirements of section 4.5 of this Bylaw.

SETBACK, FRONT means that portion of a Lot between the front lot line and a parallel front setback line which intersects the two side lot lines at such position that the shortest distance measured perpendicular to the setback line, from the setback line to the front lot line, is equal to the minimum distance required for the front setback of a principal building under this Bylaw. Where the front face of a principal building abuts the front setback line, it shall be measured at the building foundation.

SETBACK, REAR means that portion of a Lot between the rear lot line and a parallel rear setback line which intersects the two side lot lines at such position that the shortest distance measured perpendicular to the setback line, from the setback line to the rear lot line, is equal to the minimum distance required for the rear setback of a principal building under this Bylaw. Where the rear face of a principal building abuts the rear setback line, it shall be measured at the building foundation.

SETBACK, SIDE means that portion of a Lot between the exterior or interior side lot line and a parallel exterior or interior side setback line which intersects the front and rear lot lines at such position that the shortest distance measured perpendicular to the setback line, from the setback line to the exterior or interior side lot line, is equal to the minimum distance required for the exterior or interior side setback of a principal building under this Bylaw. Where the side face of a principal building abuts the exterior or interior side setback line, it shall be measured at the building foundation.



Example of Setbacks

a = Front Setback

b = Rear Setback

SHIPPING CONTAINER means a metal transport container with an assigned GVW weight. It is designed for and customarily associated with road, rail or ocean transport with a maximum dimension of eight feet by forty feet by eight feet high. (*Bylaw 2303, 2013*)

SLEEPING UNIT means one or more habitable rooms containing facilities for living and sleeping, occupied or intended to be occupied by boarders, but does not include facilities for cooking or eating.

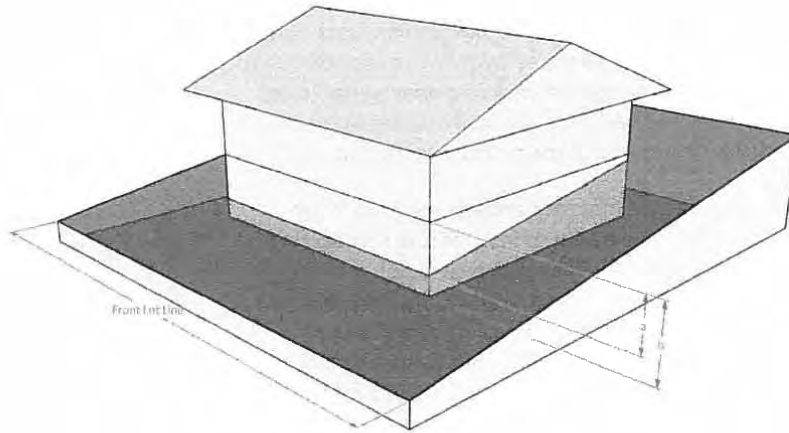
SMALL SCALE MANUFACTURING means small scale activities, home crafts or occupations provided that the activity does not:

- (a) create a nuisance by reason of sound, sight, smoke or smell;
- (b) involve storage exterior to a building of any materials used directly or indirectly in processing or resulting from the processing of any product of such craft or occupation, unless the materials are screened from view by landscaping, berming or a tight board fence. This excludes an industrial use, wrecking or salvaging yard and log sort operations. (*Bylaw 2190, 2011*)

STORAGE YARD means an area outside a building where contractors' or construction materials, public service and utility equipment, or other materials, vehicles, equipment or machinery are stored, sold or distributed; excludes an automobile wrecking yard, or a junk yard.

STOREY means that portion of a building situated between the top of any floor and the ceiling above it, excluding a basement.

STOREY, FIRST means the first storey of a dwelling that is above a basement or crawl space or in which the floor is not more than 1.5 meters (4.9 feet) above the Front Height Datum Point.



First Storey, where $a < 1.5m$

STREET FURNITURE means amenities that are placed or developed on the sidewalk that are intended to enhance the pedestrian experience such as benches and landscape planters.

STRUCTURE means any construction fixed to, supported by, or sunk into land or water; including concrete pads for mobile or modular homes and swimming pools, but excluding fences and walls less than 1.22 metres (4 feet) in height, concrete and asphalt paving, underground septic fields, communication towers, ski lift towers and water slides.

STUDENT AND FACULTY HOUSING means housing specifically occupied by students attending and faculty working at the University.

SUBDIVISION means the division of land into two or more lots whether by plan, apt descriptive words, or otherwise, and includes a subdivision pursuant to the Strata Property Act.

TEMPORARY BUILDING means a building that is intended to be used for a period of time not exceeding one year from the date of issuance of a building permit, after which time it must be removed from site. It does not include construction site temporary buildings which must be removed prior to occupancy of the building where the construction has taken place. (*Bylaw 2303, 2013*)

TOURIST BUREAU means an accessory use within a building in which tourism-related information is provided to the public, and includes without limitation use by outdoor recreation activity providers such as hiking, climbing, bike guides, local service organizations and clubs.

TRADE CONTRACTOR FACILITIES means a building or land used for the offices, storage, or shops of trade contractors.

TRANSITIONAL HOUSING means affordable, supported and independent housing for individuals making the transition from homelessness to permanent independent living. Transitional Housing accommodates stays from 30 days to 24 months. Transitional housing may provide a range of training and support services and may also include, but is not limited to, an Assisted Living Facility

or Community Care Facility operated by a licensee under the *Community Care and Assisted Living Act. (Bylaw 2315, 2011)*

UNIVERSITY means academic, administrative, recreational, parking, research and development, and maintenance facilities customarily associated with a post-secondary institution.

UNIVERSITY VILLAGE CENTRE means those lands identified on Schedule B-2 of this Bylaw which provide for the assembly of educational, social, recreational and commercial uses as permitted under Section 20.1 intended to service the needs of students, faculty and the public.

URBAN BEEKEEPING means the keeping, owning, or maintaining of beehives on a lot, occupied by a resident beekeeper. This does not include land zoned for agricultural use. *(Bylaw 2303, 2013)*

URBAN HEN means a domesticated female chicken that is at least 4 months old that is kept on a lot, occupied by a resident. This does not include land zoned for agricultural use. *(Bylaw 2303, 2013)*

USEABLE OPEN SPACE means a compact, level, unobstructed area or areas, providing maximized access to sunlight, having no dimension less than 6.10 metres (20 feet), no slope greater than 5 percent to ensure universal access, and being available for the safe and convenient use by the development's occupants for recreation or leisure activities and excludes areas used for off street parking, off street loading, service driveways and the required front setback.

VEHICLE FUELING STATION means a gasoline service station or an alternative fuel service station. *(Bylaw 2303, 2013)*

VETERINARY CLINIC means any building, structure or premises in which the business of treatment or diagnosis of animals is carried on.

WAREHOUSE means a building used for the receiving and storage of goods or personal property for compensation and includes the storage of goods by a distributor or supplier who markets goods for retail sale at other locations, but excludes retail sales from the site.

WHOLESALE means the sale of goods to retail operators or to other wholesale operators or to contractors or manufacturers for resale or for incorporation into other products.

WILDLIFE means a bear, cougar, coyote or wolf.

WILDLIFE ATTRACTANT means any substance or material, with or without an odour, which attracts or is likely to attract Wildlife; and without limitation includes food or other edible products, whether intended for humans, animals, or birds, grease, oil, antifreeze, paint, petroleum products, and compost other than grass clippings, leaves or branches;

WRECKED VEHICLE means all or any part of a vehicle which is not validly registered and licensed in accordance with the Motor Vehicle Act, or is incapable of moving under its own power and all or any part of a boat which is inoperable, unseaworthy or in a dilapidated state.

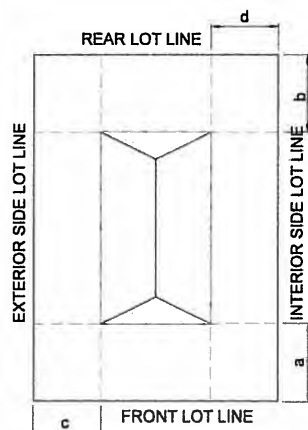
WRECKING OR SALVAGING YARD means any building or land used for the wrecking, salvaging, dismantling or disassembly of vehicles, vehicle parts, vehicle frames or vehicle bodies or where vehicles not in operable condition, or used parts of motor vehicles are stored. Also means any building or land where a wrecked vehicle, junk, waste, used building materials, scrap metal,

discarded or salvaged materials are bought, sold, exchanged, stored, baled, packed, disassembled, dismantled or handled.

YARD, FRONT means that portion of a lot between the front lot line and a line extending along the front face of a principal building to the side lot lines.

YARD, REAR means that portion of a lot, between the rear lot line and a line extending along the rear face of a principal building to the side lot lines.

YARD, SIDE means that portion of a lot extending from the front yard to the rear yard, between the side lot line and a line extending along the side face of a principal building.



Example of Yards

a = front yard

b = rear yard

c = exterior side yard

d = interior side yard

SECTION 2 | APPLICATION, COMPLIANCE AND SEVERABILITY

2.1 APPLICATION

This Bylaw shall apply to all land, the surface of water, buildings, and structures within the boundaries of the District of Squamish subject to the provisions of other Provincial and Federal statutes, except those lands identified in Schedule E of this Bylaw.

2.2 COMPLIANCE

Subject to the provisions of the Local Government Act respecting non-conforming uses, no building, structure or land, including the surface of water, shall be used or occupied, and no building or structure or part thereof shall be erected, constructed, reconstructed, moved or structurally altered except in conformity with this Bylaw.

2.3 SEVERABILITY

Any section, sub section, sentence, clause or phrase of this Bylaw which is for any reason held to be invalid by the decision of any Court of competent jurisdiction, may be severed from the balance of this Bylaw without affecting the validity of the remaining portions of this Bylaw.

SECTION 3 | ADMINISTRATION AND ENFORCEMENT

3.1 ADMINISTRATION

- (a) The Administrator, Clerk, Deputy Clerk, Community Planner, Building Inspector, License Inspector, Bylaw Enforcement Officer, Approving Officer, Public Works Director and their designates and any other person appointed by the Council are hereby authorized to administer this Bylaw.
- (b) Persons appointed under Sub-Section (a) may enter any property subject to this Bylaw at all reasonable times for the purpose of ascertaining whether this Bylaw is being observed.

3.2 VIOLATION

- (a) No person shall contravene or suffer or permit any act or thing to be done in contravention of this Bylaw.
- (b) No person shall prevent or obstruct any official appointed under Section 3.1 from the carrying out of their duties under this Bylaw.

3.3 PENALTY

- (a) Every person who violates any of the provisions of this Bylaw or who suffers or permits any act or thing to be done in contravention of this Bylaw, or who neglects to do or refrains from doing any act or thing thereby violating any of the provisions of this Bylaw, shall be liable to the penalties hereby imposed;
- (b) Any person who violates any of the provisions of this Bylaw shall upon summary conviction thereof be liable to a penalty of not more than Ten Thousand Dollars (\$10,000.00);
- (c) Each day that violation of this Bylaw is caused to continue, constitutes a separate offense; and
- (d) Without limiting other remedies available to the District in the event of non-compliance, this bylaw may be enforced by means of a ticket issued under the *District of Squamish Municipal Ticket Information Bylaw No.1832, 2004* as amended or replaced from time to time. (*Bylaw 2235, 2012*)

3.4 UNIT OF MEASURE

- (a) All units of measure contained within this Bylaw are metric (SI) Standards. The units of measure which are bracketed are in imperial measurements and are inserted for convenience only and do not form a part of this Bylaw.

SECTION 4 | GENERAL REGULATIONS

4.1 Permitted Uses

No land, the surface of water, buildings or structures in any zone shall be used by the owner, occupier or any other person for any use except as specifically permitted in the zone in which it is located as set out in Sections 6 - 37 of this Bylaw.

4.2 USES PERMITTED IN ALL ZONES

The following uses shall be permitted in any zone:

- (a) repairs to any building or structure, provided that all such repairs comply with regulations of the zone in which it is situated;
- (b) temporary structures or buildings that are erected for the purposes of providing temporary office space during construction of a new building or structure, provided that the temporary structure or building is removed within thirty (30) days of the completion of the principal building or structure;
- (c) temporary occupancy of structures or buildings that are either erected or existing for the purposes of providing temporary living accommodation during the construction of a new residential building, provided that:
 - (i) the owner of the lot is in receipt of a building permit to construct a new building;
 - (ii) the owner of the lot first enters into a covenant registered on title in a form acceptable to the District:
 - a) covenanting to demolish, remove or convert to a non-residential accessory building or structure the temporary or existing building or structure forthwith upon completion of the new building or structure, or at the request of the District, whichever event is earlier;
 - b) authorizing the District to cause the demolition if for any reason the owner neglects or refuses to do so within 30 days of being requested to do so and obliges the owner to reimburse the District for all costs incurred in so doing, and;
 - c) authorizing the District to withhold an Occupancy Permit for the new building or structure until such time as the first dwelling has been demolished, removed or converted;

- (iii) the owner of the lot provides, in a form satisfactory to the District, security to meet the reasonably anticipated costs of demolition, removal, or conversion of the temporary or existing building or structure, if the District causes it to be demolished, removed or converted.
- (d) water, sewer and drainage facilities;
- (e) pipelines;
- (f) electrical, power, cablevision, and telephone transmission lines;
- (g) street lighting fixtures;
- (h) street furniture;
- (i) all public streets and lanes;
- (j) government provided recycling bins;
- (k) the temporary use of a building or part thereof as a voting place for government elections, referenda, plebiscites or census, provided that the time period of such use does not exceed sixty (60) days;
- (l) the temporary use of a building or part thereof as campaign headquarters for political candidates;
- (m) interpretive signage;
- (n) parks and playgrounds;
- (o) urban agriculture; and
- (p) trails;

4.3 ACCESSORY RESIDENTIAL DWELLINGS

- (a) An accessory residential dwelling unit shall have a maximum gross floor area of 56 square metres;
- (b) Notwithstanding Section 4.4(a), an accessory building may be used as an accessory residential dwelling unit within the RE and I-3 zones; and
- (c) Notwithstanding that a lot or a building may have been subdivided into strata lots, a maximum of 1 accessory residential dwelling shall be permitted on that lot or in that building.

4.4 ACCESSORY BUILDINGS, STRUCTURES AND USES

- (a) An accessory building or structure shall not be used as a dwelling unit, except as otherwise provided for in this Bylaw;
- (b) One accessory building or structure is permitted per lot in all zones, except as otherwise provided for in this Bylaw. The gross floor area of the accessory building on a lot shall not exceed in total:
 - (i) 60 m² (645 square feet) in the RS, RMH and RL-1, C, UC and RE zones;
 - (ii) 140 m² (1,507 square feet) in the RM, RL-2 and I zones; or
 - (iii) except as otherwise provided for in this Bylaw; (*Bylaw 2303, 2013*)
- (c) In addition to Section 4.4 (b), up to 5 buildings, each not exceeding 10 square metres in gross floor area, may be permitted on a lot provided that all the regulations in this section and in the appropriate zone can be satisfied. (*Bylaw 2303, 2013*)
- (d) All accessory buildings and structures, including accessory buildings and structures permitted on a temporary basis, shall satisfy the following conditions: (*Bylaw 2235, 2012*)
 - (i) accessory buildings and structures shall not be located in a front yard;
 - (ii) except for garages and carports in residential zones, accessory buildings shall be located not less than 1.52 metres (5 feet) from any side and rear lot line, except in the case of commercial and industrial zones where accessory buildings need not be separated from a principal building by a particular distance; (*Bylaw 1389, 1996*)
 - (iii) garages and carports in residential zones shall be located at least 0.61 metres (2 feet) but not more than 2.44 metres (8 feet) from a rear lot line when there is a rear lane or 1.52 metres (5 feet) but not more than 2.44 metres (8 feet) from a rear lot line where there is no rear lane, 1.52 metres (5 feet) from a side lot line and at least 4.9 metres (16 feet) from a Principal Building, including porches and balconies;
 - (iv) on corner lots, accessory buildings and structures shall be placed so as to retain the same required exterior side yard setback as the principal building;
 - (v) (*Repealed by Bylaw 2303, 2013*)
 - (vi) notwithstanding section 4.4(d)(v) where a secondary suite is located above a garage, the GFA of a detached accessory building shall not exceed 116 square meters (1,200 sq. ft.); and

- (vii) accessory buildings or structures used as greenhouses shall be located not less than 1.52 metres (5 feet) from an interior side or rear lot line.
- (e) A permanent accessory building or structure may be erected only after a principal building has been completed on the same lot, except where that accessory building or structure is intended to contain a secondary suite for the purposes of providing temporary living accommodation during the construction of the principal building, or as otherwise provided for in this Bylaw.
- (f) No accessory building shall exceed a height of 4.58 metres (15 ft.) unless it contains a permitted secondary suite, in which case the maximum height is 6.6 metres (21.65ft). (*Bylaw 2235, 2012*)
- (g) Accessory buildings shall not cover more than 30% of the area of the rear yard.
- (h) In the Rural 1 and Rural 2 zones all accessory buildings shall be located not less than 3.04 metres (10 feet) from a rear, interior side or exterior side lot line.

4.5 SECONDARY SUITE

A Secondary Suite Use shall:

- (a) be permitted in all zones which permit a single-unit dwelling;
- (b) be permitted in townhouse dwelling units within the CD-40 Zone;
- (c) will be permitted only on lots serviced with a community water system and a community sewer system;
- (d) be limited to one such use per single-unit dwelling as follows:
 - (i) above a detached accessory building in which case the maximum gross floor area of the secondary suite is 56 m²;
 - (ii) in a principal dwelling to a maximum of 90 m² (968.8 square feet) or 40% of the gross floor area of the building whichever is less; (*Bylaw 2235, 2012*)
- (e) be limited to one such use per townhouse dwelling unit within the CD-40 zone to a maximum of 90 square metres (968.8 square feet) or 40% of the gross floor area of the dwelling unit, whichever is less;
- (f) provide one (1) additional off-street parking space;
- (g) form a single real estate entity with the single unit dwelling unit or the townhouse dwelling unit. No strata titling will be permitted;

- (h) Notwithstanding Section 4.4 (a), only be located in a detached accessory building where:
- (i) a continuous unobstructed lighted pathway of not be more than 45 m in length, consisting of a minimum width of at least 900 mm and vertical headroom clearance of at least 2.1 m, is provided from the fronting street to the principal entrance serving the suite and to the rear lane where a lane exists, or on a corner lot;
 - (ii) an exterior strobe light is provided and maintained above the principal entrance of the detached accessory building, designed such that the strobe light will activate at the same time as a smoke alarm is activated within the detached accessory building; and,
 - (iii) the address for the detached accessory building is visible from the street, mounted on the building or a signpost adjacent to the path of travel leading to the accessory building.
- (i) not be permitted where the single-unit dwelling contains:
- (i) an accessory boarding use;
 - (ii) a home occupation, except home occupation office;
 - (iii) a bed and breakfast use. (*Bylaw 2235, 2012*)
- (j) not be used for home occupation, except home occupation office; and (*Bylaw 2235, 2012*)
- (k) not be permitted in two unit dwelling units.

4.6 FENCING

- (a) Subject to the visual clearance provision of Section 4.8, any fence or landscape screen located in the Residential, Multiple Unit or Comprehensive zones shall not exceed a height of 1.83 metres (6 feet), and where located between the front lot line and the front face of the building shall not exceed a height of 1.22 metres (4 feet). Within the Residential, Multiple Unit or Comprehensive zones fences shall be limited to stained or painted wood, brick, stone, or chain link;
- (b) Subject to the visual clearance provision of Section 4.8, all industrial activity or storage not contained within a building or structure within Industrial, Resource or Comprehensive zones, shall be enclosed by a fence or landscape screen that is a minimum of 1.83 metres (6 feet) in height but shall not exceed 3.0 metres (9.8 feet) in height;

(c) Barbed wire and razor wire fencing shall not be permitted in any zone, except within the Rural, Institutional, Resource, and Industrial zones, in which case a maximum of 3 strings of barbed wire or razor wire shall only be located on a fence above a height of 1.83 metres; (*Bylaw 2235, 2012*)

(d) Electric security fencing:

- (i) may be installed within a fenced portion of a property that has an existing non-electrified fence that is a minimum of 1.2m in height, forms a continuous enclosure around the electric security fencing, and is constructed in such a manner as to prevent unauthorized entry;
- (ii) must display unobstructed warning signage on a yellow-coloured background that clearly indicates the risk of electric shock, installed at ten metre (32.8 feet) intervals around the electric security fencing;
- (iii) may not involve the electrification of barbed or razor wire;
- (iv) must only use controllers that meet the requirements of any applicable Canadian Standards Association standard;
- (v) may not conduct current in excess of 10,000 volts; and
- (vi) In the case of electric security fencing to prevent wildlife from accessing urban hens, beehives, fruit or other food sources:
 - a) Urban hen coops and pens, as well as beehives, must be surrounded by electric security fencing at a minimum distance of 1m from hen coop, pen or beehive;
 - b) For beehives, the non-electrified perimeter fence identified in 4.6 (d) (i) must be 1.8m in height;
 - c) A minimum of six strands of 12.5 gauge high tensile galvanized wire is required, with the bottom wire no more than 5 cm from the ground and subsequent wires spaced at an interval of no greater than 25 cm apart, with alternating positive and negative strands, with the top wire at the height of no less than 110cm from the ground;
 - d) Electric fence shall be programmed to a minimum conduction of 6000 volts to a maximum of 10,000 volts;
 - e) Corner posts and gate areas must be braced to ensure posts will not bend or pull from the ground when the wire is pulled to the appropriate tension. Install guy wires or inside angle braces to alleviate any tightening/loosening problems; and

- f) Ground the system using three (3) 16mm ground rods, 2-3 m deep and spaced at least three (3) m apart, connected to the negative output terminal of the fence charger by ground clamps. Place the rods in moist soil when available which insures a good ground. (*Bylaw 2303, 2013*)

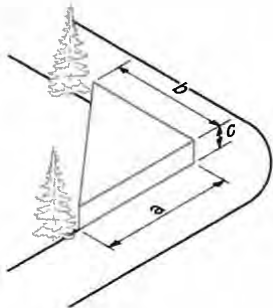
4.7 SCREENING

- (a) Where a lot is developed for a Commercial, Industrial, or Institutional use, and where such a lot shares a lot line(s) with a lot that is within a Residential zone, the owner of the non-residential lot shall provide a fence or landscape screening along such property line(s) of not less than and not more than 1.83 metres (6 feet) in height, except where the screening consists of plant material in which case there shall be no maximum height;
- (b) Notwithstanding sub-section 4.7 (a), a fence or landscape screening will not be required along the shared lot line in cases where:
 - (i) a building is built on the lot line; or
 - (ii) a Residential use is developed on a lot that is zoned Commercial, Industrial, or Institutional at the time of adoption of this Bylaw.
- (c) Where a lot is developed for a Commercial, Industrial, or Institutional use and where such a lot is separated by a lane from a lot that is:
 - (i) within a Residential zone; or
 - (ii) occupied with a single-, two-, or multiple-unit dwelling; or
 - (iii) the owner of the non-residential lot shall provide a fence or landscape screening along the entire lot line abutting the lane of not less than 1.22 metres (4 feet) in height, and not more than 1.83 metres (6 feet) in height, except where the screening consists of plant material, in which case there shall be no maximum height.
- (d) Notwithstanding sub-section 4.7 (c), a fence or landscape screening will not be required for the points of vehicular ingress and egress and for a distance of 3.05 metres (10 feet) on either side of the points of ingress and egress.
- (e) Garbage containers exceeding 0.5 cubic metres (0.65 cubic yards) in capacity shall be located so as not to be visible from any highway other than a lane, unless such a container is completely concealed from view by a fence with a gate or landscape screening.

- (f) Landscaped screens where required by this Bylaw shall be maintained at all times by the owner of the lot on which they are required.

4.8 VISIBILITY

- (a) On a corner lot in any zone, there shall be no obstruction to the line of vision above the height of 0.46 metres (1.5 feet) of the established grade of a highway within the sight triangle, being a triangular area formed by extending a 6.10 metre (20 feet) boundary along the lot lines from the point of the exterior corner intersection of the lot lines and a line connecting these two points.



Example of Sight Triangle

$$a = 6.10 \text{ m}$$

$$b = 6.10 \text{ m}$$

- (b) Where a driveway bisects a sidewalk, there shall be no obstruction to the line of vision above the height of 0.46 m (1.5 ft).

4.9 UNDERSIZED LOTS

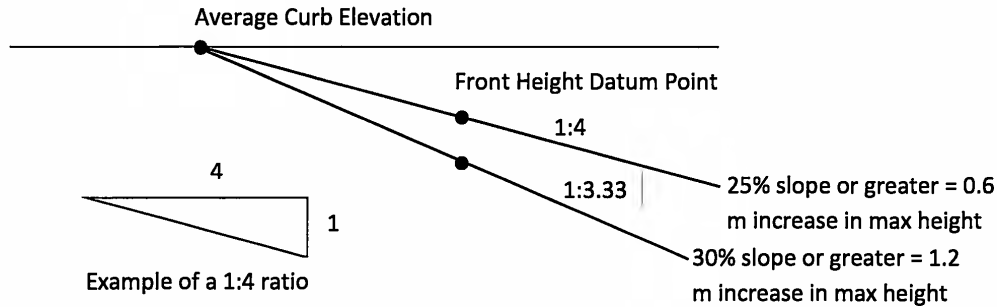
Where a lot of land shown on a plan duly registered in the Land Title Office prior to the effective date of this Bylaw does not contain the minimum lot size required in the zone in which the lot is located, the lot may be used subject to all other requirements of the zone being met.

4.10 HEIGHT OF BUILDINGS AND STRUCTURES

- (a) The following structures are exempt from the height requirements of this Bylaw: church spires, chimneys, flagpoles, masts, silos, satellite dishes, antennae, water

tanks, spire, steeple, belfries, dome, cupola, monuments, transmission towers, elevator penthouses, screened ventilation machinery, and structures required for a public service use.

- (b) Where the front height datum point is below the average street curb elevation so that a line joining the two average elevations inclines at a slope of 25% or greater below the horizontal, then the allowable height of the principal building shall be increased by 0.6m (2 ft.) for a slope of 25% to 29% or 1.2m (4 ft.) for a slope of 30% or greater.



4.11 PROJECTIONS INTO REQUIRED SETBACK

The following features of the building are exempt from the siting requirements of this bylaw:

- (a) eaves, eaves which incorporate a guard of maximum 4", sills, chimneys, fireplaces, bay windows, sunshades, or other similar features not incorporating floor area, provided that such projections do not exceed 0.61 metres (2 feet) into the front, rear and side setback area. Eaves may extend to a maximum of 0.76 metres (2.5 feet); (*Bylaw 2303, 2013*)
- (b) steps, landings, outside basement or cellar entrances, that are at- or below finished grade not to exceed a projection of 2.04 metres (6.5 feet) into the front, rear and exterior side setback areas;
- (c) steps and landings down from rear or side decks or patios not to exceed a projection of 2.04 meters (6.5 feet) into the front, rear and exterior side setback areas;
- (d) an open and uncovered terrace, deck or patio no more than 0.62 metres (2 feet) above finished grade, except as otherwise provided for in this Bylaw;

- (e) an open and uncovered front entry porch, stoop or stairs no more than 2 m (6.5 feet) above finished grade. This feature may include any required railings, not to exceed a projection of 3 m (9.8 ft.) into the front setback area;
- (f) ramps providing an accessible route for individuals with disabilities with a slope greater than 1:20 but not more than a slope of 1:12 and constructed in accordance with the British Columbia Building Code;
- (g) an uncovered swimming pool, provided that such pool not be constructed nearer than 3.0 metres (9.84 feet) to any lot line unless the pool is constructed with its surface at finished grade, in which case, the projection shall not be nearer than 1.5 metres (5 feet) to any lot line;
- (h) arbours and trellises, ornaments or similar architectural features;
- (i) freestanding lighting poles, clothes line poles, warning devices, antennas, masts, utility poles, wires, flagpoles, signs and sign structures; children's play areas, and provided that the exterior insulation and weather protection wall system of the principal building has been approved by a Professional Engineer, exterior cladding or exterior solid wall systems up to a maximum thickness of 0.165 metres (6.5 inches).

4.12 UTILITY SITING

The following requirements relate to siting electrical, mechanical or similar infrastructure on a lot:

- (a) Satellite dishes and similar equipment shall not be permitted in the front yard of any property occupied with a residential use with the exception of properties within the Rural zones. *(Bylaw 2303, 2013)*

4.13 KEEPING OF ANIMALS

No animals, other than household pets and guard dogs, may be kept in any zone, unless specifically permitted in that zone.

4.14 SIGNS

All signs shall comply with the District of Squamish Sign Bylaw.

4.15 AGRICULTURAL LAND COMMISSION ACT

Where land is designated as an "Agricultural Land Reserve" it is subject to the Agricultural Land Commission Act regulations made pursuant to the Agricultural Land Commission Act, and relevant Orders of the Provincial Agricultural Land Commission made pursuant to *the Agricultural Land Commission Act*.

4.16 MIXED COMMERCIAL AND RESIDENTIAL USES

Where a lot is used for a combined Commercial and Residential use, unless otherwise specified herein, the residential use shall be permitted only in conformity with the following provisions:

- (a) the residential units are contained in the same building as the commercial use, except where the commercial use is a vehicle fueling station or tourist accommodation, in which case the dwelling unit may be in a separate building from the Commercial use; (*Bylaw 2303, 2013*)
- (b) the residential units are located over the commercial use, except as otherwise provided for in this Bylaw;
- (c) the residential use has a separate direct at-grade entrance to the outside of the Building, which may only front onto a front or exterior side lot line but shall not exceed 0.25 times the width of the exterior front or exterior side face of the first story;
- (d) the floor on which any residential dwelling units are located shall be used exclusively for residential purposes within all levels above the first; and
- (e) with the exception of entrance, lobby, or spaces for vertical circulation, no residential uses are permitted on the first story.

4.17 SUBDIVISION REQUIREMENTS

- (a) the Approving Officer may exempt, where a lot of land fronts on a highway, a person proposing to subdivide land from any prescribed minimum frontage requirement under this Bylaw or from the limitation provided under Section 944(1) of the Local Government Act after duly considering the following:

- (i) whether the proposed lot is capable of being further subdivided under existing regulations;
 - (ii) whether an attempt is being made to assemble land which conforms substantially with the Official Community Plan;
 - (iii) whether the lot with insufficient frontage is for municipal or public use; and
 - (iv) whether unusual soil conditions exist or may develop as a result of the proposed subdivision.
- (b) the area within the access strip of a panhandle lot in a residential zone shall not be included in the calculation of the area of the lot.
- (c) where two or more lots are to be re-subdivided after consolidation, and where the proposed subdivision will result in the same or in a lesser number of lots, the Approving Officer may approve the subdivision notwithstanding that the lots created are less in area or in frontage than the minimum prescribed herein, provided that none of the lots to be created by the subdivision is less in area than the smallest of the existing lots of land being subdivided existing before consolidation.

4.18 HOME OCCUPATION

Home Occupations, where permitted in this Bylaw, shall satisfy all of the following conditions:

- (a) shall be carried out wholly within the principal dwelling unit or within a permitted accessory building. The area used for all home occupation shall not exceed 10% of the gross floor area of the principal dwelling unit to a maximum gross floor area of 23.23 square meters (250 square feet) except in the case of a residential child care facility; (*Bylaw 2303, 2013*)
- (b) shall not discharge or emit odorous, toxic, or noxious vapours or matter, heat, glare, radiation, electrical interference, or noise;
- (c) shall be carried on with no exterior indication of the home occupation as a result of outdoor storage, display, flood-lighting, or signs, except as permitted in the Sign Bylaw;
- (d) shall not use materials or processes that produce flammable or explosive vapours or gases under ordinary temperatures;

- (e) shall not involve the outdoor storage of materials used directly or indirectly for the processing or resulting from the processing of any product of such occupation;
- (f) shall not require more than 2 deliveries per day to be made by commercial vehicles or trailers;
- (g) shall provide at least 1 off-street parking space for each full time employee or equivalent, in addition to the off-street parking requirements in respect of residential uses as outlined in Section 40;
- (h) shall be conducted by at least one resident of the dwelling unit to which it is accessory and not more than 1 non-resident person shall be employed in such use on the premises at any one time; (*Bylaw 2235, 2012*)
- (i) shall be connected to the District's water and sewer systems, and if such systems are not available, the owner or occupier shall obtain approval from the Coast Garibaldi Health Unit for sewage disposal, and prove to the Building Inspector that domestic water exists to satisfy acceptable quantity and quality standards; (*Bylaw 2235, 2012*)
- (j) home occupation residential is permitted in all residential dwelling units which are a single-unit or two-unit dwellings, and home occupation office is permitted in all townhouse and apartment dwellings; (*Bylaw 2235, 2012*)
- (k) holds a District Business License; and (*Bylaw 2235, 2012*)
- (l) shall not involve Small Scale Manufacturing where lot size is less than 2.02 hectares (5 acres). (*Bylaw 2235, 2012*)

4.19 KEEPING OF WRECKED VEHICLES

The keeping of wrecked vehicles is not permitted in any zone unless specifically provided for in that zone, or unless the keeping of wrecked vehicles is required for the operation of business as an accessory use and in such case the wrecked vehicles shall be completely enclosed within a building or within a wall or fenced area with no wrecked vehicles to be visible from a highway, and further provided that the total number of wrecked vehicles stored within the walled or fenced area shall not exceed five (5) at any time.

4.20 HIGHWAY 99 FRONTAGE

Notwithstanding the Siting Requirements contained within each zone, no building or structure, excluding signs, shall be located within 4.57 metres (15 feet) of the Highway 99 right of way.

4.21 RECREATIONAL VEHICLE LENGTH OF STAY PROVISION

No recreational vehicle shall be located in a campground (or recreational vehicle park) for more than thirty (30) consecutive days in any six month period, unless otherwise provided for in this Bylaw. (*Bylaw 2235, 2012*)

4.22 ADULT VIDEO RENTALS OR SALES

The rental of adult videos is permitted only as an accessory use to and located within a retail store, and the sale of adult videos is permitted only in premises in which a general retail sales use is occurring.

4.23 STORAGE

- (a) No lot in a Residential zone shall be used for the outdoor storage of wrecked vehicles or as a wrecking yard; and
- (b) A person must not store any refuse that is a Wildlife attractant in such a manner that it is accessible to wildlife, except as permitted by the District of Squamish Wildlife Attractant Bylaw No. 2053.

4.24 FLOOD CONSTRUCTION LEVEL

Enclosed spaces in residential premises other than concealed parking areas and entry foyers, the floor area of which is below any flood construction level established for the premises by a professional engineer, shall be limited to a ceiling height of 1.5 meters (4.9 feet).

4.25 GROSS FLOOR AREA

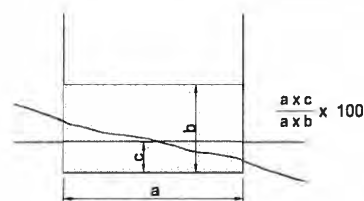
- (a) For Residential, Rural and Resource zones gross floor area shall be measured to the exterior surface of the exterior walls but exclude:

- (i) Exterior Cladding and Exterior Solid Wall Systems up to a maximum thickness of 0.165 metres (6.5 inches) provided that an exterior insulation or weather protection wall system has been approved by a Professional Engineer;
- (ii) That portion of a dwelling that is dedicated for a vertical service shaft extending from the mechanical service area to roof for the purposes of solar hot water heating;
- (iii) That portion of a building that is dedicated for a vertical service shaft for an elevator;
- (iv) That portion of the dwelling used for mechanical space, not to exceed 4.65 Square meters, provided that at least one of the following mechanical equipment is located within the space: ENERGY STAR furnace with a minimum 95% AFUE (thermal efficiency), ENERGY STAR condensing Boiler with a minimum 90% AFUE (thermal efficiency), ENERGY STAR condensing domestic hot water storage tank with a minimum 94% thermal efficiency, ENERGY STAR instantaneous condensing domestic hot water system with a minimum energy factor of 0.90, ENERGY STAR heat recovery ventilator, CAN /CSA C448 compliant geothermal heat exchange components, or CAN/CSA compliant solar hot water system.;
- (v) Garages to a maximum floor area exclusion of 55.7 sq. m. (600 sq. ft.);
- (vi) That portion of a building dedicated to a common stairwell and excludes stairs within single occupancy unit;
- (vii) Covered balconies, decks, patios and porches that are open on three sides;
- (viii) Floor area with ceiling heights of less than 1.5 m (4.9 ft.);
- (ix) The floor area of accessory buildings excluding suites, other than garages, to a maximum floor area exclusion of 50 square metres (538 square feet); and
- (x) The percentage of the floor area in the basement that is below the height datum as determined by the following calculation:

That portion of the basement floor area situated between the top of the basement floor and the height datum

That portion of the basement floor area situated between the top of the basement floor and the ceiling above it

$\times 100$



(Bylaw 2235, 2012)

(b) For Multiple-Unit zones, gross floor area shall be measured to the exterior surface of the exterior wall and not include:

- (i) Unenclosed balconies, unenclosed decks, unenclosed patios, and unenclosed porches;
- (ii) Common stairwells, common elevator shafts, common corridors, common recreation or service facilities, common garbage and recycling facilities, and Class A bicycle parking facilities;
- (iii) Those portions of the building situated below the height datum that are used for parking, storage or mechanical spaces, but not habitable spaces; and
- (iv) Concealed parking areas.

(c) Notwithstanding Section 4.25 (b), for buildings in Multiple-Unit zones, gross floor area shall exclude a maximum of 0.165 metres (6.5 inches) of thickness of the exterior cladding and exterior solid wall systems, provided that an exterior insulation or weather protection wall system has been approved by a Professional Engineer.

(d) For the zone C-1, gross floor area shall be measured to the exterior surface of the exterior wall and not include areas used for storage and warehouse, those portions of the building situated below the height datum and enclosed and secure employee Class A bicycle parking facilities.

4.26 RETAINING WALLS

- (a) Retaining walls on all lots, except those required as a condition of subdivision approval, must not exceed a height of 1.83 metres (6 feet) measured from the base of the wall;
- (b) Multiple retaining walls must be constructed so that the retaining walls are spaced to provide at least a 1.22 metres (4 feet) horizontal separation between them;
- (c) Subject to Section 4.6, if a fence is constructed on top of a retaining wall within 1.22 metres (4 feet) of a front or exterior side lot line, the combined height of the fence and the wall shall not exceed 2.44 metres (8 feet);
- (d) No retaining wall over 1.83 metres (6 feet) in exposed height may be located closer than 2.44 metres (8 feet) to a front, exterior side or rear lot line; and

- (e) The 1.83 metres (6 feet) limitation on retaining wall height does not apply to constructed inclined walls, such as stacked rock walls.

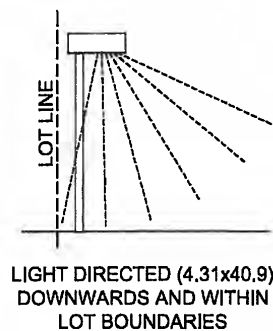
4.27 LANDSCAPING

- (a) On a lot located within a Multiple Unit, Commercial, Industrial, Institutional, or Comprehensive zone, any part of such lot which is not used for buildings, exterior display areas, parking or loading facilities shall be fully landscaped and properly maintained in a permeable state;
- (b) On a Lot located in a Residential zones a minimum of 30% of the total surface area of such lot shall be fully landscaped and properly maintained in a permeable state;
- (c) For the purposes of Sections 4.27 (a) and(b), the following surfaces are not permeable:
 - (i) buildings and structures;
 - (ii) asphalt;
 - (iii) concrete;
 - (iv) grouted pavers; and
 - (v) water surfaces of structures designed to retain water, including swimming pools, reflecting pools, and ornamental ponds, are permeable.
- (d) For all landscape screening, landscaped buffers or other landscaped areas required by this Bylaw for a Multiple Unit, Commercial, Industrial, Institutional, or Comprehensive zone, the following landscape requirements shall apply:
 - (i) Existing landscaped areas of healthy woody plants (trees and shrubs) shall be preserved and protected during construction unless demonstrated to the satisfaction of the Building Inspector that removal is required to accommodate a use, building or structure on the lot or if the plants pose a safety hazard. Existing landscaping or natural vegetation that is to be retained must be protected to the furthest extent of the drip line and the final grading of the site should not alter the natural grade within the root zone more than 20 cm, unless an arborist report indicates otherwise and is approved by the District;
 - (ii) At installation, planted deciduous trees shall be min. 8cm caliper in Commercial zones and min. 6 cm caliper in Industrial, Institutional, Resource, Comprehensive, and Multiple Unit zones;

- (iii) At installation, planted coniferous trees shall have a minimum height of 3.0m in commercial zones and a minimum height of 2.0m in Industrial, Institutional, Resource, Comprehensive, and Multiple Unit zones;
- (iv) New landscape plantings shall consist of native xeric or water-conserving herbaceous and/or woody plant species proven to be enduring in the District of Squamish area and shall exclude invasive species;
- (v) Appropriate means of irrigation, with an emphasis on high-efficiency water reducing systems, shall be provided by the owner of the lot with particular attention paid to adequate watering during the establishment period to ensure survival of the newly planted areas;
- (vi) Landscaping shall make special consideration of Bear Aware criteria for plant selection.

4.28 LIGHTING

All lighting poles, masts, standards or structures shall be oriented on a lot to ensure that no direct rays of light shine upwards or beyond the boundaries of the lot.



4.29 USEABLE OPEN SPACE

- (a) Useable open space may be located on roofs or structures or at finished grade excluding areas used for off street parking, off street loading, service driveways and the required front setback.
- (b) For all Multiple Unit or Comprehensive Development zones, at least 30% of the lot area shall be provided as useable open space in the case of an apartment dwelling and in the case of a townhouse dwelling, at least 40 square metres (431 square feet) of useable open space shall be provided per dwelling unit.

4.30 RENEWABLE ENERGY

- (a) In a Detached or Multiple Unit Residential and Commercial zone, solar energy devices shall be permitted provided that the solar energy device shall:
 - (i) be attached to a principal or accessory building;
 - (ii) not extend beyond the ridgeline of the roof; and
 - (iii) not extend beyond the outermost edge of the roof.
- (b) In an industrial, Rural, Resource and institutional zone, solar energy devices shall be permitted provided that:
 - (i) the device is located on or within the either principal or accessory building in which case the device shall not extend beyond the outermost edge of the roof, or
 - (ii) as a standalone structure subject to the zoning requirements for the principal building on the parcel where the device is located;
- (c) In an Industrial, Resource or P zones, Biomass fuelled boilers and Process Heaters shall be permitted, subject to the requirements for an accessory building or structure established by the particular zone.
- (d) The production of the renewable energy as well as any device used to produce the energy must comply with all other Municipal, Provincial and Federal Bylaws, Statutes and Regulations including but not limited to a Building Permit and BC Building Code Regulations.

4.31 ELECTRICAL VEHICLE CHARGING STATIONS

(Bylaw 2303, 2013)

Electric Vehicle Charging (EVC) Stations conditions of use:

- (a) Notwithstanding Section 41.6 (f), up to six (6) required off-street parking spaces may be designated for EVC station use, subject to registration of a restrictive covenant against the lot on which the shared parking arrangement is or will be located, prior to the commencement of that use;
- (b) Designated parking stalls shall meet all parking design criteria in Section 41.11 of this bylaw;

- (c) A minimum of 50% of the designated stalls for EVC charging may be reserved exclusively for this use 24 hrs per day; the remaining stalls shall also be made available for public use during the identified peak period for parking demand for different classes of use in Table 2, Section 41.6 of this bylaw;
- (d) A minimum of 10% of designated EVC station stalls shall be designed as accessible parking stalls in accordance with Section 41.5 of this bylaw;
- (e) Screening and landscaping in accordance with Sections 4.6 and 4.7 of this bylaw are required to shield electrical transformers, panels or other EVC station equipment; and
- (f) EVC stations shall provide lighting for safety and convenience that is arranged and shielded so that no direct rays of light are oriented upwards or shine beyond the boundaries of the charging area.

4.32 MEDICAL MARIHUANA PRODUCTION

(Bylaw 2235, 2012)

The following requirements apply to any Medical Marihuana production:

- (a) Smells resulting from the use must be confined to the building in which the use occurs so as to avoid adverse effects to persons and neighbouring properties in the vicinity;
- (b) Any structures or structural alterations must adhere to the BC Building Code and to the District of Squamish Building Bylaw requirements, and all enactments applicable to electrical and fire safety;
- (c) Medical Marihuana Production is only permitted in areas of Squamish that are serviced with municipal water, sewer, and sufficient fire-flows; and
- (d) Medical Marihuana Production must not result in increased parking or loading requirements from that permitted in the zone.

4.33 URBAN AGRICULTURE

(Bylaw 2303, 2013)

- (a) The following regulations apply to community gardens

- (i) Community garden use shall be authorized in accordance with all relevant District policies and bylaws.
- (ii) Community gardens must be serviced by and connected to the municipal water system on the same lot as where the community garden is located.
- (iii) Notwithstanding 4.4 (e), accessory buildings and structures for community garden use, including but not limited to storage for materials and tools, a composting facility or greenhouse, are permitted. The siting and size of accessory buildings and structures shall be in accordance with Section 4.4 of this bylaw.
- (iv) Raised garden beds shall be set back a minimum of 5 feet from all lot lines.
- (v) Community garden compost shall only be used for the purpose of composting on-site organics. The compost shall be located in a low foot traffic use location, to ensure limited potential conflict between wildlife and people. Composting and storage shall be in accordance with Section 4.5 of this bylaw.
- (vi) Where a lot is developed for a community garden use and where such a lot abuts a residential use, a fence or landscape screening is required as per section 4.6 (Fencing) and 4.7 (Screening) of the Zoning Bylaw.

(b) The following regulations apply to coops for the keeping of hens. Coops must be:

- (i) No more than 10 m² in floor area;
- (ii) No more than 2 m high;
- (iii) Situated in accordance with the accessory building setbacks identified in Section 4.4;
- (iv) No closer than 3 m from any door or window of any dwelling;
- (v) Situated in a rear yard only;
- (vi) Located at grade level;
- (vii) Constructed to prevent access by wildlife and other animals; and
- (viii) Surrounded with electric fence, per Fencing Section 4.6.

(c) The following regulations apply to beekeeping. Beehives must be:

- (i) Restricted to:
 - a) No more than 2 beehives on all lots under 929 square metres (10,000 square feet) in size;
 - b) No more than 4 beehives on all lots over 929 square metres (10,000 square feet) in size and under 1394 square metres (15,000 square feet) in size;

- c) No more than 6 beehives on all lots over 1394 square metres (15,000 square feet) in size;
 - (ii) Situated in accordance with the accessory building setbacks identified in Section 4.4;
 - (iii) Situated so as to ensure the flight path of the bees is up over the neighbouring houses in order to minimize the volume of bees at ground level;
 - (iv) Positioned so that the beehive entrance faces away from the closest neighbouring property line;
 - (v) Located in the rear yard;
 - (vi) Surrounded with electric fence, per Fencing Section 4.6; and
 - (vii) Have clear, visible signage on the lot warning that bees are present.

SECTION 5 | ESTABLISHMENT OF ZONES

5.1 ZONE DESIGNATION

For the purpose of this Bylaw, the District of Squamish is hereby classified and divided into the following zones:

Designation	Section	Zone	Intent
RS-1	6	Residential 1	The intent of this zone is to accommodate single-unit dwellings on municipal water and sewer.
RS-1A	7	Residential 1A	The intent of this zone is to accommodate single-unit dwellings within the Veterans Land Act (VLA) Subdivision.
RS-2	8	Residential 2	The intent of this zone is to accommodate single-unit dwellings and two-unit dwellings on municipal water and sewer.
RS-3	9	Residential Small Lot	The intent of this zone is to accommodate single-unit dwellings on small lots on municipal water and sewer. <i>(Bylaw 2241, 2012)</i>
RM-1	10	Multiple Unit Residential 1	The intent of this zone is to accommodate low density multi-unit development. <i>(Bylaw 2235, 2012)</i>
RM-2	11	Multiple Unit Residential 2	The intent of this zone is to accommodate medium density multi-unit development. <i>(Bylaw 2235, 2012)</i>
RM-3	12	Multiple Unit Residential 3	The intent of this zone is to accommodate apartment development.
RMH-1	13	Residential Mobile Home Park	The intent of this zone is to accommodate mobile home park development.
RMH-2	14	Residential Modular Home	The intent of this zone is to accommodate single-unit dwelling and modular homes, on municipal water and sewer.
RL-1	15	Rural Residential 1	The intent of this zone is to accommodate rural residential development and accessory uses.
RL-2	16	Rural Residential 2	The intent of this zone is to accommodate rural residential development and accessory uses.
P-1	17	Neighbourhood Civic	The intent of this zone is to accommodate public and civic uses at a scale designed to serve a residential neighbourhood.

Designation	Section	Zone	Intent
P-2	18	Assembly District	The intent of this zone is to provide essential servicing to the District and accommodate government, administrative, recreational, cultural and other related services and facilities which serve the entire District.
P-3	19	Park, Recreational, and Institutional Use	The intent of this zone is to accommodate the use of public land to serve the educational, park and recreational needs of the District.
UC-1	20	University Campus	The intent of this zone is to accommodate educational, social, recreational, and commercial uses typically associated with an educational campus.
UH-1	21	University Housing 1	The intent of this zone is to accommodate a mix of residential housing types and associated neighbourhood uses on the non-Campus Lands.
RE	22	Resource	The intent of this zone is to accommodate the use and development of land for primary resource activities typically located in the rural portion of the municipality.
C-1	23	Local Commercial	The intent of this zone is to provide for convenience shopping serving an immediately surrounding neighbourhood(s).
C-2	24	Vehicle Fueling Station Commercial	The intent of this zone is to provide for a vehicle fueling and/or service stations, including alternative fuels, and distribution of related products.
C-3	25	Tourist Commercial	The intent of this zone is to provide for the development of a highway-oriented tourist accommodation use and general tourist uses.
C-4	26	Downtown Commercial	The intent of this zone is to accommodate a variety of shopping, services, entertainment, and tourist activities in the downtown area.
C-5	27	Recreation Commercial	The intent of this zone is to provide for the accommodation of outdoor commercial recreation and cultural uses and related uses.
C-6	28	Liquor Primary Establishment Commercial	The intent of this zone is to accommodate liquor primary establishments.

Designation	Section	Zone	Intent
C-7	29	Highway Commercial	The intent of this zone is to provide for vehicular-oriented uses designed for or dependent upon direct automobile access, usually providing extensive parking facilities or requiring large areas for the storage and handling of materials, goods, and equipment.
C-8	30	Crematorium Commercial	The intent of this zone is to accommodate a crematorium as an accessory use to a funeral parlour.
C-9	31	Specialized Highway Commercial	The intent of this zone is to accommodate large format commercial operations such as big box outlets and compatible uses.
C-10	32	Artisan Village	The intent of this zone is to provide for a broad mix of uses, including living, working, selling and leisure activities.
I-1	33	Light Industrial	The intent of this zone is to provide for light industrial uses.
I-2	34	Rail Marshaling Yard	The intent of this zone is to provide for land for the moving, storage and shunting of railway vehicles.
I-3	35	General Industrial	The intent of this zone is to provide land which requires large lot sizes at a location near to waterfront, rail, or other major transportation routes; the uses intended are primarily oriented to intensive manufacturing, transportation, and shipment of manufactured, bulk goods, or materials.
I-4	36	Used Goods Industrial	The intent of this zone is to provide land for light industrial and the extraction, production, or sale of recycled materials and the salvage of motor vehicle parts.
I-5	37	Log Sort	The intent of this zone is to provide for land for the sorting of logs.
I-6	38	Rail Transportation	This zone is intended to provide land for the operation of the CNR main line.
I-7	39	Rock Processing	The intent of this zone is to provide land for rock removal, processing and fabricating operations.
I-8	39A	Specialized Industrial Business	The intent of this zone is to permit development of an industrial business park containing a mix of light industrial uses, high technology and research and development activity, including 'Rec-Tech', as well as ancillary limited office and services uses undertaken in enclosed buildings having a high standard of design.

Designation	Section	Zone	Intent
I-9	39B	Specialized Business Service Centre	The intent of this zone is to provide for limited convenience services primarily serving the businesses and employees of the surrounding industrial business park, with a high standard of design and amenity.
CD	40	Comprehensive Development Zone	This zone is intended to accommodate and regulate the development of a use or a mixture of uses based on a comprehensive plan. Each zone differentiated by a numbered suffix shall be treated as a separate zone.

5.2 ZONING MAP

- (a) The extent of each zone is shown on Schedule "A" Zoning Map, which is attached to and forms part of this Bylaw.
- (b) Where there is no zone specified, the zone shall be zoned Resource. (*Bylaw 2303, 2013*)

5.3 ZONING BOUNDARIES

- (a) When the zone boundary is designated as following a road allowance or watercourse, the centre line of such road allowance or watercourse shall be the zone boundary.
- (b) Where a zone boundary does not follow a legally defined line or watercourse and where the distances are not specifically indicated, the location of the boundary shall be determined by scaling from the Zoning Map referred to in Section 5.2.

DISTRICT OF SQUAMISH

BYLAW NO. 2386, 2015

A bylaw to amend the District of Squamish
Zoning Bylaw No. 2200, 2011

WHEREAS the District of Squamish Council deems it necessary and appropriate to amend Zoning Bylaw No. 2200, 2011;

NOW THEREFORE, the Council of the District of Squamish, in open meeting assembled, enacts as follows:

1) This bylaw may be cited as "District of Squamish Zoning Bylaw No. 2200, 2011, Amendment Bylaw (Comprehensive Development Zone No. 69 - Squamish Oceanfront) No., 2386, 2015".

2) District of Squamish Zoning Bylaw No. 2200, 2011 as amended, is further amended as follows:

i) The following parcels of land in the District of Squamish, legally described as:

- Lot 1 District Lot 486 Group 1 New Westminster District Plan BCP16860 (PID 026-267-128)
- Lot 2 District Lot 486 Group 1 New Westminster District Plan BCP16860 (PID 026-267-136)
- Lot 1 District Lot 4271 Group 1 New Westminster District Plan BCP16861 (PID 026-267-144)
- Lot 2 District Lot 4271 Group 1 New Westminster District Plan BCP16861 (PID 026-267-161)
- Lot 3 District Lot 4271 Group 1 New Westminster District Plan BCP16861 (PID 026-267-152)
- Lot G District Lots 486, 4271, 4618, 5717, 6042 and 7134 Group 1 New Westminster District Plan 14953 (PID 007-774-010)
- District Lot 5717, Except Portions in Plans 13452 and 14953 (PID 015-788-741)
- District Lot 6042, Except Part in Plan 13452 (PID 015-792-587)
- Block B District Lots 4618, 5717, 6042 and 7134 Group 1 New Westminster District Plan 13452 (PID 008-606-153)
- Lot D Block 1, District Lots 486 and 4271 Group 1 New Westminster District Plan 14521 (PID 007-779-674)
- Lot 1 District Lot 286 Group 1 New Westminster District Plan BCP16863 (PID 026-267-403)
- Lot 2 District Lot 286 Group 1 New Westminster District Plan BCP16863 (PID 026-267-420)
- Lot 3 District Lot 286 Group 1 New Westminster District Plan BCP16863 (PID 026-267-438).

located in Squamish, British Columbia, as shown cross-hatched on the sketch attached as Schedule "A" to this bylaw are rezoned from Light Industrial (I-1) and Industrial General (I-3) to Comprehensive Development Zone No. 69 (CD-69) as indicated on Appendix "A".

ii) Section 1.3 Definitions is amended by adding the following definitions in alphabetical order:

"ADAPTABLE DWELLING UNIT" means a unit that is constructed to comply with the adaptable dwelling unit standards specified under the *British Columbia Building Code*.

"BOAT CHARTER" means a boat hired with an operator and used for transporting people for the purpose of fishing, diving, sight-seeing, or other form of recreation or as a water taxi.

“BOAT RAMP” means a structure placed on the foreshore for the purpose of launching boats and permitting the removal of boats from the water and does not include a barge ramp.

“BOATSHED” means a covered, floating structure that is fixed in position on the water, either totally enclosed or open on the sides, and used for the storage and protection of boats.

“DOCK” means a structure including ramps, floats, anchors and pilings which extend over the foreshore into the ocean and is fixed directly or indirectly to, or supported by, water or land for the purpose of providing access to and from boats, barges, and float planes which may be attached to the structure.

“HIGH TECHNOLOGY” means a use, which includes the design, but not necessarily manufacture or distribution, of commercial products in the fields of computer software, electronics, telecommunications, precision engineering, robotics, biochemistry, health care, sport and recreation, and related industries and may include labs, production studios, and ancillary office space.

“HIGH WATER MARK” means the boundary between the land and the sea, whether created by natural or artificial means;

“INTERPRETIVE CENTRE” means the use of land, building or structures for the dissemination of information and knowledge, related to the marine, industrial and cultural heritage of Squamish and the Oceanfront Lands, and the natural habitat of the Cattermole Slough.

“MARINE PARK” means a park and related open space that conserves naturally occurring habitat and that is immediately contiguous to the ocean and accessible to the public for educational and related purposes, subject to other District bylaws governing public access to park land and public open space, and that may include an area of the ocean.

“OCEANFRONT LANDS” means the area of real property, including the surface of water, comprising the parcels of land in the District of Squamish, as shown on Appendix “A” and legally described as:

- Lot 1 District Lot 486 Group 1 New Westminster District Plan BCP16860 (PID 026-267-128)
- Lot 2 District Lot 486 Group 1 New Westminster District Plan BCP16860 (PID 026-267-136)
- Lot 1 District Lot 4271 Group 1 New Westminster District Plan BCP16861 (PID 026-267-144)
- Lot 2 District Lot 4271 Group 1 New Westminster District Plan BCP16861 (PID 026-267-161)
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- Lot G District Lots 486, 4271, 4618, 5717, 6042 and 7134 Group 1 New Westminster District Plan 14953 (PID 007-774-010)
- District Lot 5717, Except Portions in Plans 13452 and 14953 (PID 015-788-741)
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- Lot D Block 1, District Lots 486 and 4271 Group 1 New Westminster District Plan 14521 (PID 007-779-674)
- Lot 1 District Lot 286 Group 1 New Westminster District Plan BCP16863 (PID 026-267-403)
- Lot 2 District Lot 286 Group 1 New Westminster District Plan BCP16863 (PID 026-267-420)
- Lot 3 District Lot 286 Group 1 New Westminster District Plan BCP16863 (PID 026-267-438).

“PARK” means an area of land, including an area of the ocean, that is used for the enjoyment and pleasure of the public, having facilities for rest, recreation, exercise,

amusement, ornament or protection of the natural environment, and that is accessible to the public subject to other District bylaws governing public access to park land, which area of land is protected as park land, including by dedication, reservation, reverter, a condition on title, bylaw, covenant, statutory right of way or other similar means.

"PASSENGER FERRY DOCK" means a structure which extends over the foreshore into the ocean and is fixed directly or indirectly to, or supported by, water or land for the purpose of providing access to and from a foot passenger ferry which transports the general public.

"SAILING CENTRE" means a use within a building by a club incorporated under the Society Act for the purpose of boating, sailing, yachting, rowing, kayaking or other similar marine-oriented recreation activities and in which the affairs of the organization are actually conducted and carried on by members thereof.

"SECONDARY SUITE" means a second, self-contained dwelling unit with private access, its own kitchen and bathroom, and located within a single-family dwelling unit, or within a townhouse dwelling unit as permitted in the CD-40 and CD-69 Zones, complying with the requirements of Section 4.23 of this Bylaw.

"THEATRE AND AMPHITHEATRE" means a building or outdoor structure or area used for presenting plays, dramatic performances, motion pictures, musical performances, lectures or similar things;

- iii) Section 1.3 Definitions is amended by deleting the definitions of Secondary Suite, Townhouse Dwelling, Restaurant, and Useable Open Space and substituting the following:

"TOURIST ACCOMMODATION" means a building containing one or more habitable rooms or dwelling units used primarily for temporary lodging by visitors;

"USEABLE OPEN SPACE" means a compact, level, unobstructed area or areas, providing maximized access to sunlight, having no dimension less than 6.10 metres (20 feet), no slope greater than 5 percent to ensure universal access, and being available for the safe and convenient use by the occupants or users of a building or lot for recreation or leisure activities, and excludes areas used for off street parking, off street loading, service driveways or a required front setback, and without limitation Useable Open Space may be accessible to the public in the case of a statutory right of way agreement and covenant in favour of the District or other similar means;

- iv) Section 4.23 (b) is deleted and replaced with the following:

- (b) be permitted in townhouse dwelling units within the CD-40 and CD-69 Zones;

- v) Section 4.23 (e) is deleted and replaced with the following:

- (e) be limited to one such use per townhouse dwelling unit within the CD-40 and CD-69 zone to a maximum of 90 square metres (968.8 square feet) or 40% of the gross floor area of the building, whichever is less;

- vi) The following is added:

SECTION 39MMM

COMPREHENSIVE DEVELOPMENT ZONE NO. 69 (CD-69)

The intent of this zone is to accommodate and regulate the development of commercial, employment, institutional, parks and open space, multiple-family residential and accessory uses in Blocks A, B, C, D, E, F, G, H, and I, as shown on Schedule B which is attached to and forms part of this bylaw.

The Oceanfront Lands are divided into Blocks A, B, C, D, E, F, G, H, and I, as shown on Schedule B which is attached to and forms part of this bylaw.

39MMM.1

Overall Density

Despite any other provision of this Bylaw, the maximum gross floor area of

- a) residential use on the Oceanfront Lands shall not exceed 133,000 square metres (1,431,000 square feet), provided that 40,000 square metres (430,556 square feet) of additional gross floor area for residential use is permitted if within Blocks B, C1, E1, E2, or any of them, and
- b) commercial use on the Oceanfront Lands shall not exceed 27,666 square metres (297,794 square feet), provided that in respect of the portions of Block B and Block D that are abutting a highway that is constructed for vehicular access to a width of not less than 26 metres:
 - i) 7,895 square metres (84,981 square feet) of additional gross floor area for commercial use may be developed within Block B, and
 - ii) 5,000 square metres (53,820 square feet) of additional gross floor area for commercial use may be developed within Block D.

Tourist Accommodation Use

Despite any other provision of this bylaw, a dwelling unit in the CD-69 Zone may be used for seasonal or temporary tourist accommodation of not more than four guests during periods when such dwelling units are not occupied for residential use.

39MMM.2 Block A – Village Centre

39MMM.2.1 Permitted Uses

The following uses and no others shall be permitted on a lot in Block A:

- a) accessory uses;
- b) apartment dwellings;
- c) arts and culture;
- d) artisan;
- e) assembly;
- f) business and professional office, major and minor;
- g) café and coffee shop;
- h) child care facility;
- i) civic;
- j) entertainment;
- k) home occupation office, subject to Section 4.18;
- l) hostel;
- m) hotel;
- n) liquor primary establishment;
- o) off-street parking and loading;
- p) park
- q) personal service establishments;
- r) post office;
- s) public parking, without limiting off-street parking and loading;
- t) indoor recreation facility;
- u) retail store;
- v) restaurant;
- w) theatres and amphitheatres, without limiting arts and culture;
- x) tourist accommodation;
- y) tourist bureau, without limiting business and professional office.

39MMM.2.2 Conditions of Use

- a) A hotel shall be permitted if the hotel is available for public use, accommodating nightly rentals for the travelling public at least a majority of each calendar year.
- b) Accessory residential or business and professional office uses shall be limited to any floor above the ground floor of a building.

- c) Apartment dwelling use shall be subject to Section 4.16 of this Bylaw.

39MMM.2.3 Density

For the purpose of building construction:

- a) The overall density (*gross floor area ratio*) of Block A shall not exceed 1.0.
- b) Notwithstanding 39MMM.2.3 (a) above, the density (*gross floor area ratio*) on any given lot shall not exceed 2.5.
- c) The floor area of each residential dwelling unit shall not be less than 46.5 square metres (500 square feet).
- d) The Village Commons, as identified on Schedule B, shall have a minimum parcel area of 0.4 acres or 1,600 square metres.

39MMM.2.4 Height

Building and structure heights shall comply with the following:

- a) Principal buildings:
 - i. The hotel building height shall not exceed 20.0 metres (66 feet) or six storeys, whichever is less.
 - ii. All other building heights in the Village Centre Area shall not exceed 10.0 metres (33 feet) or two storeys, whichever is less.
- b) Accessory buildings and structures: The building height shall not exceed 3.0 metres (10 feet).

39MMM.2.5 Lot Coverage

- a) The lot coverage shall not exceed 70% of the area of the lot.

39MMM.2.6 Useable Open Space

- a) Useable Open Space not less than 10.0 square metres (108 square feet) per dwelling unit shall be provided for each lot.

39MMM.2.7 Siting Requirements

Building and structure siting shall comply with the following:

- a) Front Lot Line Setback:
 - i. Principal buildings fronting a highway comprising not less than four travelling vehicle lanes shall be located not less than 4.0 metres (13 feet) from the front lot line.
 - ii. Principal buildings adjacent to a public walkway that is not part of a vehicular highway shall be located not less than 5.0 metres (16.4 feet) from the front lot line.
 - iii. Principal buildings fronting a park or public plaza or other open space shall be located not less than 0.6 metres (2 feet) from the front lot line;
- b) Side Lot Line Setback: Buildings and structures shall be located not less than 5.0 metres (16.4 feet) from the side lot line.
- c) Rear Lot Line Setback: Principal buildings shall be located not less than 5.0 metres (16.4 feet) from a rear lot line.
- d) If a building or structure fronts a public walkway that is within 20 metres of the high water mark, then it shall be located not less than 6.0 metres from the centre line of the public walkway.

- e) Notwithstanding Sections 39MMM.2.7 (a), (b) and (c), siting requirements do not apply to underground parking structures or a basement provided that these are not greater than 0.6 metres (2 feet) above finished grade.
- f) All dimensions and measurements shall be determined in accordance with Sections 1 and 4.17 of this bylaw.

39MMM.3 Block B – Primary Employment

39MMM.3.1 Permitted Uses

The following uses and no others shall be permitted on a lot in Block B:

- a. accessory uses;
- b. apartment dwelling;
- c. arts and culture;
- d. artisan;
- e. business and professional office, major and minor;
- f. café and coffee shop;
- g. child care facility;
- h. convenience store;
- i. entertainment;
- j. grocery store;
- k. home occupation office, subject to Section 4.18;
- l. high technology;
- m. light industrial, including high technology, furniture or fixtures and sports and recreation, but expressly prohibiting medical marihuana production and medical marihuana production, multiple users;
- n. liquor store;
- o. off-street parking and loading;
- p. personal service establishments;
- q. post office;
- r. public parking, without limiting off-street parking and loading;
- s. indoor recreation;
- t. research and development facilities;
- u. restaurant;
- v. retail store;
- w. theatres and amphitheatres, without limiting arts and culture;
- x. tourist bureau;
- y. interpretive centre;
- z. video production or rehearsal studios.

39MMM.3.2 Conditions of Use

- a) Apartment dwelling use is subject to Section 4.16 of this Bylaw.
- b) Light industrial uses shall only be permitted fronting the Waterfront Employment Area (Block C) as identified on Schedule B.
- c) An Entertainment use shall only be permitted fronting the Mamquam Waterfront Residential (Block D) and the Village Centre (Block A) as identified on Schedule B.
- d) Retail store and commercial service uses permitted in 39MMM.3.1 shall only be located at the ground level at the south end of Block B adjacent to the Oceanfront Park or an adjacent public parking facility and fronting a highway, with any accessory business and professional office uses located above the permitted retail store or commercial service uses.
- e) The permitted grocery store shall have a floor area not exceeding 465 square meters (5,000 square feet).

39MMM.3.3 Density

For the purpose of building construction:

- a) The overall density (gross floor area ratio) of Block B as identified in Schedule B shall not exceed 1.0;

- b) Notwithstanding 39MMM.2.3 (a) above, the density (gross floor area ratio) on any lot shall not exceed 1.5;
- c) The total allowable area for residential use shall be limited to a maximum of 25% of the overall density for Block B; and
- d) The floor area of any individual residential dwelling unit shall not be less than 46.5 square metres (500 square feet).

39MMM.3.4 Height

Building and structure heights shall comply with the following:

- a) Principal buildings: building heights shall not exceed 15.0 metres (49 feet) or three (3) storeys, whichever is less.
- b) Accessory buildings and structures: building and structure heights shall not exceed 3.0 metres (10 feet).

39MMM.3.5 Lot Coverage

- a) The lot coverage shall not exceed 70% of the area of the lot.

39MMM.3.6 Useable Open Space

- a) Useable Open Space not less than 10.0 square metres (108 square feet) per upper-level dwelling unit shall be provided.

39MMM.3.7 Siting Requirements

Building and Structure siting shall comply with the following:

- a) Front Lot Line Setback:
 - i. Principal buildings fronting a highway comprising not less than four travelling vehicle lanes shall be located not less than 4.0 metres (13 feet) from the front lot line.
 - ii. Principal buildings adjacent to a public walkway that is not part of a vehicular highway shall be located not less than 5.0 metres (16.4 feet) from the front lot line.
- b) Side Lot Line Setback: Buildings and structures shall be located not less than 5.0 metres (16.4 feet) from the side lot line;
- c) Rear Lot Line Setback: Principle buildings shall be located not less than 5.0 metres (16.4 feet) from a rear lot line;
- d) If a building or structure fronts a public walkway that is within 20 metres of the high water mark, then it shall be located not less than 6.0 metres from the centre line of the public walkway.
- e) Notwithstanding sections 39MMM.3.7 (a), (b) and (c), siting requirements do not apply to underground parking structures or a basement provided that these are not greater than 0.6 metres (2 feet) above finished grade;
- f) All dimensions and measurements shall be determined in accordance with Sections 1 and 4.17 of this bylaw.

39MMM.4 Block C – Waterfront Employment (Marine Centre)

39MMM.4.1 Permitted Uses

The following uses and no others shall be permitted on a lot in Block C:

- a. accessory;
- b. accessory residential dwelling, subject to Section 4.21;
- c. boat building and storage;
- d. boat launch;
- e. business and professional office, minor;
- f. fabrication shops;
- g. general repair and services;

- h. Interpretive centre;
- i. marine-oriented tourist and recreation uses;
- j. marine service and repair;
- k. marine transportation infrastructure, including passenger ferry services;
- l. marine park
- m. marine retail and rental;
- n. marine-oriented office and training facilities;
- o. marine-oriented light industrial;
- p. off-street parking and loading;
- q. public parking, without limiting off-street parking and loading;
- r. warehouse and storage facilities.

In addition to the uses permitted under 39MMM.4.1, the following multi-family residential uses are permitted within Block C1– Marine Centre Flex Zone, as identified on Schedule B:

- s. apartment dwellings;
- t. home occupation office;
- u. lodging and rooming house;
- v. townhouse dwellings;
- w. secondary suite.

39MMM.4.2 Conditions of Use

- a) Accessory residential dwelling use is permitted for caretakers or seasonal staff and shall be located above the ground floor.
- b) Residential use shall be a minimum of 300 metres (984 feet) from Squamish Terminals, as measured from the residential property line to the closest building face on Squamish Terminals property, buffered from associated noise and light.
- c) Section 4.16 of this Bylaw applies to every residential use in Block C1.
- d) Marine retail and rental uses shall be located only at grade facing a highway.
- e) Civic Uses shall only be permitted fronting the Oceanfront Park (Block C) as identified on Schedule B.
- f) Business and Professional Office minor uses are permitted provided they are accessory to marine-oriented light industrial uses.

39MMM.4.3 Density

For the purpose of building construction:

- a) The overall density (*gross floor area ratio*) of Block C and C1 shall not exceed 1.75.
- b) Despite Section 3.9MMM.4.3(a), the density (gross floor area) of an apartment building, lodging and rooming house or townhouse dwelling shall not exceed 1.5 in Block C1.

39MMM.4.4 Height

Building and structure heights shall comply with the following:

- a) Block C as shown in Schedule B Principal building: building heights shall not exceed 10.0 metres (33 feet) or two storeys, whichever is less.
- b) Block C1 – Flex Zone as shown in Schedule B Principal building: where multi-family residential is permitted under 39MMM.4.1, building heights shall not exceed 13.0 metres (44 feet) or four (4) storeys, whichever is less.
- c) Accessory buildings and structures: The building height shall not exceed 3.0 metres (10 feet).

39MMM.4.5 Lot Coverage

- a) The lot coverage for Blocks C and C1 shall not exceed 70% of the area of the lot.

39MMM.4.6 Useable Open Space

- (a) Useable Open Space not less than 20.0 square metres (215 square feet) per ground-oriented dwelling unit and 10.0 square metres (108 square feet) per upper-level dwelling unit shall be provided.

39MMM.4.7 Siting Requirements

Building and structure siting shall comply with the following:

- a) Front Lot Line Setback:
 - i. Principal buildings fronting a highway comprising not less than four travelling vehicle lanes shall be located not less than 4.0 metres (13 feet) from the front lot line.
 - ii. Principal buildings adjacent to a public walkway that is not part of a vehicular highway shall be located not less than 5.0 metres (16.4 feet) from the front lot line.
- b) Side Lot Line Setback: Buildings and structure shall be located not less than 5.0 metres (16.4 feet) from the side lot line;
- c) Rear Lot Line Setback: Principal buildings shall be located not less than 5.0 metres (16.4 feet) from a rear lot line;
- d) Principal residential buildings shall be located not less than 5.0 metres (16.4 feet) from all front, rear and exterior side property lines
- e) If a building or structure fronts a public walkway that is within 20 metres of the high water mark, then it shall be located not less than 6.0 metres from the centre line of the public walkway.
- f) Notwithstanding Sections 39MMM.4.7 (a), (b) and (c), a minimum setback of 20.0 metres (66 feet) from high water mark shall be provided along the Cattermole Slough as shown in Schedule B.
- g) Notwithstanding Sections 39MMM.4.7 (a), (b) and (c), siting requirements do not apply to underground parking structures or a basement provided that these are not greater than 0.6 metres (2 feet) above finished grade;
- h) All dimensions and measurements shall be determined in accordance with Sections 1 and 4.17 of this bylaw.

39MMM.5 Block D – Mamquam Waterfront Residential

39MMM.5.1 Permitted Uses

The following uses and no others shall be permitted on a lot in Block D:

- a) Multi-family residential development including:
 - i. accessory uses;
 - ii. apartment dwellings;
 - iii. home occupation office;
 - iv. secondary suite;
 - v. townhouse dwellings.
- b) Mixed-use development including:
 - i. accessory uses;
 - ii. apartment dwelling;
 - iii. artisan;
 - iv. arts and culture;
 - v. business and professional office, major and minor;
 - vi. café and coffee shop;
 - vii. child care facility
 - viii. civic;

- ix. duty free distribution centre, without limiting retail store;
- x. entertainment;
- xi. fitness centre;
- xii. home occupation office;
- xiii. live-work unit;
- xiv. marine related tourist and recreation uses;
- xv. marine park;
- xvi. off-street parking and loading;
- xvii. park;
- xviii. personal service establishment;
- xix. post office;
- xx. public parking, without limiting off-street parking and loading;
- xxi. restaurant;
- xxii. retail store.

39MMM.5.2 Conditions of Use

- a) At least 20% of all single-storey apartment dwelling units, which employ interior corridors or direct at-grade exterior access to the dwelling unit, shall be constructed as adaptable dwelling units.
- b) Apartment dwelling use is subject to Section 4.16 of this Bylaw.
- c) An entertainment use shall only be permitted fronting the Primary Employment Area (Block B) as identified on Schedule B.

39MMM.5.3 Density

For the purpose of building construction:

- a) The overall density (gross floor area ratio) of Block D shall not exceed 2.0;
- b) Notwithstanding 39MMM.5.3 (a), the density (gross floor area ratio) on any lot shall not exceed 3.5.
- c) The floor area of each residential dwelling unit, shall not be less than 46.5 square metres (500 square feet).
- d) The total floor area of any building containing an apartment dwelling or a townhouse dwelling, shall be subject to the following exemptions:
 - i. 1.86 square metres (20.0 square feet) per one bedroom adaptable housing unit provided; and
 - ii. 2.80 square metres (30.14 square feet) per two-plus bedroom adaptable housing unit provided.

39MMM.5.4 Height

Building heights shall comply with the following:

- a) Principal buildings:
 - i. building heights shall not exceed 20.0 metres (66 feet) or six (6) storeys, whichever is less;
 - ii. Notwithstanding 39MMM.5.4(a)(i), building heights can be increased to 40.0 metres (132 feet) or twelve (12) storeys, whichever is less, if the owner or occupier of the land or building submits to the District a report prepared by a Professional Engineer who is approved by the District certifying that the increased height can be accommodated with available District works and services, including fire protection, and
 - 1. the building shall only be located on any lot within Block D that abuts a highway and immediately fronts the Primary Employment Area (Block B), as identified on Schedule B; and
 - 2. if the building incorporates a podium element, the height of the podium shall not be less than 10.0 metres (33 feet) or

three (3) storeys, but may increase in height by terracing upwards by floor levels to the maximum permitted height.

- b) Accessory buildings and structures: Building and structure height shall not exceed 3.0 metres (10 feet).

39MMM.5.5 Lot Coverage

- a) The lot coverage shall not exceed 45% of the area of the lot.

39MMM.5.6 Useable Open Space

- a) Useable Open Space not less than 20.0 square metres (215 square feet) per ground-oriented dwelling unit and 10.0 square metres (108 square feet) per upper-level dwelling unit shall be provided.

39MMM.5.7 Siting Requirements

Building and structure siting shall comply with the following:

- a) Principal mixed-use buildings:
 - i. Buildings fronting a highway comprising not less than four travelling vehicle lanes shall be located not less than 4 metres (13 feet) from the front lot line.
 - ii. Building adjacent to a public walkway that is not part of a vehicular highway shall be located not less than 5.0 metres (16.4 feet) from the front lot line.
- b) Principal residential buildings:
 - i. shall be located not less than 5.0 metres (16.4 feet) from all front, rear and exterior side property lines.
- c) If a building or structure fronts a public walkway that is within 20 metres of the high water mark, then it shall be located not less than 6.0 metres from the centre line of the public walkway.
- d) Notwithstanding Sections 39MMM.5.7 (a), (b) and (c), siting requirements do not apply to underground parking structures or a basement provided that these are not greater than 0.6 metres (2 feet) above finished grade;
- e) All dimensions and measurements shall be determined in accordance with Sections 1 and 4.17 of this bylaw.

39MMM.6 Blocks E, E1 and E2 – Education and Institutions

39MMM.6.1 Permitted Uses

The following uses and no others shall be permitted on a lot in Block E, E1 or E2:

- a. accessory uses;
- b. artisan;
- c. arts and culture;
- d. assembly;
- e. business and professional office, major and minor;
- f. café and coffee shop;
- g. child care facility;
- h. education and training institution, including technical school, community college or university;
- i. entertainment;
- j. neighbourhood commercial;
- k. neighbourhood pub;
- l. off-street parking and loading;
- m. park;
- n. student and faculty housing;
- o. social service centre.

In addition to the uses permitted under 39MMM.6.1, the following residential uses are permitted within **Sub-Blocks E1 and E2– Cattermole Flex Zones**, as identified on Schedule B:

- p. apartment dwellings;
- q. home occupation office;
- r. lodging and rooming house;
- s. townhouse dwellings;
- t. secondary suite.

39MMM.6.2 Conditions of Use

- a) Apartment dwelling shall be provided in accordance with Section 4.16 of this Bylaw.
- b) Neighbourhood commercial uses permitted in 39MMM.6.1 shall be located at ground level if facing a park, useable open space or highway.
- c) Commercial, recreational, entertainment and arts and culture uses permitted in 39MMM.6.1 shall be considered accessory to the permitted education and institutional uses.

39MMM.6.3 Density

For the purpose of building construction:

- a) the overall density (gross floor area ratio) of Block E shall not exceed 2.5;
- b) the overall density (gross floor area ratio) of Block E2, shall not exceed 2.5;
- c) the overall density (gross floor area ratio) of Block E1 shall not exceed 2.0;
- d) the floor area of each residential dwelling unit shall not be less than 46.5 square metres (500 square feet);
- e) despite Section 6.3 (a) through (d), the density (gross floor area) of an apartment dwelling, a lodging and rooming house or a townhouse dwelling shall not exceed 1.5 in Blocks E1 and E2.

39MMM.6.4 Height

Building heights shall comply with the following:

- a) **Block E, Sub-Block E2:**
 - i. Principal building: building heights shall not exceed 20.0 metres (66 feet) or six (6) storeys, whichever is less.
 - ii. Accessory buildings and structures: building and structure heights shall not exceed 3.0 metres (10 feet).
- b) **Block E1:**
 - i. Principal building: building heights shall not exceed 16.0 metres (53 feet) or four (4) storeys, whichever is less.
 - 1. Notwithstanding 39.MMM.6.4 (b)(i), where a residential use is permitted under 39MMM.6.1 within Block E1 as identified on Schedule B, building heights shall not exceed 13.0 metres (44.4 feet) or four (4) storeys, whichever is less.
 - ii. Accessory buildings and structures: building and structure heights shall not exceed 3.0 metres (10 feet).

39MMM.6.5 Lot Coverage

- a) The lot coverage for Blocks E, E1, and E2 shall not exceed 60% of the area of the lot.

39MMM.6.6 Useable Open Space

- a) Useable Open Space not less than 20.0 square metres (215 square feet) per ground-oriented dwelling unit and 10.0 square metres (108 square feet) per upper-level dwelling unit shall be provided.

39MMM.6.7 Siting Requirements

Building and structure siting shall comply with the following:

- a) Principal Buildings, for all uses except residential:
 - i. Buildings fronting a highway comprising not less than four travelling vehicle lanes shall be located not less than 4 metres (13 feet) from the front lot line,
 - ii. Buildings fronting another highway shall be located not less than 4.0 metres (13 feet) from the front lot line,.
 - iii. Buildings adjacent to a public walkway that is not part of a vehicular highway shall be located not less than 5.0 metres (16.4 feet) from the front lot line.
- b) Principal Residential Buildings:
 - i. Buildings shall be located not less than 5.0 metres (16.4 feet) from all front, rear and exterior side property lines.
- c) Notwithstanding Sections 39MMM.6.7 (a) and (b), siting requirements do not apply to underground parking structures or a basement provided that these are not greater than 0.6 metres (2 feet) above finished grade.
- d) Notwithstanding Sections 39MMM.6.7 (a), (b) and (c), a minimum setback of 20.0 metres (66 feet) from high water mark shall be provided along the Cattermole Slough.
- e) If a building or structure fronts a public walkway that is within 20 metres of the high water mark, then it shall be located not less than 6.0 metres from the centre line of the public walkway.
- f) All dimensions and measurements shall be determined in accordance with Section 1 and Section 4.17 of this bylaw.

39MMM.7 Block F – Cattermole Waterfront Residential

39MMM.7.1 Permitted Uses

The following uses and no others shall be permitted on a lot in Block F:

- a) Multi-family development:
 - i. accessory uses;
 - ii. apartment dwelling;
 - iii. home occupation office;
 - iv. lodging and rooming house;
 - v. townhouse dwellings;
 - vi. secondary suite;
 - vii. two-family dwellings.
- b) In addition to the uses permitted in 39MMM7.1, the following accessory local commercial service shall be permitted:
 - i. business and professional office, minor;
 - ii. café and coffee shop;
 - iii. child care facility;
 - iv. child care facility, residential;
 - v. convenience store;
 - vi. fitness centre;
 - vii. live work unit;
 - viii. off-street parking and loading;
 - ix. personal service establishment;
 - x. public parking, without limiting off-street parking and loading.

39MMM.7.2 Conditions of Use

- a) At least 20% of all single-storey apartment dwelling units, which employ interior corridors or direct at-grade exterior access to the dwelling unit, shall be constructed as adaptable dwelling units.
- b) A residential child care facility shall be subject to Section 4.18 of this Bylaw.
- c) Commercial uses shall only be permitted at ground level.
- d) An apartment dwelling use shall be provided in accordance with Section 4.16 of this Bylaw.

39MMM.7.3 Density

For the purpose of building construction:

- a) The overall density (gross floor area ratio) of Block F shall not exceed 1.5
- b) The floor area of each residential dwelling unit shall not be less than 46.5 square metres (500 square feet).
- c) The total floor area of any building containing an apartment dwelling or a townhouse dwelling, shall be subject to the following exemptions:
 - i. 1.86 square metres (20.0 square feet) per one bedroom adaptable housing unit provided; and
 - ii. 2.80 square metres (30.14 square feet) per two-plus bedroom adaptable housing unit provided.

39MMM.7.4 Height

Building heights shall comply with the following:

- a) Principal building: building heights shall not exceed 13.0 metres (44 feet) or four (4) storeys, whichever is less.
- b) Accessory buildings and structures: Building and structure heights shall not exceed 3.0 metres (10 feet).

39MMM.7.5 Lot Coverage

- a) The lot coverage shall not exceed 40% of the area of the lot.

39MMM.7.6 Useable Open Space

- (a) Useable Open Space not less than 20.0 square metres (215 square feet) per ground-oriented dwelling unit and 10 square metres (108 square feet) per upper-level dwelling unit shall be provided.

39MMM.7.7 Siting Requirements

Building and structure siting shall comply with the following:

- a) Front Lot Line Setback:
 - i. Buildings fronting a highway shall be located not less than 4 metres (13 feet) from the front lot line.
 - ii. Buildings adjacent to a public walkway that is not part of a vehicular highway shall be located not less than 5.0 metres (16.4 feet) from the front lot line.
- b) Principal residential buildings shall be located not less than 5.0 metres (16.4 feet) from all front, rear and exterior side property lines.
- c) Despite sections 39MMM.7.7 (a) and (B), a minimum setback of 20.0 metres (66 feet) from high water mark shall be provided along the Cattermole Slough.
- d) If a building or structure fronts a public walkway that is within 20 metres of the high water mark, then it shall be located not less than 6.0 metres from the centre line of the public walkway.

- e) Notwithstanding sections 39MMM.7.7 (a) and (b), siting requirements do not apply to underground parking structures or a basement provided that these are not greater than 0.6 metres (2 feet) above finished grade;
- f) All dimensions and measurements shall be determined in accordance with Sections 1 and 4.17 of this bylaw.

39MMM.8 Block G – Cattermole Interior Residential

39MMM.8.1 Permitted Uses

The following uses and no others shall be permitted on a lot in Block G:

- a. accessory uses;
- b. apartment dwelling;
- c. child care facility;
- d. child care facility, residential;
- e. home occupation office;
- f. live work unit;
- g. lodging and rooming house;
- h. neighbourhood commercial;
- i. off-street parking and loading;
- j. park;
- k. public parking, without limiting off-street parking and loading;
- l. townhouse dwellings;
- m. secondary suite.

39MMM.8.2 Conditions of Use

- a) At least 20% of all single-storey apartment dwelling units, which employ interior corridors or direct at-grade exterior access to the dwelling unit, shall be constructed as adaptable dwelling units.
- b) A residential child care facility shall be subject to Section 4.18 of this Bylaw.
- c) An apartment dwelling use shall be provided in accordance with Section 4.16 of this Bylaw.

39MMM.8.3 Density

For the purpose of building construction:

- a) The overall density (gross floor area ratio) of Block G shall not exceed 2.5.
- b) The floor area of each residential dwelling unit, shall not be less than 46.5 square metres (500 square feet).
- c) The total floor area of any building containing an apartment dwelling or a townhouse dwelling, shall be subject to the following exemptions:
 - i. 1.86 square metres (20.0 square feet) per one bedroom adaptable housing unit provided; and
 - ii. 2.80 square metres (30.14 square feet) per two-plus bedroom adaptable housing unit provided.

39MMM.8.4 Height

Building heights shall comply with the following:

- a) Principal buildings:
 - i. Building heights shall not exceed 13.0 metres (44 feet) or four (4) storeys, whichever is less.
 - ii. Notwithstanding 39MMM.8.4 (a)(i), building heights of an apartment dwelling use shall not exceed 20.0 metres (66 feet) or six (6) storeys, whichever is less.

- b) Accessory buildings and structures: The building height shall not exceed 3.0 metres (10 feet).

39MMM.8.5 Lot Coverage

- a) The lot coverage shall not exceed 50% of the area of the lot.

39MMM.8.6 Useable Open Space

- a) Useable Open Space not less than 20.0 square metres (215 square feet) per ground-oriented dwelling unit and 10.0 square metres (108 square feet) per upper-level dwelling unit shall be provided.

39MMM.8.7 Siting Requirements

Building and structure siting shall comply with the following:

- a) Front Lot Line Setback:
 - i. buildings fronting a highway shall be located not less than 4 metres (13 feet) from the front lot line.
 - ii. buildings adjacent to a public walkway that is not part of a vehicular highway shall be located not less than 5.0 metres (16.4 feet) from the front lot line.
- b) Principal residential buildings shall be located not less than 5.0 metres (16.4 feet) to all front, rear, and exterior side lot lines.
- c) Notwithstanding sections 39MMM.8.7 (a), (b) and (c), siting requirements do not apply to underground parking structures or a basement provided that these are not greater than 0.6 metres (2 feet) above finished grade;
- d) All dimensions and measurements shall be determined in accordance with Sections 1 and 4.17 of this bylaw.

39MMM.9 Block H – Mixed Use Marine

Water lots comprising the oceanfront foreshore waters within the Mamquam Blind Channel, as well as Cattermole Slough fronting the Marine Centre south of the future Cattermole Bridge, are designated as a 'Mixed-Use Marine Zone'.

39MMM.9.1 Permitted Uses

The following uses and no others shall be permitted on a water lot, other lot or foreshore in Block H:

- a) accessory uses;
- b) boat launch or ramp;
- c) boatshed;
- d) café or coffee shop;
- e) cruise ship terminal and ancillary uses and services;
- f) civic;
- g) docks and floats;
- h) dry dock or boat lift;
- i) marina, including fuel sales, marine retail and boat rentals;
- j) marine park;
- k) marine navigation aids, including signs, markers and structures necessary to accommodate the needs of marine navigation, underwater conservancies and habitat protection areas;
- l) marine transportation, including passenger ferry dock, boat charters and water taxis;
- m) oceanfront walkway;
- n) off-street parking and loading
- o) public parking;
- p) piers;
- q) pilings and dolphins;
- r) restaurant;
- s) recreational and tourist facilities;
- t) tourist bureau.

39MMM.9.2 Conditions of Use

- a) Cruise ship terminal shall be permitted on a commercial pier at the southwest end of the Oceanfront peninsula accessible via the Oceanfront Park as shown in Schedule B.
- b) Docks or structures below the high water mark shall not impede pedestrian passage along the foreshore.
- c) Docks are permitted on the condition that moorage is available to members of the boating public. For certainty, the permitted dock use in this block does not include docks providing exclusive moorage space only to members of a private yacht club or similar organization.
- d) Marine service commercial and restaurant uses shall be connected to the oceanfront walkway by a ramp or pier to accommodate pedestrian access, garbage and commercial loading activities.
- e) Boatsheds shall only be permitted within a marina or as permitted for use by a public authority (police marine squad, search and rescue) operation.
- f) Drydock (or boat lift) shall only be permitted in association with and adjacent to the Waterfront Employment Area (Blocks C, C1).

39MMM.9.3 Density

For the purpose of building construction:

- a) The density (gross floor area ratio) for any given parcel shall not exceed 0.5

39MMM.9.4 Height

- a) Principal building: building heights shall not exceed 10.0 metres (33 feet) or two storeys, whichever is less.
- b) Accessory buildings and structures: The building height shall not exceed 3.0 metres (10 feet).

39MMM.10 Block H1 – Cattermole Natural Marine

Water lots comprising the oceanfront foreshore waters within Cattermole Slough north of the future Cattermole Bridge are designated as a 'Natural Marine Zone'.

39MMM.10.1 Permitted Uses

The following uses and no others shall be permitted on a water lot, other lot or the foreshore in Block H1:

- a) marine park;
- b) civic;
- c) nature observation deck;
- d) non-motorized boat access;
- e) oceanfront walkway;
- f) park;
- g) public boat ramp (for hand-launching).

39MMM.10.2 Siting Requirements

- a) Lighting and fencing are subject to Sections 4.6 and 4.28.

39MMM.11 Block I – Parks, Public Spaces and Community Facilities

39MMM11.1 Permitted Uses

The following uses and no others shall be permitted in Block I:

- a) Accessory;
- b) Accessory concession, café and coffee shop;
- c) Assembly (public);
- d) boat launch;

- e) civic;
- f) community sailing centre;
- g) marine park;
- h) nature observation deck;
- i) park;
- j) playground;
- k) theatre.

39MMM.11.2 Conditions of Use

- a) Surface or structured public parking shall be provided adjacent to the Oceanfront Park.
- b) The Sailing Centre, including Wind Sport Beach, shall be situated at the southeast portion of the peninsula.
- c) Uses shall conform to Schedule B of the Sub Area Plan

39MMM.11.3 Density

For the purpose of building or structure construction, the density (gross floor area ratio) for any lot on which the building or structure is located shall not exceed 1.75.

39MMM.11.4 Height

- a) Principal building: building heights shall not exceed 10.0 metres (33 feet) or two (2) storeys, whichever is less;
- b) Accessory buildings and structures: building and structure heights shall not exceed 10.0 metres (33 feet).

39MMM.11.5 Siting Requirements

- a) Lighting and fencing are subject to sections 4.6 and 4.28 of this Bylaw.

39MMM.12 Off-Street Parking

- a) Off-street parking and loading for Blocks A, B, C, D, E, E1, E2, F, G, H, and I shall be provided in accordance with Sections 40 and 41 of this Bylaw.
- b) A concealed parking area shall be provided for all principal residential uses, or where residential uses are combined with mixed use development.
- c) Surface parking shall be permitted in Blocks B, C, E, E1, E2 and I subject to the landscaping and screening requirements of Section 4.7 and 4.27 of this Bylaw.
- d) Shared parking facilities shall be permitted where it can be demonstrated according to Section 40.6 (e) of this Bylaw that peak parking demand for different classes of land use occurs at different times of the day or week, based on a parking study completed by a Professional Engineer to the satisfaction of the District at Development Permit.

39MMM.13 Bicycle Parking

Blocks A, B, C, D, E, F, G, H, I:

- a) Off-street bicycle parking for buildings and uses shall be provided in accordance with the following table:

USE	Minimum Bicycle Parking Requirements
Residential Apartment and/or Townhouse Dwelling	2 'Class A' spaces per dwelling unit Minimum of 6 'Class B' spaces for any development with ten or more dwelling units
All other non-residential uses	1 'Class A' space per 500 m ² GFA

	Minimum of 6 'Class B' spaces for any development with a gross floor area of 1,000m ² (10,764 ft ²) or greater
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- b) Class B bicycle spaces shall be provided in a convenient, well-lit location that provides visual surveillance by occupants of the building the racks are intended to serve.
- c) Class B bicycle racks shall support the bicycle frame above the centre of gravity and shall enable the bicycle frame and front wheel to be locked to the rack with a U-style lock.
- d) The owner or occupier of the lot in commercial zones for which Class B bicycle spaces are required, rather than provide the required spaces on site or off site, may contribute to the District a sum of \$100 per required space.
- vii. The area rezoned from Light Industrial (I-1) and Industrial General (I-3) to Comprehensive Development Zone No. 69 is shown in Appendix "A".
- viii. The zoning Blocks referred to in Sections 39MMM.2 through 39MMM.11 are shown in Appendix "B".
- ix. The zoning map, being Schedule "A" to the District of Squamish Zoning Bylaw No. 2200, 2011, as amended, is further amended to reflect the rezoning.

READ A FIRST TIME this 28th day of April, 2015.

READ A SECOND TIME this 12th day of May, 2015.

PURSUANT TO THE *LOCAL GOVERNMENT ACT*, NOTICE WAS ADVERTISED ON May 14th AND May 21st, 2015.

PUBLIC HEARING was held on the 26th day of May, 2015.

PURSUANT TO THE *LOCAL GOVERNMENT ACT*, NOTICE WAS ADVERTISED ON June 4th AND June 11th, 2015.

PUBLIC HEARING was held on the 16th day of June, 2015.

READ A THIRD TIME this 16th day of June, 2015.

APPROVED BY THE MINISTER OF TRANSPORTATION the ____ day of _____, 2015

ADOPTED THIS ____ day of _____, 2015.

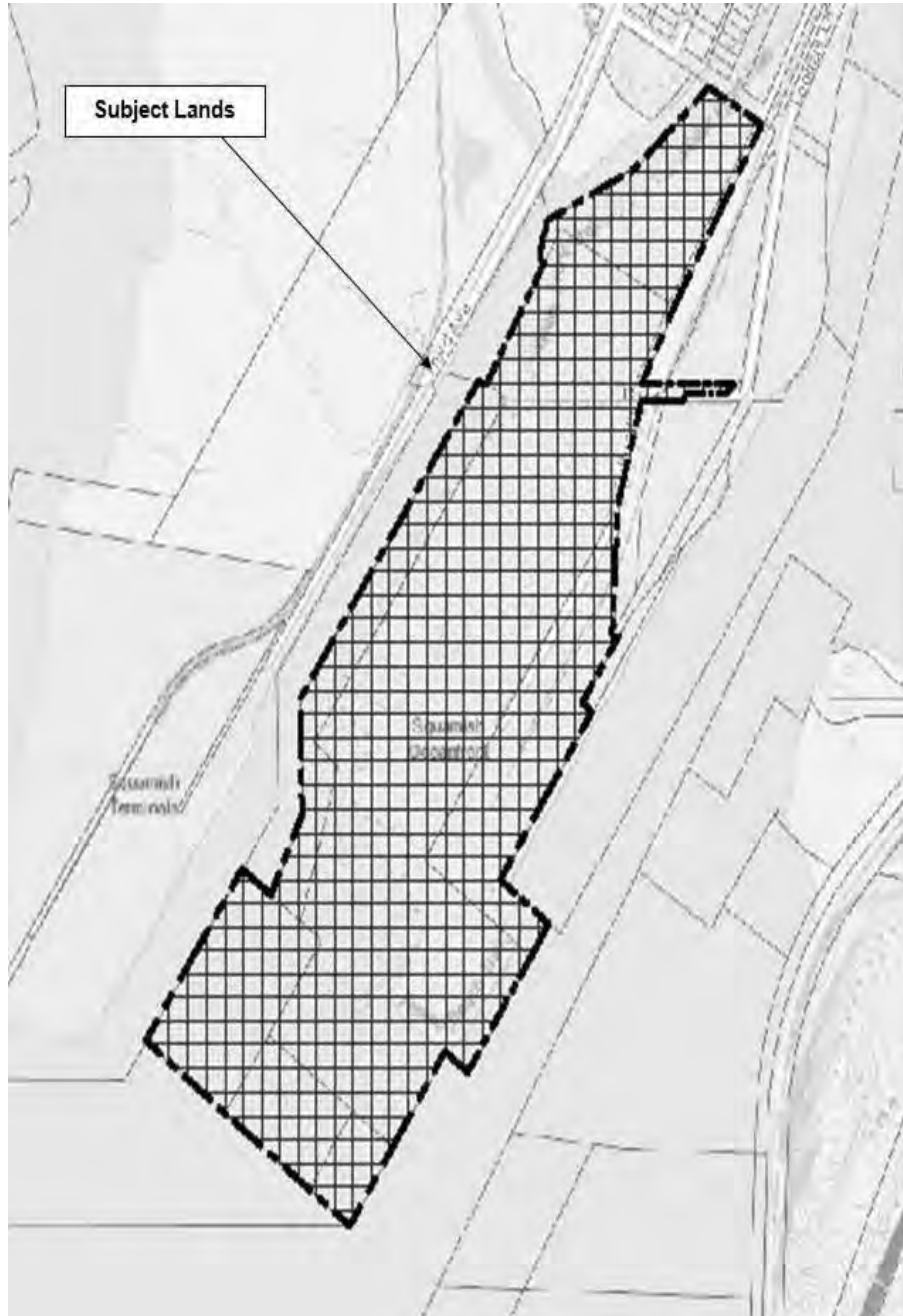
Patricia Heintzman, Mayor

Robin Arthurs,
General Manager of Corporate Services

DISTRICT OF SQUAMISH

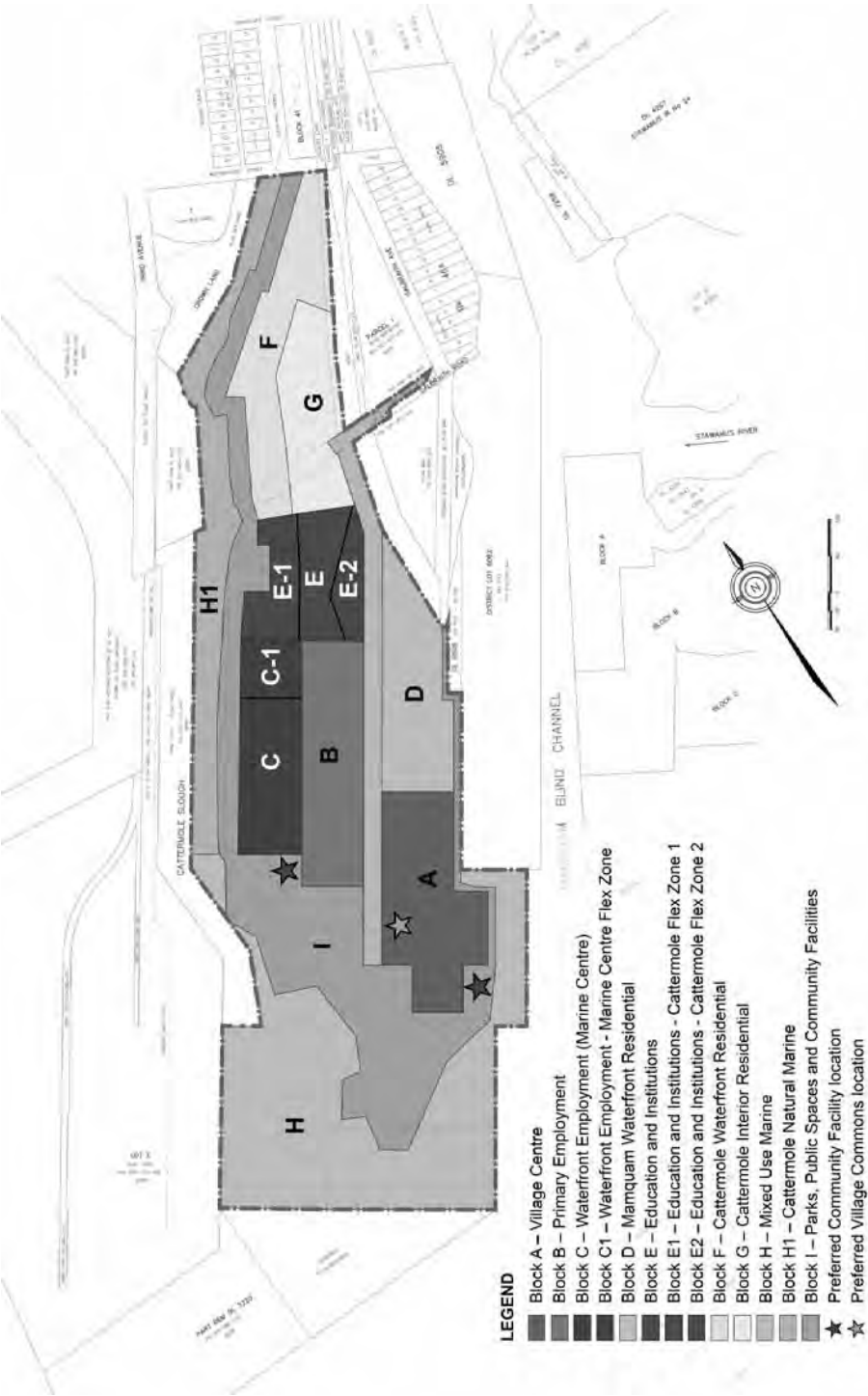
APPENDIX "A"

District of Squamish Zoning Bylaw No. 2200, 2011, Amendment Bylaw
(Comprehensive Development Bylaw No. 69 – Squamish Oceanfront) No. 2386, 2015)



DISTRICT OF SQUAMISH
APPENDIX "B"

District of Squamish Zoning Bylaw No. 2200, 2011, Amendment Bylaw (Comprehensive Development Zone No. 69 - Squamish Oceanfront) No. 2386, 2015



SCHEDULE F

SUBDIVISION BYLAW

DISTRICT OF SQUAMISH

BYLAW No. 2373, 2015

A Bylaw to Regulate the Subdivision and Development of Land

WHEREAS it is deemed desirable to regulate the Subdivision and Development of land in order to promote the orderly Development of the District.

NOW THEREFORE, the Council of the District of Squamish, in open meeting assembled, enacts as follows:

SECTION 1 - PREFACE

1.1 CITATION

This Bylaw may be cited as "District of Squamish Subdivision and Development Control Bylaw No. 2373, 2015".

1.2 PURPOSE

The purpose of this Bylaw is to regulate the Subdivision and Development of land, and to require the provision, design, and construction of Works and Services including Highways. Such regulation is intended to provide orderly and aesthetically pleasing Development; to preserve the established amenities of the District; and to ensure that Subdivisions and Developments are appropriately serviced and best suited to the use for which they are intended.

1.3 ORGANIZATION

This Bylaw is organized into sections dealing with the following subjects:

Section One	Preface
Section Two	Definitions and Interpretation
Section Three	Administration
Section Four	Land Dedications - Subdivision
Section Five	Works and Services Required

1.4 BYLAW SCHEDULES

Attached to and hereby made an integral part of the Bylaw are the following Schedules:

Schedule A	General Requirements
Schedule B	Design Criteria
Schedule C	Standard Drawings
Schedule D	Servicing Agreement Template
Schedule E	Standard Forms
Schedule F	Street Trees
Schedule G	Approved Products List
Schedule H	Downtown Streetscape Standards

SECTION 2 – DEFINITIONS AND INTERPRETATION

2.1 DEFINITIONS

In this Bylaw,

“Applicant”	means the Owner of a Parcel who is applying for the approval of a Subdivision or Building Permit, or a person authorized in writing by the Owner to apply for the approval.
“Approving Officer”	means a person appointed by the District Council to act as Approving Officer pursuant to the provisions of the <i>Land Title Act</i> and <i>Local Government Act</i> .
“Arterial Road”	means a road primarily for through traffic usually on a continuous route. Direct access to abutting land is not a priority.
“Building Permit”	means the authorization in writing or permit issued under the current District Building Bylaw as amended from time to time.
“Boulevard”	means a portion of highway between the curb lines or the lateral boundary lines of a roadway (e.g. edge of pavement) and the adjoining property or between curbs on median strips or islands, but does not include curbs, sidewalks, ditches, or driveways.

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"Collector Road"	means a road that provides for traffic movement between Arterial and other Collectors and Local streets with some direct access to adjacent properties.
"Construction Inspector"	means a person, who, under the direction or supervision of the Consulting Engineer inspects the construction and installation of the Works and Services.
"Construction Schedule"	means a schedule indicating the planned start and completion dates of the major activities involved in constructing and installing the Works and Services.
"Consulting Engineer"	means a Professional Engineer, registered under the Association of Professional Engineers and Geoscientists in British Columbia.
"Developer"	means the Owner or the Developer who has the express written authority to act on behalf of and represent the Owner in carrying out Works and Services under this Bylaw.
"Develop or Development"	means an activity that requires a Subdivision or Building Permit.
"District"	means the Corporation of the District of Squamish or the area within the boundaries of the District of Squamish as the context requires.
"District Engineer"	means the person or company appointed from time to time by the District Council as the Engineer for the District or his or her authorized representative as designated by the District Council from time to time.
"District Inspection"	means periodic inspections by the District Engineer or District Engineering staff of the installed works and Services.
"District Official"	means Approving Officer or other authorized representative of the District designated by the District Council.
"Estimated Cost"	means the total cost of constructing and installing Works and Services estimated by the Owner's Consulting Engineer and approved by the District Official.
"Final Acceptance Certificate (FAC)"	means the written document as set out in Schedule E of this Bylaw by which the District confirms that the Developer has fulfilled the warranty obligations and all other requirements of this Bylaw in relation to Works and Services.

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"Final Subdivision Approval"	means the approval granted by the Approving Officer when all relevant requirements of this Bylaw, the <i>Local Government Act</i> , the <i>Land Title Act</i> , and any other relevant bylaws and legislation have been fulfilled.
"Good Engineering Practices"	means engineering design and construction practices that have been in use for many years and have demonstrated their safety over time, or, design and construction processes and spoken constructability, provided that the processes are based on established engineering principles, including adequate testing of all materials and systems.
"Half Roads"	A half road cross section or minimum requirements in the event that the proponent is required to only construct a half road (i.e. such as minimum road widths, drainage considerations, streetlighting etc.).
"Highway"	has the meaning prescribed by the Community Charter and may be referenced as a Road within this bylaw.
"In-Fill Lots"	Means an undeveloped, surveyed lot located adjacent to or in-between serviced and/or occupied lots.
"Local Roads"	means a roadway whose primary function is to serve vehicle trip ends.
"MMCD"	means the edition of the Master Municipal Construction Document published by the Master Municipal Construction Documents Association, in place at the time of the design of the Works and Services.
"Owner"	<p>means, in respect of real property:</p> <ul style="list-style-type: none">(a) the registered Owner of an estate in fee simple;(b) the tenant for life;(c) the registered holder of the last registered agreement for sale; or(d) the holder or occupier of land held in the manner referred to in Section 228 [taxation of Crown land used by others] or Section 229 [taxation of municipal land used by others], of the <i>Community Charter</i>.
"Parcel"	means any lot, block or other area in which land is held or into which it is subdivided, but does not include a Highway.

District of Squamish
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"Record Drawings"	means a documented record of the constructed Works and Services prepared with sufficient due diligence such that adequate care and attention has been allocated to fulfill the requirements of the Association of Professional Engineers and Geoscientists of British Columbia.
"Road Designations"	means road classification and construction to be defined as local, arterial, collector with major and minor collectors, as identified in the Geometric Design Guide for Canadian Roads, TAC.
"Shallow or Franchise Utilities"	means independent utilities shall mean private companies, crown corporations and regional government utility organizations providing services such as electric power, gas petroleum products, and communications (telephone, cable, microwave and fibre optic lines).
"Small Subdivisions"	means subdivisions that meet the following criteria: a) subdivision of one or two lots, or a subdivision by which fewer than three additional lots would be created if the parcel proposed to be subdivided was itself created by subdivision within the past five years. b) the consolidation of existing parcels.
"Standard Drawings"	means drawings as stipulated under Schedule C.
"Subdivide or Subdivision"	means the division of land into two or more parcels, whether by plan, apt descriptive words or otherwise.
"Substantial Performance"	is as defined by MMCD.
"Total Performance"	is as defined by MMCD.
"Works and Services"	includes Highways, sidewalks, boulevards, boulevard crossings, transit bays, street lighting, wiring, electrical distribution systems, water supply and distribution systems, fire hydrant systems, sewage collection and disposal systems, drainage collection and disposal systems and such other infrastructure or systems that are required by this Bylaw in connection with the Subdivision or Development of land.
"Zone"	means a zone as defined under the District of Squamish Zoning Bylaw.

- 2.2 Unless otherwise defined herein, any word or expression in this Bylaw shall have the same meaning as any similar word or expression in the *B.C. Motor Vehicle Act*, the *Local Government Act*, the District of Squamish Zoning Bylaw, or any regulation or Schedule to the enactment and in case of conflict the *Local Government Act* shall prevail.

2.3 INTERPRETATION

- 2.3.a In this Bylaw whenever words are used implying the Subdividing or Subdivision of land, those words shall be deemed to refer to the division of land into two or more parcels, whether by plan or by meets and bounds description or by a replotting scheme or otherwise.
- 2.3.b Where the text refers to the word "Subdivision" it shall be deemed that the requirements also apply to "Developments", where applicable, which may not involve the Subdivision of land.
- 2.3.c A reference to a statute in this Bylaw refers to a statute of the Province of British Columbia unless otherwise indicated, and a reference to an enactment, including a statute, regulation code or bylaw refers to that enactment as it may be amended or replaced from time to time.

SECTION 3 - ADMINISTRATION

3.1 COMPLIANCE WITH BYLAW

No person shall Subdivide a Parcel or undertake Development of land in the District of Squamish except in compliance with the provisions of this Bylaw.

3.2 AUTHORITY TO ENTER LANDS

The District Official is authorized to enter at all reasonable times on any property or premises to inspect same in connection with their duties under this Bylaw and to ascertain whether the provisions of this Bylaw are being complied with, subject to Section 16 of the *Community Charter*.

3.3 APPLICANT'S RESPONSIBILITY AND OTHER LEGISLATION

Nothing in this Bylaw shall relieve the Applicant from the responsibility to comply with every enactment applicable to their undertaking. Neither the granting of a permit nor the issuance or review of any plans, specifications or documents or any inspection made by any District employee shall in any way relieve the Applicant from compliance with all enactments.

3.4 SEVERABILITY

The provisions of this Bylaw are severable. If any provision is for any reason held to be invalid by the decision of any court of competent jurisdiction, such decision shall not affect the validity of the remaining provisions of this Bylaw.

SECTION 4 – LAND DEDICATION - SUBDIVISION

4.1 HIGHWAY ALLOWANCES

- 4.1.a When the Applicant proposes a Highway allowance in a plan of Subdivision, the District Official will consider the sufficiency of the Highway allowance by determining the road classification. Road Designations shall be based on a hierarchy of roads integrated into the existing or proposed adjoining road pattern, and are determined in relation to land use, configuration of the land, the classification of the existing or approach Highway, in accordance with this Bylaw.
- 4.1.b The Applicant shall provide, without compensation, land for Highway provisions and widening as identified by the Approving Officer in accordance with the *Local Government Act*.

4.2 EXCEPTIONS TO HIGHWAY STANDARDS

In a Subdivision where the road layout is such that a Highway or a portion thereof serves or will serve one or more adjoining properties outside the Subdivision, the District Official may allow the dedication and construction of new Half-Roads along the perimeter of the Subdivision, if the following conditions are satisfied:

- 4.2.a There is sufficient total Highway dedication to provide for two-way traffic flow, sidewalk, street lights, bicycle lanes as defined in the then current Multi-Modal Transportation Plan, and drainage collection system as required; and,
- 4.2.b Additional dedication and pavement width are provided at the intersection of lanes in order to provide turn radius, and at intersections with arterial and collector roads in order to provide traffic turn lane channelization.

4.3 EMERGENCY ACCESS

If an emergency access is required, it shall be provided in accordance with the standards set out in Schedule B to this Bylaw.

4.4 PARKLAND DEDICATION ON SUBDIVISION

- 4.4.a The Applicant shall satisfy the requirements of the District Official with respect to the provision of parkland in accordance with the requirements of the *Local Government Act* and the District Official Community Plan.
- 4.4.b If it is determined that cash-in-lieu of parkland dedication is exercised, the amount to be paid shall be equivalent to 5.0% of the current market value of all the land proposed for Subdivision in accordance with provisions of the *Local Government Act*.

4.5 EXCEPTIONS TO PARKLAND DEDICATION

In accordance with the *Local Government Act*, parkland dedication does not apply to:

- 4.5.a A Subdivision of less than three lots, except as provided in 4.5.d;
- 4.5.b Subdivisions where the smallest lot being created is larger than two (2) hectares;
- 4.5.c The consolidation of existing parcels; or
- 4.5.d A Subdivision by which fewer than 3 additional lots would be created if the parcel proposed to be Subdivided was itself created by Subdivision within the past 5 years.

SECTION 5 – WORKS AND SERVICES REQUIRED

5.1 SERVICING REQUIREMENTS - GENERAL

- 5.1.a Except as herein provided, no person shall Subdivide or Develop land except in conformity with the relevant requirements of this Bylaw and, except as herein specifically provided. All Works and Services required to be constructed and installed and all other requirements of this Bylaw shall be completed at the sole expense of the Developer.
- 5.1.b Unless otherwise approved by a Development Permit, or a Development Variance Permit, issued by the Council or a permitted delegate pursuant to the *Local Government Act*, servicing shall be as set out in this Bylaw and all construction and installation shall be carried out in conformity with requirements of Schedule D to this Bylaw.
- 5.1.c The Owner of any lands which are proposed to be Subdivided or Developed shall provide each parcel of land within the proposed Subdivision or Development with the following:
 - i) **Roads**
All existing Highways immediately adjacent to lands being Subdivided or Developed shall be constructed in accordance with the Standard Drawings and all new Highways within land subject to a proposed Subdivision or Development shall be dedicated and constructed in accordance with the Standards Drawings.
 - ii) **Sidewalks, Boulevards, Streetlighting**
Sidewalks, Boulevards and ornamental street lighting on all Highways in and immediately adjacent to the lands in accordance with the standards contained in Schedules B and C.
 - iii) **Water Distribution System**
A water distribution system including the standard service connection, which shall be constructed in accordance with the standards contained in Schedules B and C, and shall be connected by trunk water mains to an existing municipal water supply system. If a Subdivision or Development is proposed and is not connected to an existing municipal water supply system, the Developer shall

connect the subject land or obtain and demonstrate that all regulatory approvals necessary have been secured.

iv) Sanitary Sewer System

A sanitary sewer collection and disposal system including the standard service connection, constructed in accordance with the standards contained in Schedules B and C, and the sewer system shall be connected by trunk sewer mains to an existing municipal treatment and disposal sanitary sewer system. If a Subdivision or Development is proposed and is not connected to an existing municipal system, the Developer shall connect the subject land or obtain and demonstrate that all regulatory approvals have been secured.

v) Storm Drainage Collection System

A storm drainage collection system including the standard service connection, constructed in accordance with the standards contained in Schedules B and C, and the municipal drainage system shall be connected by trunk drainage mains to a municipal drainage system of the District. If a Subdivision or Development is proposed and is not connected to an existing municipal system, the Developer shall connect the subject land or obtain and demonstrate that all regulatory approvals have been secured.

- 5.1.d If, in the opinion of the District Engineer, the installation of the Works and Services in accordance with this Bylaw in respect of the Subdivision or Development of a particular site would not be in accordance with sound civil engineering practice because such Works and Services are best installed on an area-wide basis, the Owner may, in lieu of constructing and installing the Works and Services be permitted, upon District approval, to make a cash payment to the District, in the amount estimated by the Consulting Engineer as the design construction and installation value of the Works and Services. The District shall hold such payments in a reserve fund to be expended on the installation of such area-wide Works and Services at such time as may reasonably be determined by the District Official. On infill lots and Small Subdivisions if it is not recommended to upgrade the frontage or collect cash in lieu for the District to complete the Works and Services, and when there are no plans to upgrade the entire Highway, then the District Official at the time of Preliminary Layout review or the District Official at the time of the Servicing Agreement or Building Permit has the authority to waive the construction and cash requirements.
- 5.1.e Where distinct neighborhood plans have been approved by Council, in the form of a sub-area development plan, those neighborhood plans shall take precedence over certain otherwise applicable sections of the Bylaw.

5.2 STATUTORY RIGHTS-OF-WAY

For the purpose of constructing and installing or maintaining Works and Services, statutory rights-of-way in the form of the District's standard agreements and plans shall be provided by the Owner, at the Owner's cost, where Works and Services are not located in Highways and shall be registered in the Land Title Office and shall run with the land. It is the responsibility of the Applicant to negotiate and secure any Rights-of-Way or Easements necessary to the application and to process the legal documentation to its registration in Land Title Office, and pay all direct or indirect costs including:

- 5.2.a B.C. Land Surveyor costs;
- 5.2.b Legal fees;
- 5.2.c Registration costs and fees including Land Titles Office fees.

The District Official may require the Applicant to provide a lawyer's or notary's undertaking satisfactory to the District's solicitor to ensure registration of these documents is completed.

5.3 EXCEPTIONS TO SERVICING REQUIREMENTS

5.3.a Where the Works and Services Exist

Without limiting the generality of Section 5.1, the Applicant will not be required to provide a particular Work or Service where that particular work or service exists in accordance with the standards required in Schedules A, B and C to this Bylaw.

5.3.b Subdivisions for Specific Purpose

The Works and Services requirements of this Bylaw do not apply to a Subdivision which creates only:

- i) a Highway dedication;
- ii) park land;
- iii) a parcel for the installation of public utilities and related structures and equipment;
- iv) a consolidation or a lot line adjustment, in which the number of buildable lots is not increased and the land use is single-family or two family only.

5.4 WORKS AND SERVICES IMPRACTICAL TO BUILD

- 5.4.a If it is not practical to build all or part of the required Works and Services until a project of greater scope proceeds, and
- 5.4.b If the Work or Service is not immediately required for the Subdivision or the building,

the Developer may not be required to build the part so identified by the District Official. Instead the Developer may provide the District with security in the form of cash, certified cheque or irrevocable Letter of Credit in an amount, accepted by the District Official, to equal the cost of designing, constructing and providing the Work or Service. The funds will be placed by the District in a reserve fund until they are used to provide or complete the Work or Service.

5.5 LEVELS OF WORKS AND SERVICES REQUIREMENT

If Development is connected to existing servicing, the Developer must provide all municipal services including roads conforming to the typical road cross sections and required standards. The exception to this condition is when a Development is shown as Rural under the Official Community Plan and not connected to existing servicing. In these locations, the Developer shall provide all municipal services but may provide sanitary services by way of a septic system that conforms with Provincial enactments and water services by way of a well that conforms with Provincial enactments.

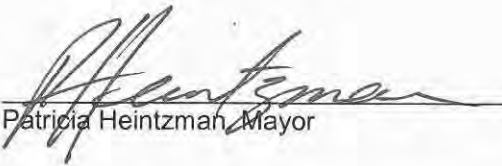
District of Squamish
Subdivision and Development Control Bylaw No. 2373

REPEAL

This bylaw repeals and replaces the "District of Squamish Subdivision and Control Bylaw No. 2212, 2012".

READ A FIRST, SECOND AND THIRD TIME this 12th day of May, 2015.

ADOPTED this 10th day of May, 2015.


Patricia Heintzman, Mayor
Robin Arthurs, Corporate Officer

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SCHEDULE A

SUBDIVISION AND DEVELOPMENT CONTROL BYLAW NO. 2373, 2015

GENERAL REQUIREMENTS

1.0 GENERAL INFORMATION

2.0 GENERAL DESIGN CRITERIA

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SECTION 1 – GENERAL INFORMATION

1.1 INTRODUCTION

Schedule A to the Subdivision and Development Control Bylaw identifies the General Information required by the District.

1.2 SCOPE AND USE OF SCHEDULE A

Schedule A is prepared for providing guidelines to the Developer and the development industry in the design of engineering servicing facilities and systems to be incorporated in the utilities infrastructure of the District.

It is intended to provide a minimum design criteria and standard for proposed works. The onus is on the Developer to ensure that their designs meet accepted engineering principles and best practices and are adequate for the site conditions and their accepted uses.

1.2.a Master Municipal Construction Documents (MMCD), Current Edition

The provisions of the Bylaw are to be applied in conjunction with the Master Municipal Construction Documents, most current edition, which otherwise apply to all Works and Services constructed within the District.

Where the provisions of this Bylaw are in conflict with the Master Municipal Specifications, the provisions of this Bylaw take precedence, unless otherwise agreed to in writing by the District Engineer.

1.2.b Master Municipal Construction Documents (MMCD), Design Guideline Manual, Current Edition

The provisions of this Bylaw are to be applied in conjunction with the Master Municipal Design Guideline Manual, most current edition, which otherwise applies to all Works and Services constructed within the District.

Where the provisions of this Bylaw are in conflict with the Master Municipal Design Guideline manual, the provisions of this Bylaw take precedence, unless otherwise agreed to in writing by the District Engineer.

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SECTION 2 – GENERAL DESIGN CRITERIA

2.1 INTRODUCTION, SURVEY INFORMATION, DRAWING SUBMISSION

The purpose of this section is to outline the minimum standards and requirements the District will accept in the design for Works and Services.

It is the specific intent of the District to require quality submissions for design of Works and Services and Record submissions. It is recommended that whenever engineering works are required or proposed, the Consulting Engineer arrange for a pre-design meeting to ensure compliance with the latest District standards, specifications and policies.

Incomplete or substandard design submissions will be returned to the Consulting Engineer. A subsequent re-submission which remains incomplete or sub-standard will result in a request to meet with the Consulting Engineer, the Developer and the District Engineer.

Where a question arises, please contact the District Engineer for clarification, in writing.

All submissions shall reflect and comply with the following:

- 2.1.a All applicable requirements of this Bylaw.
- 2.1.b All applicable requirements of the District, including but not limited to:
 - i) The Official Community Plan
 - ii) The current Zoning Bylaw(s)
 - iii) The current Building Bylaw
- 2.1.c Be designated and dimensioned in Standard Metric units.

2.2 GEOTECHNICAL AND HYDROGEOLOGICAL DESIGN CONSIDERATIONS

- 2.2 The Consulting Engineer shall incorporate Geotechnical and Hydrogeological input into their design such that an appropriate level of Geotechnical Investigations, calculations and recommendations are performed to confirm that the Works and Services will perform as intended for the duration of the design life.

2.3 SURVEY INFORMATION

- 2.3.a Anyone employed by the Developer or the District of Squamish must have permission of the registered Owner is required before entering private property.
- 2.3.b All surveys shall be to elevation and coordinates derived from the Geodetic Datum, Geodetic Survey of Canada and NAD83.

Elevations shall be relative to Geodetic Datum. The horizontal coordinates shall be referenced to the NAD83 UTM coordinate system. A minimum of two reference points with coordinates

shall be shown on each design drawing. A minimum of one reference bench mark or GPS control point with elevation shall be shown on each design drawing.

- 2.3.c Originating benchmarks and integrated survey monuments shall be noted on all plans as well as those to be established in the work.
- 2.3.d Copies of legible field notes shall be made available to the District upon request.
- 2.3.e Centre lines (or offset lines) or base lines are to be marked and referenced in the field and all chainages and coordinated layout points shall be keyed to the legal posting.
- 2.3.f All existing items such as manholes, catch basins, valves, fire hydrants, poles, existing dwellings, fences, trees, hedges, watercourses and setbacks, and unusual ground conditions shall be noted.
- 2.3.g Where applicable, roadway cross sections and other pertinent features will be required. The section shall include centreline, edge of pavement or gutter line, edge of shoulder, ditch invert, top of ditch, property line, and an existing ground elevation inside property line.

2.4 DESIGN DRAWING SUBMISSION

- 2.4.a All drawings submitted to the District shall be prepared in metric, on standard A1 sheets/scales, in accordance with the following requirements and all other applicable requirements of this Bylaw.
- 2.4.b All drawings submitted to the District shall be signed and sealed by a Professional Engineer registered under the Association of Professional Engineers and Geoscientists of British Columbia.
- 2.4.c All drawings submitted to the District shall be based on digital coordinates that derive from the project survey information. Design submissions that originate purely from baseline offsets either physical or otherwise, will not be accepted by the District.
- 2.4.d All engineered designs shall be based on digital coordinates that derive from the project survey information. A complete set of Engineering Design drawings shall include, in the following sequence:

i) Cover Sheet

The Cover Sheet shall note the Consulting Engineer's name, the Developer's name, the District project number, if applicable, the legal description of the lands involved, a site plan at a 1:5,000 scale, and an index of plans, with revision numbers.

The site plan shall note all proposed roads and the proposed subdivision layout. The cover sheet may be utilized to show the drainage catchment area.

General notes should be located on this sheet.

ii) Key Plan

The Key Plan shall be at a 1:500 scale and shall note all proposed services, including street lighting. If more than one sheet is required, note the westerly or southerly portion first and identify as Key Plan "A" with additional plans noting "B" and "C", etc.

iii) Storm Water Control Plan

The Storm Water Management Plan shall be 1:500 scale and identified as per key plan system if more than one sheet is required.

iv) Water

Plan and profile drawings shall show all grades, inverts, curves, radii, valves, hydrants, bends, and other features. The scale shall be 1:500 for plans and 1:50 for profile. The full pipe shall be shown for the watermain on the profile. All cross over points with sewers shall be noted and where the separation between the invert of the watermain and the top of any sewer is less than 0.5 m, the watermain shall be protected in accordance with Ministry of Health requirements.

v) Storm Sewers

Plan and profile drawings shall show grades, inverts, manholes, catch basins, and other features. The scale shall be 1:500 for Plan and 1:50 for profile. Symbols to denote the service connection elevation at the property line shall be shown on the profile plan, as well as the minor and major system hydraulic grade lines. The full pipe shall be shown on the profile.

vi) Sanitary Sewers

Plan and profile drawings shall show grades, inverts, manholes, and other features. The scale shall be 1:500 for Plan and 1:50 for profile. Symbols to denote the service connection elevation at the property line shall be shown on the profile plan. The full pipe shall be shown on the profile.

vii) Roads

Plan and profile drawings shall show all driveways, alignments and grades. The scale shall be 1:500 for plans and 1:50 for profiles.

viii) Road Cross Sections

Road cross-sections shall be scaled at 1:100 horizontal and 1:50 vertical and shall note the existing ground elevation, the proposed elevations of the road centreline, the curb and gutter (or road edge) and property lines. Cross-sections are required at 20.0 m intervals. Additional sections may be required where excessive cuts or fills are involved.

ix) Ornamental Street Lighting Plan

Ornamental Street Lighting plans shall be a plan view (1:500) of the street lighting proposal designed, signed and sealed by a Professional Engineer. There shall be General Notes included on the Plan noting reference(s) to the District Standards and Specifications and the appropriate design criteria. Any street lighting plan(s) should be accompanied with the photometric calculations.

x) Construction Details

Construction Details shall show a proposal for construction which are not covered or specifically detailed in the District Standards and Specifications or as per MMCD. Where there is a District Standard, it is expected to refer to the Drawing Number. It is not necessary to include or provide drawings for work(s) for which there is a District Standard Drawing.

xi) Lot Grading Plan

Lot Grading Plan shall be at 1:250 scale and shall generally illustrate post-development contour lines at a maximum of 1.0 m intervals which shall match the pre-development contour lines at the development boundary, or as designed by the Consulting Engineering

and approved by the District Engineer. The topographic information shall extend a minimum of 30.0 m outside of the development boundary. All existing lot corner elevations to be illustrated (not circled) and all proposed lot corner elevations to be illustrated (circled). Plan to illustrate proposed building envelop with the Minimum Building Elevation (MBE) noted. Proposed lot slopes to be noted and any retaining structures, significant grade breaks and surface drainage infrastructure to be illustrated.

xii) Erosion and Sediment Control Plan

Erosion and Sediment Control Plan shall be at 1:500 scale and shall general illustrate the extend of lot by lot tree clearing, grubbing and stripping location of on-site sediment and erosion control features to restrict the migration of sediments during construction, including silt fencing, sediment basins, construction vehicle access points, construction vehicle wash facilities, maintenance stockpile storage locations etc. Drawings shall provide details and notes describing the installation and maintenance of all features and shall provide delineation, with appropriate construction notes of any environmentally sensitive areas and features. Plan shall identify any works and services required by other approval authorities' requirements.

xiii) Signage design to be submitted and included with the line marking road design and boulevard planting drawings.

2.4.e The Consulting Engineer's seal and signature shall be noted on sheets of final design submissions. The Consulting Engineer's seal and signature shall confirm that the Works and Services as proposed are structurally sound, comply with the applicable design criteria of this Bylaw, and Good Engineering Practice.

2.4.f Notwithstanding the previously detailed requirements, the following additional information is to be noted in design submissions to the District of Squamish:

i) The size, grade, inverts, and type of material on profile sections;

ii) The locations, off-sets, curvatures, size and identification of the mains noted on the Plan sections;

- a) the clearance between mains at cross-over points;
- b) all existing structures, including houses, sheds, fences, wells, septic tanks and fields, shall be shown on the appropriate drawings(s), with a notation indicating their fate (i.e. to be removed, filled, etc.);
- c) in rural subdivisions, with an open ditch drainage system, note the size of (future) driveway culverts required to conform to the design.

iii) The first complete design submission shall consist of:

- a) two complete sets of drawings;
- b) soils investigation report (to verify road structure design);
- c) photometrics (lighting calculations) for street lighting plans if specifically required by the District Engineer;
- d) all applicable utility hydraulic calculations and structural (water, sanitary, storm sewer);
- e) any additional design briefs identified as necessary by the District Engineer;
- f) Construction and installation cost estimate (under seal of the Consulting Engineer).

- iv) Subsequent design submissions requiring changes to the previous submission shall consist of:
 - a) two complete sets of drawings;
 - b) a complete construction cost estimate;
 - c) all submissions subsequent to first submission shall have highlighted any changes made by the Consulting Engineer which are in addition to "Red Line" changes required by the District;
 - d) items "Red Lined" must be addressed by the Consulting Engineer. Failure to do so will result in submissions being returned.
- v) The final submission for District acceptance shall consist of:
 - a) two complete sets of drawings;
 - b) digital copies of design drawings in pdf and AutoCAD (latest version) format.

- 2.4.g All design and record drawings to be submitted based on MMCD standards.
 - i) Digital drawing submissions shall follow the latest MMCD standard for AutoCAD symbols, layers & line types, with drawing creation using MMCD AutoCAD templates.

2.5 CONSTRUCTION COST ESTIMATE CALCULATIONS

- 2.5.a The construction cost estimate shall be broken down in a format as defined in MMCD.
- 2.5.b Hydro, gas, cable and telephone cost estimates are required and the estimated costs are to be included in the security deposit required under the Subdivision Servicing Agreement. These items and costs will be reviewed and amended where or if necessary.

2.6 SERVICE CONNECTION CARDS

The Consulting Engineer will provide service connection cards for each development where available. These cards are to indicate clearly and accurately, the location, depth and size, and material of construction, of each District utility connection. The District project number shall be required on all cards. Service Connection Cards are considered part of the Record submission and shall be provided in paper copy in addition to pdf and AutoCAD (latest version) formats.

2.7 RECORD SUBMISSIONS AND ASSET MANAGEMENT SCHEDULE

The following procedures are required in the delivery of Record Submissions and Asset Management Schedules to the District.

- 2.7.a The Consulting Engineer shall submit two complete sets of paper prints of the revised design drawings reflecting the as-constructed works and services, including hydro, telephone and cable Records, except for the road cross-section sheet(s), and a complete set of Service Connection Cards for District review.
- 2.7.b One marked-up set of the Record paper prints will be returned to the consultant for revision. If there are minor changes, it may be requested that the prints with the revisions noted, be submitted for District acceptance. If there are numerous amendments, it is likely that the Consulting Engineer will be required to resubmit two sets of revised paper prints for a second review.

- 2.7.c The Consulting Engineer will be required to submit the following:
 - i) A digital copy of the CAD files containing the Record drawings.
 - ii) A digital .pdf files containing Record drawings signed and sealed by the Professional Engineer.
 - iii) Two sets of paper prints with the signature and seal by the Professional Engineer who supervised the required inspections.
- 2.7.d The District shall receive all documentation in 2.7.c prior to issuing Substantial Performance for the project unless otherwise approved by the District Official.
- 2.7.e A Schedule for Asset Management and Costing consisting of quantities and actual unit prices, of all underground and surface works infrastructure to be owned by the District. Works and Services shall be grouped by road segment between intersections. Where assets might overlap at intersections, the asset is to be assigned to the primary road. An Excel and .PDF copy is to be submitted in a format as prescribed by the District.

2.8 Squamish OCP Bylaw

- 2.8 In regard to the Squamish Peninsula area shown outlined in red on Schedule "AC" to the District of Squamish OCP Bylaw 2100, 2009, if a provision of this Bylaw respecting a standard for a work or service is different than a provision of Schedule "N" to the District of Squamish OCP Bylaw 2100, 2009, the provision of the OCP will govern the work or service instead of the provision of this Bylaw.

SCHEDULE B

SUBDIVISION AND DEVELOPMENT CONTROL BYLAW NO. 2373, 2015

DETAILED DESIGN CRITERIA

SCHEDULE B **DESIGN CRITERIA**

1.0 WATER SYSTEM

2.0 SANITARY SYSTEM

3.0 STORM SYSTEM

4.0 ROADS

5.0 ELECTRICAL DISTRIBUTION AND ILLUMINATION

SECTION 1 – WATER SYSTEM

1.1 GENERAL

- 1.1.a The water distribution system design should be prepared under the direction of a Design Professional who has the appropriate experience and is registered with the Association of Professional Engineers and Geoscientists of British Columbia.
- 1.1.b Consulting Engineers retained by the Owner to design the works and services must consult with the District Engineer to determine what existing information may be of assistance to them.
- 1.1.c The water system design is to be done utilizing a calibrated water model acceptable to the District unless the systems design, as determined by the District Engineer, is not complex.
- 1.1.d A Geotechnical investigation for soil corrosiveness is to be carried out for all proposed metallic fittings and in areas of ductile iron, copper or steel pipes and submission shall include recommendations for necessary corrosion protection of all infrastructure susceptible to damage due to soil corrosion.

1.2 PER CAPITA DEMAND

- 1.2.a The design criteria noted in Table 1.1 must be used for most applications. Where the flow characteristics of the development area are substantially different, the criteria may be modified.

Table 1.1 – Per Capita Demand	
Average daily demand, domestic flow	455 litres/capita/day
Maximum daily demand, domestic flow	2x average day demand
Peak hour demand, domestic flow	3x average day demand

- 1.2.b Non-residential demand is defined by MMCD.
- 1.2.c Despite the design criteria for the average daily per capita demand for domestic flow of water at the rate of 455 litres/capita/day under Table 1.1, the design criteria for the average daily per capita demand for domestic flow of water for the area of the Squamish Peninsula, shown outlined in red on Schedule “AC” to the District of Squamish OCP Bylaw 2100, 2009, is 200 litres/capita/day, provided that the design criteria for irrigation demand for the area is 1000 litres/hectare/day.

1.3 FIRE FLOW DEMAND AND FIRE FLOW STORAGE

- 1.3.a Fire flow and storage demand are defined by MMCD and Fire Underwriter Survey of Canada.

- 1.3.b Where a difference arises between MMCDs minimum requirement and the “Water Supply for Public Fire Protection 1999” (or latest edition) published by Fire Underwriters Survey, the more stringent requirements shall take precedence.

1.4 WATER DISTRIBUTION SYSTEM PIPE FORMULA

- 1.4.a The system shall be designed to provide day-to-day domestic supply and demand flows for fire protection i.e. MDD plus fire flow.
- 1.4.b Design computations for water distribution systems will be based on the Hazen-Williams formula.

1.5 WATER PRESSURE

- 1.5.a The design criteria noted in this subsection must be used except where, in the opinion of the District Engineer, the flow characteristics of the development area are substantially different, at which time the criteria may be modified to take into account the differences.
- 1.5.b The water system must be designed to provide domestic water at the design building main floor elevation of each parcel in accordance with Table 1.2.

Table 1.2 – Design Pressures	
Minimum pressure at Peak Hour Demand	300 kPa (44 psi)
Maximum allowable pressure	850 kPa* (123 psi)
Minimum pressure for Fire Flow plus Max Day Demand	150 kPa (22 psi)

*Subject to approval from the District Engineer, the maximum allowable pressure may be increased to 1035 kPa (150psi) for systems with multiple pressure zones.

1.6 HYDRAULIC NETWORK CONSIDERATION

- 1.6.a Watermains must be looped. Where dead ends are unavoidable, and approved by the District Official, blow-offs or blow-downs should be provided. In no instance shall a permanent dead end exceed 200 m in length. Blow-off and blow-down sizes are:
- i) 50 mm diameter for 100 mm and 150 mm diameter watermains
 - ii) 100 mm diameter for 200 mm diameter and larger watermains
- 1.6.b Where practical, and approved by the District, a hydrant may serve a secondary role as a blow-off.
- 1.6.c Where the water system network is inadequate, installation of supplementary mains may be required and may necessitate the provision of rights-of-way in favour of the District.
- 1.6.d In residential areas, water mains servicing fire hydrants must be 150 mm diameter or larger.
- 1.6.e Water mains in commercial/industrial/institutional areas shall be designed to take into account anticipated demands and fire flows, and the minimum allowable size is 200 mm.

- 1.6.f The maximum allowable design velocity under fire flow conditions should be 3.5 m/s. The minimum velocity shall be 0.15 m/s.

1.7 MINIMUM DEPTH OF COVER

Watermains and services must be installed at sufficient depth to:

- 1.7.a Prevent freezing. Soil type and groundwater levels should be considered. Minimum depth of cover 1.0 m (from the finished surface of the road or grade to the top of the pipe).
- 1.7.b Clear other underground utilities.
- 1.7.c Provide structural and mechanical protection from external loads.

1.8 MINIMUM CLEARANCE

- 1.8.a At all locations, there must be a minimum lineal horizontal clearance of 1.0 m between the water main and other existing or proposed underground services or open ditches, except sanitary sewer and storm drains.
- 1.8.b A minimum horizontal clearance of 3.0 m must be maintained between the water main and a sanitary sewer or storm drain, or where this is not possible, the clearance shall be in accordance with the Ministry of Health regulations.
- 1.8.c Where it is necessary for the water main to cross other underground services, the crossing must be made at an angle greater than 20 degrees horizontal.
- 1.8.d The design drawings must indicate whether the water main passes over or under other underground services it is crossing.
- 1.8.e Within 300 mm clearance, concrete line crossing protection is required.
- 1.8.f Where a watermain crossed over or under another storm or sanitary main, it shall be designed and installed per MMCD standard drawings G6.

1.9 HORIZONTAL ALIGNMENT AND CORRIDORS

- 1.9.a Water mains must be normally designed to be parallel to the road centerline.
- 1.9.b Water mains must be located within the designated corridor normally in the road Right-of-Way or a dedicated easement as indicated in the applicable Standard Drawings of the typical cross section for that road.
- 1.9.c Curved mains will not be permitted.
- 1.9.d Water main extensions shall extend to and terminate at the furthest property line of the last lot it services complete with blow-down.

- 1.9.e When the utility is required to cross private land(s), the Right-of-Way or an Easement must be surfaced and graded accordingly to allow access for District maintenance vehicles and equipment to repair or replace the utility line and be a minimum of 3.0 m wide, or at the discretion of the District Engineer. The Right-of-Way or an Easement shall be registered on title.

1.10 VERTICAL ALIGNMENT

- 1.10.a Water mains must be designed to minimize high points in the main. Where a high point is unavoidable, an air release valve should be installed at that point.
- 1.10.b A fire hydrant or blow down must be installed at low points in the water main.

1.11 VALVES AND TEES

- 1.11.a In general, valves must be located as follows:
- i. In intersections, in a cluster at the pipe intersection or at the project property lines, to avoid conflicts with curbs and sidewalks:
 - 1) 4 valves at "X" intersection;
 - 2) 3 valves at "T" intersection, including hydrant branch tees.
 - ii. Not more than 200 m apart for water trunk mains;
 - iii. Must be at both ends of a utility Right-of-Way, water course line or Provincial Highway;
 - iv. It is possible to isolate a section of water main by operating no more than 4 valves;
 - v. In locations and at a frequency so that not more than one hydrant is out of service when a section of the main line is turned off;
 - vi. Additional valving may be required due to phasing of subdivision development and as determined by the District Engineer.
- 1.11.b
- i) Resilient Seat Gate valves are required on mains smaller than 450 mm diameter;
 - ii) Butterfly valves are required on mains 450mm or greater in diameter.

1.12 HYDRANTS

- 1.12.a The Consulting Engineer must consider the existing and intended use in the area, and ensure that adequate spacing is provided in accordance with the Standard Hydrant Distribution Table in the "Water Supply for Public Fire Protection 1999" published by Fire Underwriters Survey.
- 1.12.b Hydrants shall be located in general at street intersections and not more than 150 m apart nor more than 90 m from a building entrance.

- 1.12.c The design and location of the hydrants shall be a minimum 1.5 m clear of existing or proposed utilities and features such as street lights, power poles, transformers or driveways, etc., and shall be 2.0 m back from curb or 0.5 m back of sidewalk.
- 1.12.d In mid-block locations, fire hydrants shall be located at the property line corners, unless otherwise approved.
- 1.12.e Hydrant access provisions may be required and placed strategically and shall be reviewed and approved by the District Engineer.
- 1.12.f Minimum distance from the finished ground elevation is 450 mm (18 inches) as illustrated on the Standard Drawings. The maximum distance for this measurement is 815 mm.
- 1.12.g Where the road cross-section provides ditched drainage, a culvert crossing shall be provided to permit unobstructed access up to the fire hydrant. Culverts shall be installed per MMCD and/or District standard drawings.

1.13 AIR VALVES

- 1.13.a The general application of the three types of air valves must be:
 - i. Air / Vacuum valves for filling or discharging mains and preventing negative pressures;
 - ii. Air release valves at high points for small air release during normal operation;
 - iii. Combination valves for combination air/vacuum.
- 1.13.b Combination air valves must be installed at the summit of all mains 250 mm diameter and larger, except where the difference in grade between the summit and valley is less than 600 mm.
- 1.13.c In the event that an air valve chamber requires an access hatch, the hatch shall be as per the requirements of a reservoir hatch.

1.14 BLOW OFFS / TEST POINT

- 1.14.a Blow-offs or hydrants are required at the dead ends of all water mains.
- 1.14.b Test Points shall be installed on all watermains in order to provide for the ability to collect water samples in accordance with AWWA C651. Install test point assemblies as per manufacturers' recommendations.

1.15 THRUST RESTRAINT

- 1.15.a Mechanical joint restraints shall be provided at all fittings requiring thrust restraint. The Consulting Engineer shall indicate on the design drawings the number of joint restraints required to resist the thrust at the fittings.

- 1.15.b. The Consulting Engineer's design may use concrete thrust blocks, the design shall give due regard to soil bearing pressures, pipeline pressure transients and expected test pressures. Thrust block design calculations and soil bearing pressures must be shown on the design drawings.
- 1.15.c Mechanical joint restraints shall be used on all water main joints designated by the District Engineer as "lifeline service mains in case of disaster". The decision as to which mains are to be so designated is at the discretion of the District Engineer.

1.16 SERVICE CONNECTIONS AND WATER METERS

- 1.16.a Service connection size should be calculated on the basis of the designated land use including sprinkler systems and/or on-site hydrants, where applicable. The minimum size is 38 mm or larger diameter to meet required sprinkler demand.
- 1.16.b All water connections for industrial, commercial and institution land use shall have a double check valve installed on the private system. The level of backflow protection shall be based on an assessed risk of potential backflow contamination.
- 1.16.c Main stops must be staggered and not less than 2.0 m apart, along the main line. All connections to have stainless steel inserts and include poly pipe specifications.
- 1.16.d Services and curb stops must have a minimum cover of 1.0 m and must not be deeper than 2.0 m.
- 1.16.e All single family detached housing developments with the exception of bareland strata developments shall require water meter boxes only, complete with setter and spools. All other developments shall require the installation of water meters for domestic flows.
- 1.16.f Each single-family lot shall be metered separately. Strata lots, including bareland strata lots, shall provide the meter at the property line, or as directed by the District Engineer.
- 1.16.g All meters, where required, shall be supplied and installed by the Developer under the direct supervision of the District staff.
- 1.16.h Meters can be installed for non-single family residence in an outdoor enclosure at the Developer's expense. Location shall be as approved by the District Engineer.
- 1.16.i All meters shall be easily accessible to the District at all times for the purposes of emergency, reading and/or maintenance activities.
- 1.16.j All meters in excess of 100 mm to be compound meters.
 - a) Access hatch to be as per the access requirements of the Pressure Reducing Stations.
- 1.16.k Outside meter chambers, vaults or enclosures shall include:
 - i. watertight underground structures;
 - ii. drainage and ventilation;
 - iii. protection against freezing;
 - iv. adequate access and interior space for maintenance and equipment removal;

- v. minimum headroom of 2.0 m;
 - vi. permanent ladder to WorkSafe regulations;
 - vii. piping primed and painted with a rust-inhibiting paint;
 - viii. metering and readout devices as required;
 - ix. meter bypass;
 - x. remote radio reading capability;
 - xi. additional requirements as identified by the District Engineer.
- 1.16.l Each unit of a duplex must be serviced individually. A carriage house shall be serviced from the main service connection or through the main residence.
- 1.16.m Meter boxes are to be a product from the approved product list (attached as appendix to this bylaw) and are to register low flows.

1.17 RESERVOIR

- 1.17.a Pre-Design Requirements - The Consulting Engineer retained by the Owner to design the Works must obtain approval from the District that the siting of the reservoir is acceptable. Prior to commencing detailed design, the Consulting Engineer must submit a pre-design report that addresses the design considerations of this criterion. Approval of the pre-design concept from the District Engineer must be obtained prior to the Consulting Engineer commencing detailed design.
- 1.17.b Reservoirs, where required, shall be designed to suit the particular circumstances. In general, daily reservoir capacity shall be not less than:
- Total Storage Requirement = A + B + C
- Where:
- A = Fire Storage (from Fire Underwriters Storage Guide)
B = Equalization Storage (25% of maximum day demand)
C = Emergency Storage (25% of A + B)
- 1.17.c Reservoir design must incorporate the following features:
- i. Structural Design shall be in accordance with the latest edition of the BC Building Code and any one of the following specialty codes:
 - a. American Concrete Institute (ACI) 350/350R: Code Requirements for Environmental Engineering Concrete Structures, and Commentary;
 - b. Portland Cement Association (PCA): Circular Concrete Tanks Without Prestressing;
 - c. ACI 350.3/350.3R: Seismic Design of Liquid Containing Concrete Structures, and Commentary;
 - d. American Waterworks Association (AWWA) D110: AWWA Standard for Wire and Strand-Wound Circular Prestressed-Concrete Water Tanks;

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- e. AWWA D115: AWWA Standard for circular Prestressed Concrete Water Tanks with Circumferential Tendons;
 - f. AWWA D100: AWWA Standard for Welded Steel Tanks for Water Storage;
 - g. AWWA D103: AWWA Standard for Factory-Coated Bolted Steel Tanks for Water Storage;
- ii. 2 cells, each containing one-half of total required storage cell volume and capable of being drained and filled independently, unless specifically approved otherwise;
- iii. Each cell is to have an access opening in the roof for cleaning and maintenance minimum dimension 900 mm x 900 mm to be located so that the overflow pipe is clearly visible inside the reservoir, when viewed from the hatch. Emergency storage is required;
- iv. At all access hatches, a survey mark inlaid inside showing the geodetic elevation is to be provided;
- v. Access hatch(es) to have the following:
 - a. aluminum 6.4 mm (1/4 inch) tread plate;
 - b. perimeter drain;
 - c. perimeter sealing gasket;
 - d. slam lock with aluminum removable sealing plug and opening tool;
 - e. flush lift handle;
 - f. gas spring assist cylinder;
 - g. 90 degree hard open arm;
 - h. flush fitting padlock tang.
- vi. The hatch must be reinforced for 1,465 kg/m² (300 lbs. / sq.ft.);
- vii. All fasteners for the hatch to be made of 316 stainless steel;
- viii. Ventilation pipes or openings sized to handle appropriate intake and exhausting volumes of air for filling and drawing the reservoir;
- ix. Reservoir floor shall slope to drain sump;
- x. Drain sump to be a minimum of 1000 mm x 1000 mm x 400 mm, invert of drain pipe to be flush with sump floor, grating to be installed over sump;
- xi. Sub-drain under floor to collect and drain any leakage (may be connected to overflow pipe provided suitable measures are incorporated to prevent surcharging). Overflow drain to be provided and sized to transmit the maximum pump discharge with all pumps running;
- xii. An aluminum interior wall ladder is required from roof access to floor. All ladders must meet WorkSafe regulations with supply attachment points for fall arrest equipment;
- xiii. Where public access could be gained to reservoir, install appropriate fall prevention railings including confined space davit arm mounts;
- xiv. Re-chlorination may be required. The Consulting Engineer retained by the Owner to design the Works is to review this need based on demand forecasts;

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- xv. All pipe work within the reservoir to be PVC Schedule 80 except overflow, which may be steel or cast iron, coated to AWWA standards;
- xvi. All metal parts within the reservoir including bolts, nuts, screws, anchors, ladders etc. to be stainless;
- xvii. Reservoir inlet pipe to terminate with a diffuser positioned opposite the reservoir outlet and a distance of $\frac{3}{4}$ the length of the reservoir from the outlet. Diffuser to cover $\frac{3}{4}$ the wall length;
- xviii. Ports in diffuser pipe to be engineered to produce circulation within the reservoir during fill cycle;
- xix. Diffuser for dechlorination to be provided and to incorporate removable end caps;
- xx. Backup high and low level control balls for each cell set at 40% and 95% levels, (not to contain lead or mercury);
- xxi. A Programmable Logic Controller (PLC) control system connected to the District of Squamish SCADA system;
- xxii. The reservoir must be cleaned and disinfected to AWWA requirements;
- xxiii. Gated chain link perimeter fencing may be required to address safety issues;
- xxiv. Landscaping acceptable to the District is to be provided including irrigation;
- xxv. Manuals to be supplied as per "Manuals" section;

1.17.d Reservoir Valve Chamber must incorporate the following features:

- i. All valves associated with the reservoir;
- ii. Entrance at grade large enough to permit safe removal of largest single piece of equipment;
- iii. Lifting beams and hoists where necessary to enable removal of equipment or components;
- iv. Floor drains;
- v. Separate inlet and outlet piping including check valves to separate inlet and outlet flows.
- vi. All inlet and outlet piping to incorporate a 19 mm ($\frac{3}{4}$ inch) sampling port with isolating ball valve;
- vii. A 19 mm ($\frac{3}{4}$ inch) PVC Schedule 80 sample line with isolating ball valve for each cell terminating in the middle of a cell wall at the 50% level and extending 25% towards the center of the reservoir;
- viii. A 51 mm (2 inch) stainless steel Schedule 80 pipe with isolating ball valve extending into each cell for connection of cleaning hoses;

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- ix. A 19 mm (¾ inch) stainless steel pipe with isolating ball valve extending into each cell connected to a pressure transmitter for level sensing;
- x. Minimum 30 amp, 240/208 VAC electrical service;
- xi. Heat, light and ventilation to meet WorkSafe requirements;
- xii. All control wiring junction boxes;
- xiii. A Programmable Logic Controller (PLC) control system connected to the District of Squamish SCADA system;
- xiv. Chlorine residual analyzer with drain;
- xv. Interior and exterior of all steel piping to be coated to AWWA standards inlet piping – Mid Blue Outlet piping – Dark Green Drain piping – Gull Grey All other piping – Mid Blue Check valves to show direction of flow with white painted arrows;
- xvi. PLC controlled modulating inlet valve where more than one reservoir serves a single zone. The modulating inlet valve shall:
 - a. have non-contact 0 - 100% valve position indicator with 4-20 ma. Output;
 - b. be hydraulically operated with pressure tank (minimum 40 psi) sized to operate valve for 3 cycles during power failure;
 - c. be complete with a hydraulically operated diaphragm actuated globe or angle;
 - d. pattern valve of 'powerrol type';
 - e. pilot system to be protected by single continuous flow 100-micron filter;
- xvii. Access hatch to be as per the access requirements of the Pressure Reducing Stations.

1.18 PUMP STATIONS

Pump stations, where required, must be designed to suit the particular circumstances and otherwise comply with this bylaw. In general, pump stations must be designed to meet maximum daily demands with the largest pump out of service with balanced storage on line. If balancing storage is not on line, pump station capacity must meet peak hour demand with the largest pump out of service, and stand-by power must be provided to allow the greater of maximum day demand plus fire flow or peak hour demand during a power outage.

- 1.18.a Pre-Design Requirements - The Consulting Engineer retained by the Owner to design the Works must obtain approval from the District that siting of the pump station is acceptable. Prior to commencing detailed design, the Consulting Engineer must submit a pre-design report that addresses the design considerations of this criterion. Approval of the pre-design concerns must be obtained prior to the Consulting Engineer commencing detailed design.
- 1.18.b Pump stations design must incorporate at a minimum the following features and shall meet the review and approval of the District Engineer:
 - i. reinforced concrete, block work or brick construction;
 - ii. access doorways sized so that the largest single piece of equipment may be safely removed and replaced. Lifting hooks or rails with pulley blocks as required;

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- iii. adequate HVAC with filtered air inlet;
 - iv. housekeeping pads for Motor Control Centre's (MCC's);
 - v. electric motors to be premium efficiency;
 - vi. motors to have thermal protection;
 - vii. motors 100 hp and above to have analogue vibration recording and protection;
 - viii. all pilot, air relief discharge to be piped to floor drains to avoid standing water;
 - ix. air release valves;
 - x. hydraulically operated pump control valves with isolation valves;
 - xi. Neptune compound low-flow meter;
 - xii. spring return check valves and testable cross-connection device;
 - xiii. high pressure and surge relief valves with isolation valves;
 - xiv. suction and discharge pressure gauges for each pump with isolation valves;
 - xv. mechanical pump seals;
 - xvi. lockable roof hatches for motor and pump removal;
 - xvii. water quality sampling ports;
 - xviii. vehicle parking;
 - xix. landscaping is to be provided, including irrigation;
 - xx. 50 mm fill station complete with reduced pressure back flow device;
 - xxi. interior and exterior of pipe work to be coated to AWWA standards exterior colors to be:
 - a. low pressure piping – Mid Blue;
 - b. high pressure piping – Mid Red;
 - c. drain piping – Gull Grey;
 - d. all other piping – Mid Blue;
 - xxii. pump system to be PLC controlled and connected to District of Squamish SCADA system;
 - xxiii. control system to include but not be limited to:
 - a. Security switches;
 - b. Discharge and suction pressure transmitters;
 - c. Temperature sensor;
 - d. Uninterruptible power supply
 - e. Radio modem;
 - f. External antenna;
 - g. Operator interface panel;
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- h. Power meter without outputs to PLC;
 - i. Phase loss protection;
 - j. 5 spare fuses for all fuse holders;
 - k. Current copy of PLC and MMI program to be left in control enclosure (see District of Squamish Standards);
- xxiv. motors to be 600 AC-volt, 3 phase, Variable Frequency Drive (VFD), otherwise the Developer must apply for a variance;
- xxv. hour meters and ammeters for each pump;
- xxvi. power factor correction if required by Power Authority;
- xxvii. MCC, breaker boxes, receptacles to be labeled Station to be cleaned and dust free;
- xxviii. all stations must provide an automatic generator for standby power in case of power failure in accordance with Schedule G of the bylaw;
- xxix. noise lessening;
- xxx. manuals to be provided as per "Manuals" section;
- xxxi. provisions for building security shall be provided; and
- xxxii. 1.8m high perimeter fencing made of chain link is to be provided complete with concrete barrier per the Ministry of Transportation standard devices to protect the outbuilding.

1.19 PRESSURE REDUCING STATIONS

Minimum station requirements shall include:

- 1.19.a Stations shall be above ground unless otherwise approved by the District Engineer;
- 1.19.b Forced air ventilation, heat and light;
- 1.19.c Parallel pressure reducing valves;
- 1.19.d Air release valves;
- 1.19.e Water quality sample points;
- 1.19.f Sump drains to storm or sanitary sewer as directed;
- 1.19.g Access hatch to be an aluminum double door to full length and full width opening complete with stainless steel hardware. Where depth of chamber is over 900mm, provide an aluminum 600mm wide access stairway and removable railings.
- 1.19.h Vehicle parking
- 1.19.i Manuals as per "manual" section

- 1.19.j Minimum 30 amp, 240/208 VAC service
- 1.19.k Landscaping is to be provided, including irrigation.
- 1.19.l To be PLC controlled and programmed to the District of Squamish SCADA system, including:
 - i. security switches;
 - ii. discharge and suction pressure transmitters;
 - iii. temperature sensor;
 - iv. magnetic flow meter;
 - v. uninterruptible power supply;
 - vi. radio modem;
 - vii. external antenna;
 - viii. operator interface panel;
- 1.19.m Provisions for building security shall be provided.

1.20 MANUALS

- 1.20.a Supply (3) copies of operating and maintenance manuals:
 - i. Bind contents in a three-ring, hard covered, plastic jacketed binder, name of facility to be embossed onto binder cover and spine.
 - ii. Each section shall be separated from the preceding section with a plasticized cardboard divider with a tab denoting contents of the section.
 - iii. Digital copies of all reports are required.
- 1.20.b Contents to include:
 - i. Title sheet, labeled "Operation and Maintenance Instructions", and containing project name and date;
 - ii. List of contents;
 - iii. Reviewed shop drawings of all equipment;
 - iv. Equipment list showing all model and serial numbers;
 - v. All equipment manufacturers' manuals;
 - vi. Record drawings of all mechanical, electrical, control and alarm installations, including a digital PDF and AutoCAD (latest version) format are required;

- vii. Full description of system operation including: design points, designed pump and system curves, ultimate capacity, area served and any relevant design criteria relevant to the operation of the system;
- viii. Full description of entire mechanical, electrical and alarm system operation;
- ix. Names, addresses and telephone numbers of all major sub-contractors and suppliers;
- x. Commissioning report showing pressures, flows, current draw for all possible operating conditions;

1.20.c All SCADA programming shall be provided to the District in digital format.

1.21 FACILITY ACCESS

All-weather vehicular access must be provided to all reservoirs and pump stations. The minimum standard must be as for an emergency access road with curbing and drainage provisions as may be required. In any case, the maximum facility access grade shall not exceed 12.0% unless approved by the District Engineer.

1.22 CROSS CONNECTION CONTROL

- 1.22.a All developments shall meet the AWWA Canadian Cross Connection Control Manual (latest edition).
- 1.22.b All backflow protection assemblies shall be manufactured in accordance with the American Waterworks Standards AWWA/ANSI C510-92 Standard for Double Check Valve Backflow Prevention Assemblies and AWWA/ANSI C511-92 Standard For Reduced Pressure Principle Backflow Prevention Assemblies, and AWWA/ANSI Standard for Dual Check Backflow Prevention Assemblies. Double Check and Reduced Pressure Principle Backflow Prevention Assemblies shall have isolation valves with ports suitable to allow testing.
- 1.22.c There shall be maintained a 3.0 m separation between a water main and sewer and drainage mains where laid parallel and shall cross with 500 mm clear distance.
- 1.22.d Where the separation distance cannot be maintained there shall be submitted to the District a design detailing the provisions made to preserve the integrity of the water system.
- 1.22.e Crossing of sewer and water mains should be avoided, if absolutely required a crossing may be constructed as shown in MMCD Standard Detail Drawing G6.

SECTION 2 – SANITARY SEWER SYSTEM

2.1 GENERAL

- 2.1.a The sanitary sewage collection system design should be prepared under the direction of a Consulting Engineer who has the appropriate experience and is registered with the Association of Professional Engineers and Geoscientists of British Columbia.
- 2.1.b Consulting Engineers retained by the Developer to design the works and services must consult with the District Engineer to determine what existing information may be of assistance to them.
- 2.1.c The sanitary sewer system is to be designed using a calibrated sanitary sewer model acceptable to the District Engineer, unless the District Engineer determines the system is not complex.

2.2 DESIGN CONSIDERATIONS

DESIGN FLOWS

The sanitary sewer system must be designed based on the following criteria:

- 2.2.a Residential Average Domestic Flow Rate = 350 L/c/day;
- 2.2.b Non-Residential Average Flow Rate = 40,000 L/d/ha;
- 2.2.c Infiltration rate = 0.17 L/s/ha;
- 2.2.d Design Flows shall be calculated using MMCD methodology;
- 2.2.e Peak Flows shall be calculated using MMCD methodology;

2.3 PIPE FLOW FORMULAS

- 2.3.a Gravity Sewers: shall be calculated using MMCD methodology.
- 2.3.b Force Main Sewers: shall be calculated using MMCD methodology.
- 2.3.c All design features shall be included in the AutoCAD digital file complete with coordinates.

2.4 MINIMUM PIPE DIAMETER

The minimum permitted size of pipe is:

- 2.4.a 200 mm diameter mains – residential.
- 2.4.b 100 mm diameter – services and force mains.

2.5 MINIMUM VELOCITIES

- 2.5.a The minimum velocity shall be 0.6 m/s for gravity sewers and 0.75 m/s for forcemains.
- 2.5.b There is no maximum velocity; however, consideration must be given to scour problems and the dynamic loading on manholes where flow exceeds 3.0 m/s.
- 2.5.c Anchoring must be incorporated in accordance with MMCD.

2.6 MINIMUM GRADE

- 2.6.a The minimum grade of any sewer is governed by the main velocity as identified in 2.5.a.
- 2.6.b The upstream section of a residential sewer servicing a design population of 25 or less shall have a minimum grade of 1.0%.
- 2.6.c Force main grades are as indicated for Water Distribution, as defined in MMCD.

2.7 MINIMUM DEPTH AND COVER

- 2.7.a The minimum depth of the sewer main (from the finished surface of the road or grade to the top of the pipe) must be suitable to service the basement(s) of adjacent properties are required in the "Service Connection" section.
- 2.7.2 The absolute minimum cover over a main and service pipe must be 1.0 m (measured from the finished surface to the top of pipe) or comply with manufacturer's recommendations.
- 2.7.c The depth of the sewer must be sufficient to provide "gravity flow" service connections to both sides of the roadway and must allow for future extension(s) to properly service all of the upstream tributary lands for ultimate development.

2.8 ALIGNMENT AND CORRIDORS

- 2.8.a Sanitary sewers must be located within the road Right-of-Way or Easement as noted in the applicable Standard Drawing Typical Cross Section for that road.
- 2.8.b When the utility is required to cross private land(s), the Right-of-Way or Easement shall have a minimum width of 3.0 m. Where both storm and sanitary sewers are located within a single Right-of-Way or Easement, the minimum width shall be 5.0 m. In either case, the Right-of-Way or Easement shall be surfaced and graded accordingly to allow access for District maintenance vehicles to repair or replace the utility and shall be registered on title.
- 2.8.c Where there is no infrastructure that would require occasional maintenance by the District of Squamish, such is the case where only pipe is present within the utility Right-of-Way or Easement, the requirement for access by maintenance vehicles may be waived by the District Engineer.

- 2.8.d Sewer main extensions shall extend to and terminate at the furthest property line of the last lot it services.

2.9 CURVED SEWER

Curved sewer mains will not be permitted.

2.10 MANHOLES

2.10.a Manholes are required at:

- i. Every change of pipe size
- ii. Every change in grade,
- iii. Every change in direction,
- iv. Every pipe intersection except for 100 mm and 150 mm service connections and junctions with trunk sewers 900 mm diameter and larger,
- v. Upstream end of every sewer line,
- vi. Every future pipe intersection,
- vii. 120 m maximum spacing,

2.10.b Sanitary manhole rim elevations in off-road areas must be designed to be a minimum of 150mm above the surrounding finished grade.

2.11 HYDRAULIC LOSSES ACROSS MANHOLES

The following criteria must be used:

2.11.a The crown of the downstream pipe must not be higher than the crown of the upstream pipe.

2.11.b Minimum drop in invert levels across manholes:

- i. Straight run – 0 mm drop
- ii. Deflections up to 45 degrees - 25 mm drop of minimum.
- iii. Deflection 45 to 90 degrees - 50 mm drop of minimum.

2.11.c Drop manhole and ramp structures to follow MMCD standard.

2.11.d All benching shall be designed to prevent any solid deposition or flow disruption.

2.12 SERVICE CONNECTIONS

Each and every legal lot and each unit of a residential duplex shall be provided with a separate service connection and shall conform to MMCD standards.

Connections are to serve all plumbing by gravity. Building elevations should be established accordingly. Pump connections shall terminate at property line into a gravity sanitary sewer line / connection or to a manhole. Pumped connections will not be permitted to connect to a sanitary sewage forcemain.

2.12.a Size

- i. Pipe size to accommodate peak design flow.
- ii. Minimum pipe sizes are as indicated in Section 2.4.
- iii. Have a minimum diameter of 100 mm except for industrial/commercial/institutional which shall have minimum diameter of 150 mm.

2.12.b Location and Depth

- i. Connections to large lots are to be located at the lower portion of each lot. For urban developments, location of connection to follow the Standard Drawings.
- ii. Other depth requirements are as indicated in section 2.7.

2.12.c Grade

Minimum grade from property line to sanitary sewer main:

- i. 100 mm diameter pipe: 2.0%
- ii. 150 mm diameter pipe: 1.0%
- iii. Larger sizes: Grade based on minimum velocity of 0.60 m/s; larger size as identified in 2.5.

2.12.d Details

Use standard wye fittings for connections to new mains.

Connections exceeding 30 m in length will be treated as from the main to the building.

- i. Service connections may be permitted into manholes if:
- ii. The connection is not oriented against the flow in the main;
- iii. Manhole hydraulic requirements are met;
- iv. Manholes are required on service connections on 200 mm diameter or larger;
- v. Inspection chambers are required on residential connections unless the service is less than 2.5 m long and connect to a manhole;
- vi. Sanitary inspection chamber lids to be red in colour.

2.13 SANITARY LIFT STATIONS

Any proposed use of lift stations must receive prior approval from the District Engineer. Sanitary lift stations should normally be located within a Right-of-Way or Easement outside the required road dedication.

This criteria covers both dry well and submersible sewage lift stations. Larger capacity sewage lift stations or lift stations with special design or siting requirements may require additional assessment and review of criteria.

2.13.a Pre-Design Requirements

- i. The Consulting Engineer retained by the Owner to design the Works and Services must attempt to minimize the number of sewage lift station and thoroughly consider other options to avoid lift stations wherever practical and must obtain approval from the District Engineer prior to siting the lift station;
- ii. Prior to commencing detailed design of a lift station, the Consulting Engineer must submit a pre-design report that addresses the design of this criteria for the approval by the District Engineer. Approval of the pre-design concepts must be obtained prior to the Consulting Engineer commencing detailed design.

2.13.b Location and Layout

The location and layout of a lift station must include an assessment of the following basic design considerations:

- i. The lift station must be design building-out peak flows to handle the ultimate flows of the designated catchments;
- ii. Type of station and impact on neighbours;
- iii. Levels to be controlled by ultrasonic level transmitters or pressure transducers and shall have emergency back-up high and low level ball floats;
- iv. Access for construction;
- v. Access for maintenance;
- vi. Landscaping is to be provided, including irrigation;
- vii. Noise and odour control as per section 2.15 and 2.16;
- viii. Security against vandalism and theft;
- ix. Flood elevations. Station uplift design must be based on maximum load level;
- x. Proximity of receiving sewers, water mains, and adequate power supply;
- xi. Minimizing energy requirements;
- xii. Standby power and its compatibility;
- xiii. Soils. Sub-surface investigations must be undertaken prior to site approval;
- xiv. Convenience of operation and maintenance;
- xv. Safety for operators and public;
- xvi. Capital costs and operation and maintenance costs.

2.13.c Design Criteria

- i. Pumps must have:
 - a. a minimum of two pumps are required at each location;
 - b. capable of passing solids up to 75 mm in size;
 - c. equipped with hour meters;
 - d. easily removed for maintenance;
 - e. operate with a motor running at 1750 RPM's;
 - f. operate on a 347/600 volt electrical source (pump motors 5 hp and greater are to be 600 volt, 3 phase type), with Variable Frequency Drive (VFD);
 - g. able to operate alternately and independently of each other;

- h. able to meet maximum flow condition with one pump in failure mode;
- i. designed so that each motor does not cycle more than 4 times in one hour under normal operating conditions.
 - For example, in a duplex pump station that is designed to alternate the pump starts,
 - each motor can have a maximum of 4 starts in an hour,
 - which could result in a total of 8 motor starts per hour for this station;
- ii. Motor cables, power cables, etc., must be continuous from within the pump station to within the kiosk unless an adequate exterior pull pit and junction box is installed;
- iii. Levels to be controlled by ultrasonic level transmitters or pressure inducers and shall have emergency high and low level ball floats;
- iv. All auxiliary equipment and control panels must be mounted in a suitable kiosk adjacent to the station. The kiosk must be located a minimum of 3.0 m from the station lid;
- v. The control kiosk must be designed to contain all control and SCADA equipment on the front panel and all power equipment on the rear panel;
- vi. Check valves must be ball lift check valves. Other valves to be plug valves;
- vii. All check valves and shut off valves shall be located external to the lift station wet well;
- viii. All stations require an explosion-proof exhaust fan which can be activated by manual switch, and which meets WorkSafe requirements for ventilation in a confined space;
- ix. The entrances to all stations must be waterproof and be provided with a suitable lock. The access must be a minimum 900 mm x 900 mm in size;
- x. The access hatch shall have:
 - an aluminum 6.5 mm (¼ inch) tread plate
 - a perimeter drain
 - a perimeter sealing gasket
 - a slam lock with an aluminum removable sealing plug and opening tool
 - a flush lift handle
 - a gas spring assist cylinder
 - a 90 degree hold open arm
 - a flush fitting padlock tang
- xi. The hatch must be reinforced for 1465 kgs/m² (300 lbs. / sq.ft.). All fasteners to be made of 316 stainless steel;
- xii. The entrance must be above ground level where feasible but, in no case, more than 300 mm above the ground;
- xiii. Access into the stations must be by an aluminum ladder. The location of the ladder must not interfere with the removal and installation of the pumps, etc. The ladder must be designed to extend and lock at least 600 mm above the station entrance. A platform is to be provided above the high water level float to permit wet well access. The platform is to be a fiberglass grating. The access, ladder and platform must meet WorkSafe standards;
- xiv. All wiring must be explosion-proof, Class 1, Division 2, and electrical design and installation is subject to the acceptance of the Provincial Safety Inspector. Metal stations must be protected by impressed current cathodic protection;
- xv. All stations must provide an automatic generator for standby power in case of power failure. Provision for a telemetry system must be included for connection into the District's Telemetry System. For small lift stations with an ultimate capacity less than 100 units, emergency storage may be considered in place of standby power; emergency storage is to be based on 8 hours of average day flows;

- xvi. All equipment must be CSA approved and have at least a one-year guarantee for parts and labour. The Consulting Engineer is to provide to the District three sets of Operating and Maintenance Manuals. All pumps must be factory tested prior to installation;
- xvii. A plug style gate valve is required on the influent line and on each pump discharge;
- xviii. If a lift station is authorized by the District Engineer it is to be constructed in an area that may be subject to vehicle loads, the roof and cover of the pump station should be designed to withstand a loading of H-20 (Highways Standard);
- xix. Provision(s) must be made for standby pumping from an external source. An adaptor flange ("Kamlock"), complete with a quick coupling and lockable cap will be required;
- xx. The area around the station and all associated equipment or building must be asphalted. The size of the area to be determined by the requirements for maintenance;
- xxi. Stations shall be FRP and must receive at least two coats of two-component white epoxy enamel to the interior surface of the tank. Concrete stations or station with dry well arrangements will not be permitted without the prior approval, at the Pre-Design stage, of the District Engineer;
- xxii. The wet well bottom must be benched to direct all solids into the pump suction. The influent line must be located tangent to the wet well to encourage scouring of the wet well;
- xxiii. The station shall be complete with a Uninterruptible Power Supply (UPS) to serve all alarms and controls;
- xxiv. The pump control panel must incorporate an HMI operator interface and the panel must be complete with a lamp test button;
- xxv. Separate starter enclosures must be provided for each pump;
- xxvi. PLC controlled and connected to District of Squamish SCADA system. Nema enclosure to be provided for SCADA system;
- xxvii. Variable Frequency Drives (VFD) are required;
- xxviii. Station communication to be provided via radio transmission compliant with the District's telemetry system, and an antenna must be installed on a suitable mast or pole to ensure reliable transmission;
- xxix. An hour meter must be built into the panel for each pump;
- xxx. An amp meter must be provided for each pump;
- xxxi. Minimum storage between the high level alarm and the start of overflow under the more critical of:
 - 1. Minimum 1 hour in wet well at average wet weather flow;
 - 2. Minimum 1 hour in wet well and influent pipes at peak wet weather flow;
- xxxii. Station to have a magnetic flow meter;
- xxxiii. Station to allow removal of pumps using hoist truck with 1.8 m boom;
- xxxiv. 1.8m high Perimeter fencing made of chain link is to be provided complete with concrete barrier per the Ministry of Transportation standard devices to protect lift station. Fencing to include double swing gates that accommodates a 2.4 m wide opening plus one person gate;
- xl. Landscaping acceptable to the District is to be provided including irrigation;
- xli. Noise control may be required when criteria in Section 2.15 is exceeded;
- xl.ii. Odour control may be required when criteria in Section 2.16 is exceeded;
- xl.iii. Minimum barrel size must be 2440 mm in diameter;
- xl. iv. Each station shall be provided with a 50 mm stand pipe water connection complete with shut off valve, double check valve and capped threaded outlet for hose connection. Connection to main, valving chamber and related fixtures to be per Standard Drawings for a 50 mm diameter water meter installation.

2.14 FORCE MAIN

- 2.14.a In conjunction with sanitary pumping facilities, the following criteria must be noted in the design of force main systems. Design computations for force mains must be made using a C value appropriate for the type of pipe. The Hazen Williams formula must be used.

2.14.b **Velocity**

At the lowest pump delivery rate anticipated to occur at least once per day, a minimum cleansing velocity of 1.0 m/sec should be maintained. Maximum velocity should not exceed 2.5 m/sec.

2.14.c **Air Relief Valves**

An automatic air relief valve must be placed at high points in the force main to prevent air locking.

2.14.d **Termination**

Force mains should enter the gravity sewer system at a point not more than 600 mm above the flow line of the receiving manhole, otherwise outside drop pipe must be incorporated.

2.14.e **Size**

The minimum size for force mains as outlined in Section 2.4.

2.14.f **Materials**

- a) With the exception of valves, the material selected for force mains must meet the standards specified for water mains and must adapt to local conditions such as character of industrial wastes, soil characteristics, exceptionally heavy loadings, abrasion and similar problems.
- b) Valves used on force mains shall be plug valves sufficient for long term use in a corrosive environment.

2.14.g **Loads and Transient Pressures**

All force mains must be designed to prevent damage from superimposed loads, or from water hammer or column separation phenomena.

2.14.h **Corrosion Protection**

Corrosion protection requirements shall be determined by the Consulting Engineer.

2.15 NOISE CONTROL CRITERIA

Noise levels for facilities must not exceed 65 dB at property line or 20.0 m away whichever is closer.

2.16 ODOUR CONTROL CRITERIA

2.16.a Dissolved sulphide maximum limit at any point in the system is to be 0.5 mg/l.

2.16.b Odour Criteria

- a) At 10.0 m from any gravity main, force main, manhole and lift station or other sewer facility (summer conditions, winds between 2-10 km/h), 1.0 odour units.
- b) Where sewer facilities are closer to houses, parks or walkways, 0.0 odour units.

2.16.c Analysis for odour and sulphides may be required.

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SECTION 3 – STORM SYSTEM

3.1 GENERAL

- 3.1.a All Developments shall adhere to Federal, Provincial, and District regulations and guidelines, with the most stringent requirements taking precedence.
- 3.1.b The presence of an existing District drainage facility or natural channel does not imply that such is a suitable or adequate point of discharge. The Consultant shall confirm that downstream capacity is adequate. Where existing downstream facilities are inadequate to handle the increased flow from the proposed subdivision, an alternate design is required. At no time, however, will direct discharge be permitted without adequately addressing stormwater quality and detention.
- 3.1.c The storm drainage system shall be designed with sufficient capacity to collect and convey anticipated storm runoff from the total catchment area to be served when fully developed.
- 3.1.d The drainage system shall have two components, the "Minor" and the "Major".
 - i. The Minor system shall consist of underground conduits and appurtenances capable of conveying runoff from the ten-year return period storm.
 - ii. The Major system shall consist of surface flowpaths within roadways and walkways, and other open channels, capable of storing and/or conveying that portion of the runoff from the 100-year return storm over and above the capacity of the Minor system.

Components of the Minor system may be enlarged to accommodate the major flow, but only in cases where an overland flow route or storage system is physically impossible, and only with the approval of the District Engineer.

- 3.1.e Suitable on-site or off-site stormwater detention or storage facilities may be required depending upon the impact of runoff on downstream areas. They shall be designed in accordance with this Bylaw and the most recent Federal and Provincial regulations and guidelines and are subject to the approval of the District Engineer.
- 3.1.f Consulting Engineers retained by the Owner to design the works and services must consult with the District to determine what existing information may be of assistance to them.

3.2 STORMWATER MANAGEMENT PLAN

- 3.2.a. Except as noted in 3.2.b, all Developments require a Stormwater Control Plan as outlined in MMCD, in addition to the following considerations:
 - i. Appropriate sizing and routing of pipes and channels;

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- ii. Major flow path routing;
- iii. Detention storage;
- iv. Sediment removal;
- v. Biofiltration;
- vi. Landscaping;
- vii. Source control;
- viii. Erosion protection;
- ix. Groundwater infiltration;
- x. Subsurface disposal; and
- xi. Lot grading.

And include:

- a. Supplementary Design Criteria;
- b. Subdivision and Development Control Bylaw;
- c. Existing Master Drainage Plan, Watershed Plan, or Integrated Stormwater Management Plan should those documents exist, be current and be directly applicable;
- d. Local Government Act;
- e. Fisheries Act of BC;
- f. BC Water Act;
- g. Navigable Waters Act;
- h. Canada Wildlife Act;
- i. Migratory Birds Conservation Act;
- j. Dike Maintenance Act;

3.2.b Integrated Stormwater Management Plan

- i. Subdivisions and Developments that are greater than 3.0 ha. Require an Integrated Stormwater Management Plan;
- ii. The Integrated Stormwater Management Plan shall be designed based on the principles contained in the Stormwater Planning Guidebook for British Columbia (latest edition);
- iii. The Integrated Stormwater Management Plan must:
 - a. Demonstrate how site level solutions fit in to a larger watershed context and are complemented by a range of other watershed protection and flood risk management tools.
 - b. Demonstrate how the ecological values of stream corridors and receiving waters will be protected and enhanced and drainage related problems prevented.
 - c. Incorporate watershed specific drainage, stream protection, and water quality objectives that encompass the following:
 - Alleviate existing and potential drainage, erosion, and flooding concerns;
 - Protect and restore stream health, including riparian and aquatic habitat;
 - Remediate environmental risks;
 - Remediate existing and potential water quality problems.
 - d. Integrated stormwater management planning and land use planning.

3.2.c Stormwater Control Plan

Unless otherwise indicated a Stormwater Control Plan is required for all developments except those in rural or agricultural areas. The Stormwater Control Plan should include the following:

- Tributary areas in the catchment with existing and potential land uses;
- Reference to the applicable Master Drainage Plan, Watershed Plan, or Integrated Stormwater Management Plan (the “Master Plan”);
- Details indicating how the proposed site relates to the Master Plan and its recommendations. Contours at 1.0 m elevation intervals;
- Conceptual lot grading patterns;
- Existing watercourses, including environmental classifications and/or fish presence information, if available;
- Layouts of existing and proposed drainage systems;
- Major flow paths;
- Proposed control features to meet the water quantity and quality targets identified in the applicable Master Plan;
- Locations, sizes, design flows / volumes, and capacities of all proposed works;
- Capacity assessment of downstream works, or reference to the applicable Master Plan demonstrating adequate capacity;
- Minor and Major hydraulic line elevations of all proposed works;
- Proposed service connection locations and their associated minimum building elevations (MBE). Pre and post development flows both entering and leaving the subject lands.

3.3 RAINFALL DESIGN METHODS AND FLOWS

- 3.3.a Storm Drainage systems must be designed using conventional methods (pipes, culverts, etc.) and Stormwater Management techniques (lot grading, detention, etc.);
- 3.3.b The Owner must provide to the District all calculations and plans pertinent to the design of the proposed drainage system. All designs must take into consideration post-development upstream flows.
- 3.3.c It must be shown that all existing or downstream drainage facilities are capable of handling the projected increase in drainage created by any development.
- 3.3.d All storm drainage system elements servicing areas larger than 10 ha must be designed using computer modeling software approved by the District Engineer.
- 3.3.e For Developments where the tributary areas are less than 10 ha, and detention facilities are not involved, the Rational formula may be used.

3.3.f The Rational Method for calculation of peak flows of Minor stormwater flows is as follows:

$Q = \text{RAIN}$

Where: Q = Peak flow in cubic metres per second (m^3/s)
R – Runoff Coefficient x Adjustment Factor (AF)
A = Area of catchment in hectares (ha)
I = Intensity of rainfall in mm per hour
N = 1/360

3.3.g Runoff Coefficients

- i. Factors and coefficients for use in the Rational Formula to be as shown in MMCD;
- ii. In case of mixed land use, a composite runoff co-efficient is to be calculated and used.

3.3.h Manning's coefficient equation must be used for gravity storm sewer pipe design with roughness coefficients defined in Table 3.1.

Table 3.1 – Manning's Roughness Coefficients	
Pipe	Roughness Coefficient (n)
Concrete	0.013
PVC	0.011
Corrugated Metal Pipe – Unpaved	0.024-0.033
25% Paved	0.021-0.024
100% Paved	0.013
Overland Flow	
Smooth Asphalt	0.012
Asphalt or Concrete Paving	0.014
Rubble or Riprap	0.030
Earth	0.030
Dense Turf / Grass	0.035
Dense Shrubbery / Bioswales	0.040

3.3.i Drainage Areas

- i. The entire tributary drainage area for the storm drainage systems under design must be delineated according to the topography of the land and include all other contributing areas.
- ii. It is the Consulting Engineer's responsibility to ensure that they obtain true and accurate elevations for the Development of the site.

3.3.j Runoff Coefficient Adjustment Factor

An adjustment factor (AF) is to be applied to the runoff coefficient to reflect variations in soil permeability and slope. These factors are outlined in MMCD.

3.3.k Rainfall Return Frequency

The rainfall intensity for the Rational Method should be determined using the rainfall IDF curve included in the Standard Drawings as SQ-S21;

- i. Minor System Design = 10 year return period;
- ii. Major System Design = 100 year return period;
- iii. 200 year return period where required by the Ministry of Environment.

3.3.l Time of Concentration

The time of concentration is the time required for the runoff to flow from the most remote part of the catchment area under consideration to the design node. The time of concentration shall be calculated as outlined in MMCD.

3.4 CONVENTIONAL STORMWATER SYSTEMS

3.4.a Conventional stormwater systems set out both specific rules and design details that if used with Good Engineering Practice are pre-approved by the District.

3.4.b Required Professional Qualifications for applicants using the conventional stormwater systems approach for Stormwater Management System Design are:

- A Professional Engineer, with experience in civil engineering;
- Landscape Architect (BCSLA) or Certified Horticultural Technician for soil / planting design;
- Certified Irrigation Designer for irrigation design.

3.4.c Minimum and Maximum Velocities

- a) The minimum velocity for a pipe flowing full must be 0.6 m/s.
- b) Where steep grades result in velocities exceeding 6.0 m/s, consider measures to prevent pipe erosion and movement of installed infrastructure.
- c) Where drainage discharge enters a natural watercourse or stream the maximum velocity is 1.0 m/s.
- d) Pipe anchoring should be installed as per MMCD.

3.4.d Minimum Pipe Diameter

The minimum pipe diameter shall be as shown in Table 3.2.

Table 3.2 – Minimum Pipe Diameter	
Description	Minimum Pipe Diameter (mm)
Storm Drainage Main	250
Culverts: - Crossing Roads - Crossing Driveways	450 300
Catch Basin Leads/Double CB	200/250
Service Connections: - Residential - Commercial/Industrial	150 150

3.4.e Minimum Grade

Minimum grades of storm sewers are as required to obtain the minimum velocity as in 3.4.c.

3.4.f Minimum Depth of Cover

Subject to the correct pipe loading criteria, storm sewers should be of sufficient depth to:

- i. Provide a minimum cover of 1.0 m without concrete encasement or provide detailed analysis to demonstrate mechanical protection from external loads;
- ii. Permit gravity service to all tributary areas;
- iii. Clear other underground utilities; and
- iv. Prevent damage from surface loading.

3.4.g Horizontal Alignment and Corridors

- i. Except as noted in 3.4.g.ii), storm sewer mains must be located within the Right-of-Way or easement.
- ii. When the utility is required to cross private land(s), the Right-of-Way shall have a minimum width of 3.0 m. Where both storm and sanitary sewers are located within a single right-of-way, the minimum width shall be 5.0 m.

3.4.h Curved Pipes

Curved storm mains will not be permitted.

3.4.i Manholes

- i. Manholes are required at the following locations and as outlined in MMCD:
 - a. Every change in pipe size;

- b. Every change in grade;
 - c. Every change in direction;
 - d. Every pipe intersection (except for 150 mm service connections, catch basin connections, and junctions with trunk sewers 900 mm diameter and larger);
 - e. Upstream end of every sewer line;
 - f. At maximum 120 m spacing for pipes smaller than 900 mm diameter; and
 - g. At maximum 250 m spacing for pipes 900 mm diameter and larger.
- ii. **Sump Manholes**
Where ditches, swales or other open channels discharge into a storm sewer system, the initial connecting manhole shall be of a sump type unless this provision is provided by the receiving inlet structure.
 - iii. **Catchbasin Manholes**
Catchbasin manholes shall include a sump consistent with MMCD standard drawings S1 complete with inlet grate and frame as per MMCD standard drawing S11 or S12.

3.4.j Hydraulic Losses in Manholes

- i. The following criteria must be used:
- ii. The crown of the downstream pipe must not be higher than the crown of the upstream pipe.
- iii. Minimum drop in invert levels across manholes as outlined in MMCD.
- iv. Exterior drop manholes must be installed in accordance with MMCD Standard Detail Drawing S3 where the invert elevation difference exceeds 600 mm.

3.4.k Service Connections

- i. Each and every legal lot and each unit of a residential duplex shall be provided with a separate service connection including an inspection chamber.

Unless otherwise approved by the District Engineer, connections are to serve the perimeter (foundation) drains of all buildings by gravity. Building elevations should be established accordingly and at a minimum the MBE shall be 600 mm above the HSL of the Major Storm event. Pumped connections may be permitted if requested prior to sewer design and if appropriate covenants are provided.

- ii. **Size**
 - a. Pipe size to accommodate design flow.
 - b. Minimum pipe sizes are as indicated elsewhere.
- iii. **Location and Depth**
 - a. Connections to large lots are to be located at the lower portion of each lot. Urban development location of connections to follow the Standard Drawings.
 - b. The connection elevation at the property line is to be above the Minor system HGL.
 - c. Other depth requirements are as indicated for storm sewer mains.

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- iv. Minimum grade from property line to storm sewer main:
 - a. 150mm diameter pipe: 1.0%
 - b. Larger sizes: Grade based on minimum velocity as identified in 3.4.c.
- v. Details:
 - a. Use standard wye fittings for connections to new mains;
 - b. Connections exceeding 30 m in length will be treated as main to the building;
 - c. Service connections may be permitted into manholes if:
 - The connection is not oriented against the flow in the main;
 - Manhole hydraulic requirements are met;
 - Manholes are required on service connections on 2mm or larger;
 - Inspection chambers and cleanouts are required on residential connections unless the service is less than 2.5 m long and connect to a manhole;
 - Inspection chambers to MMCD standards and shall include a backflow prevention device at property line and shall be installed at or in the building per the BC Building Code;
 - Sanitary inspection chamber lids to be red in colour;

3.4.l Temporary Clean Outs may be provided at terminal sections of a main provided that future extension of the main is designed as an overall phased development.

3.4.m Catch Basins

- i. Catch basin design criteria is defined in MMCD;
- ii. Side inlet catch basins are permitted with Dobney B-39B side inlet frame or approved equivalent. Side inlet catch basins may be used at low points in the roadway or where the roadway may be subjected to Major stormwater flow routing;
- iii. Side inlet catch basins are to be used with barrier curb and in vegetated areas.

3.4.n Ditches adjacent to roadways must conform to the following criteria:

- i. Maximum depth should be established based on width of right-of-way, slopes and traffic safety criteria;
- ii. Minimum grade is 0.5% grade ditches;
- iii. Maximum velocity is 1.0 m/s (unlined ditch) – see also 3.8;
- iv. Side slope shall be no steeper than 1.5 horizontal:1.0 vertical;
 - a. Ditching, swales or natural drainage courses exceeding 6.0% require a properly designed ditch cross section that will control erosion taking into account soil type, water flow and velocity; and

- b. The minimum right-of-way or easement width for a ditch must be 5.0 m where the ditch crosses private property. The ditch must be offset in the right-of-way to permit a 3.0 m wide access for maintenance vehicles. Additional right-of-way may be required to facilitate the ditch and the access. The top of the ditch adjacent to the property line must be a minimum 1.0 m away from the property line.
- 3.4.o The design of structures where culverts or ditches form part of the storm system must consider level access to hydrants, transformers and driveways. The culvert must be installed at the same grade as the ditch.
- 3.4.p The MMCD Standard Drawings for inlet and outlet structures must be used in the design of these facilities.
- 3.4.q Swales shall be a maximum 150mm deep. All swales are to be lined with sod on a minimum 100 mm of topsoil. Swales required for lot grading conformity shall be located on a 3.0 m easement where accepting drainage of adjacent lots.

3.5 ALTERNATIVE STORMWATER MANAGEMENT SYSTEMS (ASMS)

3.5.a General

Intended for unusual and innovative developments, Alternative Stormwater Management Systems set out general guidelines that designs must meet, but allow qualified professionals to determine the methods to meet the guidelines, subject to the written approval of the District. The standards described in the following section should be a starting point for the development of any performance standards.

3.5.b ASMS requirements for Stormwater Management Systems include:

- i. No discharge from impervious surface areas for storm events with rainfall depths up to one half the 24 hour Mean Annual Rainfall (MAR).
- ii. Post-development runoff for the 2-year recurrence 24-hour storm shall be 50% of the pre-development runoff and the post-development runoff of the 5-year recurrence 24 hour storm shall not exceed the pre-development runoff.
- iii. For storm events that exceed the 5-year recurrence provide safe conveyance of runoff.
- iv. Proposals for Stormwater Management Systems using the ASMS approach shall be in report form, sealed by the responsible professional, and shall include information:
 - a. Tributary areas in the catchment with existing and ultimate land uses;
 - b. Details indicating how the local catchment area relates to the boundary's ISMP's;
 - c. Contours at 1.0 m elevation intervals;
 - d. Existing watercourses including environmental classifications and/ or fish presence information;

- e. Continuous flow modeling using currently accepted hydrologic and hydraulic modeling software and practices. Selection of computer programs requires review of the historical application of each program in watersheds similar to those under consideration. District approval of computer program selection should be obtained before design is commenced;
 - f. Layouts of existing and proposed drainage systems;
 - g. Major flow paths;
 - h. Conceptual lot grading patterns;
 - i. Design of proposed infiltration facilities, if appropriate, including location, sizing, detail cross sections and typical profiles. Results of on-site infiltration testing of soils at the elevation of the proposed infiltration;
 - j. Locations, sizes and hydraulic grade line (HGL) elevations of proposed detention facilities, if appropriate;
 - k. Other proposed mitigation measures, if appropriate;
 - l. Proposed minimum building elevations (MBE) and 100 year HGL of major flowpath (100-year storm);
 - m. Pre and post-development flows, with and without the impact mitigation measures;
 - n. Current and future upstream and downstream flows and system capacities;
 - o. Plan for erosion and sediment control during all phases of construction;
 - p. Plan for monitoring of performance by qualified professionals during construction and maintenance periods;
 - q. Plan for maintenance during the maintenance period; and
 - r. Plan for maintenance of oil/water separators.
- v. The proposed system shall be 'equivalent' or better to the Conventional Stormwater Systems.

3.6 STORMWATER SOURCE CONTROL

3.6.a General

Stormwater Source Control shall be incorporated into subdivision and lot development to meet the requirements of stormwater management plans developed by the District or Developer (in the absence of a District plan) for various watershed areas, and the requirements below. Stormwater Source Control practices are intended to infiltrate the frequent minor storm events to provide recharge of ground water for stream base flows, and also to improve water quality. Unless proven by a ASMS calculation, Stormwater Source Controls shall be assumed to not substantially reduce the quantity of storm runoff in events exceeding one half of the Mean Annual Rainfall (MAR) depth.

- 3.6.b** Selection of Stormwater Source Controls shall be made with regard to the topography, water table, soil or rock infiltration capacity, and downstream slope stability hazards. Stormwater Source Control use and sizing shall be customized by the design engineer for each development, subject to the following general guidelines:

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- i. All unpaved landscape areas shall have a minimum depth of 200 mm of free draining topsoil / organic matter mix meeting the requirements of MMCD - either existing to remain or imported over scarified free-draining subgrade. The surface shall be vegetated or re-vegetated. Immediately before seeding or planting, the surface shall be cultivated to remove surface crusting, and compacted areas that do not exhibit free drainage shall be scarified.
- ii. Narrow paved areas, such as streets, driveways or walkways, shall be sloped to drain onto adjacent unpaved landscape areas designed as infiltration facilities in accordance with the guidelines below, to encourage runoff from these areas to infiltrate into the soil.
- iii. All infiltration areas shall drain away from buildings, shall have a provision for draining within 48 hours to the 5-year return period drainage system, and shall have an overflow to the 100 return period year flow path.
- iv. The surface of unpaved landscape areas shall be designed for positive drainage away from pavements and buildings. Slopes of 1.0% to 3.0% are desirable to encourage infiltration of small rainfalls while facilitating drainage of large storms.
- v. Infiltration-based Stormwater Source Controls shall not be used in the following conditions:
 - a. Areas within 30.0 m of a slope that is steeper than 3.0 (horizontal) to 1.0 (vertical) and higher than 6.0 m, or other unstable slopes;
 - b. Areas where the post-development wet season groundwater table is less than 600 mm below the base of infiltration trenches;
 - c. Areas where existing dwellings do not have foundation drains.
- vi. In all Developments other than those listed in 3.6.b.v above, infiltration-based stormwater source controls with an overflow to the District storm drain system are required, except when a professional engineer with experience in geotechnical engineering identifies conditions that would preclude the use of infiltration practices. Required practices are:
 - a. Infiltration Swales and/or Rain Gardens with reservoir and underdrain shall be installed where appropriate and with District approval, in accordance with Drawings SQ – S06;
 - b. Whereas the reservoir and underdrain shown in Drawing SQ – S06 are generally required, the underdrain and/or reservoir may be deleted in cases where a report by a professional engineer with experience in geotechnical engineering provides on-site infiltration test results that indicate that subsurface infiltration rates are adequate to allow absorption of one half the Mean Annual Rainfall (MAR) within the drainage area of the Stormwater Source Control. In such cases the geotechnical engineering report shall recommend the appropriate detail, with reference to Drawings SQ – S03, SQ – S04, SQ – S05, SQ – S07, SQ – S08, SQ – S09, SQ – S11, SQ – S12;
 - c. All utility crossings of infiltration-based stormwater source controls shall have trench dams installed as necessary to stop infiltration water from flowing down the utility trench to downstream basements or crawl spaces.
- vii. Permeable pavers shall be allowed with the District's approval in appropriate areas.

3.6.c Infiltration Swales

Infiltration Swales shall meet the supplementary specifications, Drawings SQ – S01, SQ – S02, SQ – S03, SQ – S04, SQ – S05 and the following design guidelines:

- i. The swale infiltration area should be approximately 10.0% to 20.0% of the upstream impervious area that it serves, with its sizing preferably calculated by continuous flow modeling.
- ii. Flow to the swale should be distributed sheet flow, travelling through a grassy filter area at the swale verges (500 mm minimum, > 3.0 m desirable). Provide pretreatment erosion control to avoid sedimentation in the swale.
- iii. Pavement edge at the swale may be wheel stop, flush curb, drop curb or side inlet curb. Provide a 25 mm drop at the edge of paving to the swale soil surface, to allow for positive drainage and buildup of road sanding/organic materials at this edge.
- iv. Swale planting is typically sodded lawn. Low volume swales can be finished with a combination of wet tolerant grasses, shrub, groundcover and tree planting to provide a 100% vegetated cover within 2 years of planting. Meet the requirements in Schedule F for growing medium depth / volume where shrub and groundcover is used, and at planted trees.
- v. Minimum sideslope shall exceed the slope of the road edge profile.
- vi. Drawdown time for the maximum surface ponded volume: 48 hours maximum.
- vii. Underground weirs of undisturbed native material or constructed ditch blocks shall be provided to create underground pooling in the reservoir sufficient for infiltration performance.

3.6.d Rain Gardens

Rain Gardens shall meet the supplementary specifications, Drawings SQ – S06 through SQ – S09, and the following design guidelines:

- i. The Rain Garden area should be 10.0% to 20.0% of the upstream impervious area that it serves, preferably sized by continuous flow modeling. Common rain garden size is about 50 m² draining 250 m² of impervious area, although this sizing and proportion will vary by rainfall and soil characteristics. Smaller, distributed Rain Gardens are better than single large-scale facilities.
- ii. Siting of Rain Gardens should be similar to other infiltration facilities – minimum 30.0 m from wells or unstable slopes, minimum 3.0 m downslope of building foundations, and only in areas where foundations have footing drains. Obtain a letter of approval from a Professional Engineer with experience in Geotechnical Engineering prior to siting rain gardens.
- iii. Provide pretreatment erosion control to avoid sedimentation in the garden.

- iv. Flow to the swale should be distributed sheet flow, travelling through a grassy filter area or grass swale prior to entering the Rain Garden (500 mm minimum, > 3.0 m desirable; grassy pretreatment swale length).
- v. Drawdown time for the maximum surface ponded volume: 48 hours.
- vi. Treatment soil should have a minimum infiltration rate of 13.0 mm/hr, with 6.0 mm/hr used for design. If a filter cloth is used over drain rock reservoir, provide clean washed sand over the filter cloth as a replacement for the lower 100 mm of growing medium.

3.6.e Pervious Pavers

Pervious Pavers shall meet the supplementary specification, Drawing SQ – S10, SQ – S11, SQ – S12, and the following design guidelines, and designs may be one of three types:

- i. Full Infiltration – where all inflow is intended to infiltrate into the underlying subsoil (SQ – S11).
- ii. Partial Infiltration – designed so that some water may infiltrate into the underlying soil while the remainder is drained by perforated pipes (SQ – S10).
- iii. Partial Infiltration with Flow Restrictor – designed with a perforated pipe and flow restrictor located at the bottom of the drain rock reservoir (Drawing SQ – S12).

3.6.f Infiltration Trench

Infiltration Trench systems shall meet the supplementary specifications, Drawing SQ - S13, and the following design guidelines:

- i. Locate Infiltration Trench at least 3.0 m from any building, 1.5 m from property lines, and 6m from adjacent infiltration facilities (or as recommended by a geotechnical engineer).
- ii. If any surface water is to enter the system, provide pre-treatment erosion control to avoid sedimentation in the Infiltration Trench. Do not allow drainage from land uses with a high risk for water pollution (e.g. refueling stations) to enter an infiltration trench.
- iii. Infiltration Trench: installation of perforated distribution pipe and bottom of drainrock to be level. If more than one section of infiltration trench is required, design so that underground water is temporarily 'ponded' in each infiltration section, using underground weirs of undisturbed native material or constructed ditch blocks designed to create underground pooling in the reservoir sufficient for infiltration performance.
- iv. Install the Infiltration Trench in native ground, and avoid over-compaction of the trench sides and bottom, which reduces infiltration.

- v. Size the Infiltration Trench system by continuous flow modeling to provide rainfall capture of the design target.

3.6.g Oil / Grit Separators

Oil / Grit Separators installations shall meet the following requirements:

- i. Provide an internal high flow bypass that regulates the flow rate into the treatment chamber and conveys high flows (10.0% or less of the annual runoff volume) directly to the outlet such that scour and re-suspension of material previously collected does not occur.
- ii. Be capable of removing a minimum of 80% of the total suspended sediment load (TSS) for particle size of 50 microns and larger during a 24hr precipitation event with a 5-year return period. Chamber design to include provisions to capture floatable debris and oil/grease.
- iii. Maintenance access both to the structure and within the structure shall be provided so that accumulated oils and sediments can be readily removed with a vacuum truck.
- iv. The oil/grit separator shall be enclosed in a separate concrete manhole or vault structure. The structure and lid shall meet H20 loading. Concrete joints shall be oil resistant and water tight.

- 3.6.h Additional Stormwater Source Controls are described in the publication Stormwater Source Control Design Guidelines 2012 (GVS&DD) or most recent publication. The following Stormwater Source Controls are encouraged for use when appropriate, and shall require a custom design and specification document to be submitted for the approval of the District:

Soakaway Manhole System (Drawings SQ – S14, SQ – S15, SQ – S16), with design supported by a hydrogeotechnical engineering report concerning groundwater quality.

- 3.6.i Runoff controls are required to meet the objectives indicated in the sections entitled Storm Water Management and Discharge Rates and Quality of MMCD.
- 3.6.j Location of the maintenance options for control facilities as well as types of storage for the purpose of controlling discharge rates are defined in MMCD.
- 3.6.k The use of French Drains shall only be permitted where the topography and soil conditions are proven adequate to the acceptance of the District Engineer. A soils report will be required to support the design.

3.7 EROSION AND SEDIMENT CONTROL

- 3.7.a The Consulting Engineer will be required to demonstrate how work will be undertaken and completed so as to prevent the release of silt, raw concrete and concrete leachate, and other deleterious substances into any ditch, storm drain, watercourse or ravine. Construction and excavation wastes, overburden soil or other deleterious substances must be disposed of or placed in such a manner as to prevent their entry into any water course, ravine, storm drain system, or restrictive covenant area.
- 3.7.b Should siltation or erosion controls be required, details of the proposed works are to be included in the approved drawings and must be installed as part of the works.
- 3.7.c All siltation control devices must be situated to provide ready access for cleaning and maintenance.
- 3.7.d Proposed siltation control structures must be maintained throughout the course of construction and to the end of the maintenance period (final acceptance). Changes in the design of the structure will be required if the proposed structure is found to be inadequate.

3.8 NATURAL WATERCOURSES

All proposals for works affecting natural watercourses must be forwarded by the Consulting Engineer retained by the Owner to design the Works to the appropriate regulatory agencies.

3.9 DETENTION OF STORM RUNOFF

- 3.9.a All developments which are within the study boundary of a District approved stormwater or drainage plan must conform to the objectives and recommendations of the approved plan.
- 3.9.b Where possible, stormwater runoff is to be directed to a regional detention system (whether existing or proposed) in an effort to maximize the tributary area of the regional detention systems. Where an engineering investigation concludes that connection to a regional system is not practical in the long term, independent drainage systems with direct drainage discharge to creek systems may be permitted and shall meet the requirements of Section 3.8.
- 3.9.c Wet Detention Ponds

Wet Detention Ponds shall be shall meet the supplementary specifications Drawings SQ – S17, SQ – S18, SQ – S19 and SQ – S20, and the following design guidelines:

 - i. Wet detention ponds, complete with a permanent low level pool, are the preferred method of stormwater detention, however, for small development parcels, where engineering studies have determined that wet detention ponds are not feasible, dry detention ponds, pipe-based, stormwater detention systems may be considered, but only if approved by the District.

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- ii. In general, wet detention pond designs should maximize habitat and structural complexity in order to fully utilize the benefits offered by the wet detention pond while avoiding undesirable habitats with few species resulting from simple wet detention pond designs. Aesthetics and multiple-use aspects should be emphasized throughout the design.
- iii. All vegetation within the low level pool, pond and surrounding buffer shall conform to the detention pond landscaping criteria in Drawing SQ – S20.
- iv. The surface area of the permanent low level pool should represent at least 1.0% of the total developed area.
- v. The wet detention pond and outlet structure shall be designed such that the designed post-development discharge rate of the pond outflow does not exceed runoff levels generated by a pre-development 2-year storm event. If development is located within the boundary of a District approved stormwater or drainage plan, refer to the appropriate plan for approved discharge rates.
- vi. Primary spillway shall be designed to accommodate the post-development run-off generated by a 10-year storm event and an emergency spillway shall be designed to accommodate the post-development run-off generated by a 100-year storm event. The discharge path from the wet detention pond to the receiving environment shall be adequately protected from erosion.
- vii. The flow control structure shall be located within a lockable manhole positioned within the embankment for purpose of maintenance, access, safety and aesthetics. The design of the outfall structure shall be determined based on the exit velocity of stormwater runoff from the wet detention pond.
- viii. Pedestrian trails to District of Squamish Trail Standards may be included where applicable and desired.
- ix. Safety is to be provided by managing the contours of the wet detention pond to eliminate drop-offs and other hazards and by discouraging access to the permanent low level pool with appropriate vegetation on the safety bench in accordance with the detention pond landscaping criteria and Schedule C. The safety bench, located at the toe of the side-slopes leading to the permanent low level pool, is to be 2.0 m wide with a maximum slope of 3.0% and is required around the entire perimeter of the wet detention pond. Where safety benches cannot be accommodated, fencing may be considered, subject to the approval of the District.
- x. A minimum of 4 signs shall be installed around the perimeter of the wet detention pond with the following wording:

DANGER!
Water levels are subject to sudden change
Please KEEP OUT
For information, call the District of Squamish - Operations Department-
604-815-6868

SECTION 4 – ROADS

4.1 GENERAL

- 4.1.a All road classifications and designations for vertical and horizontal alignment elements will be designed utilizing information contained in this section and in compliance with the current edition of the Transportation Association of Canada (TAC) – Geometric Design Guide for Canadian Roads.
- 4.1.b Consulting Engineers retained by the Owner to design the works and services must consult with the District Engineer to determine what existing information may be of assistance to them.
- 4.1.c Where roadways fall within the area of Downtown Squamish as identified by the Downtown Streetscape Standards, those standards shall be followed in addition to this sections design criteria with the District of Squamish Downtown Streetscape Standards included in Schedule H.

4.2 ROAD CLASSIFICATIONS

- 4.2.a Prior to commencing detailed design, the Consulting Engineer must consult with the District Engineer with respect to classification, section, parking and bicycle lane requirements for all streets in or adjacent to the subdivision or development or other road improvements required due to the Development.
- 4.2.b Table 4.1 summarizes the general requirements for each road classification which shall be read in conjunction with the Standard Drawings and the Road Classification map found within the bylaw.

4.3 DESIGN PARAMETERS

4.3.a Design Speed

Unless otherwise accepted, roadways shall be designed to the following minimum standards as specified in the Transportation Association of Canada (TAC), Geometric Design Guide for Canadian Road Manual:

- i) Arterial: Ministry of Transportation and Highways Standards
- ii) Collector: 50 km/hr.
- iii) Local: 50 km/hr.

4.3.b Cross Section Elements

All right-of-way, easement and roadway widths shall be as identified in the Standard Drawings.

Table 4.1 – Road Cross Section Elements		
Road Classification	Minimum Right-of-Way Width (m)	Required Lane Width (m)
Arterial	25.0	Refer to MOTI
Collector – Major	20.0	3.5
Collector - Minor	20.0	3.5
Local Street	20.0	3.3
Limited Local Street	18.0	3.3
Bike Lane		1.5
Parking Lane		2.5
Trails	Varies	Varies
Lane	6.0	Varies

The Developer shall dedicate sufficient right-of-way to cover the road embankments. Where a cut or fill slope exceeds 1.5 m in vertical height, additional right-of-way or easement may be required at the discretion of the District Engineer.

4.4 HORIZONTAL ALIGNMENT

All horizontal alignment elements shall be designed in accordance with the Alignment and Lane Section of the current edition of the TAC, Geometric Design Guide for Canadian Roads.

4.5 VERTICAL ALIGNMENT

4.5.a All vertical alignment elements shall be designed in accordance with the Alignment and Lane Section of the current edition of the TAC, Geometric Guide for Canadian Roads.

4.5.b Vertical curves shall be provided at all grade changes greater than 1.0%.

4.5.c Vertical curve length is calculated by the equation $L = KA$ where:

L = the length of the vertical curve in metres.

K = a constant related to lines and geometry of a parabolic curve.

A = is the algebraic difference in grades in percent.

4.5.d Minimum K values for vertical curve design shall be as shown in the current edition of the TAC, Geometric Guide for Canadian Roads.

- 4.5.e Maximum road grades are generally as shown in Table 4.2.

Table 4.2 – Maximum Roadway Grades	
Roadway Classification	Maximum Grade
Arterial	8%
Collector	10%
Local	12%
Limited Local	12%
Cul-de-sac	10%
Cul-de-sac Bulb	6%

- 4.5.f Maximum road grades may be exceeded by a maximum of 2.0% for a maximum of 30.0 m.

4.6 CUL-DE-SACS

- 4.6.a Cul-de-sac bulbs shall be used to terminate “no exit” roads and shall have adequate pavement radii to ensure emergency or operations vehicle access. See dwg SQ-R05.
- 4.6.b Maximum length of cul-de-sac streets to be 200 m per MMCD as measured from the edge of the intersecting through road to the centre of the cul-de-sac bulb when there is no alternate access from the bulb, and 210 m when there is alternate access (e.g. emergency access road) provided.
- 4.6.c Roads must be constructed to the end of the furthest property line of the last lot being built. If the road is to continue in the future then a temporary turn around complete with barrier posts must be constructed. The temporary turn around must be constructed to allow maintenance vehicles and garbage trucks to turn around.

4.7 ROAD CROSS SECTIONS

- 4.7.a Road cross sections shall follow the Standard Drawings unless otherwise approved by the District Engineer.
- 4.7.b Roads shall be centre line crowned with a minimum slope of 2.0% to the gutter or edge of minimum shoulder.
- 4.7.c Cross falls and Super-elevations should be used as indicated in the TAC Geometric Design Guide.

4.8 ROAD WORKS STRUCTURE

The minimum road works structure requirements are as shown in Table 4.3. Each road structure is to be designed based on site specific soil conditions and traffic loadings. The road works structure must be confirmed as acceptable during construction by a qualified Geotechnical Engineer.

Table 4.3 – Road Structure			
Road Classification	Compacted Sub-Base Thickness (mm)	Compacted Base Thickness (mm)**	Compacted Asphalt Thickness Lower/Upper Course (mm)
Arterial	BCMoTI Standards	BCMoTI Standards	BCMoTI Standards
Collector - Major - Minor	300 300	150 150	60/40 45/40
Local	300	150	45/40
One Way	300	150	45/40
Limited Local	300	100	40/40

4.9 INTERSECTIONS

- 4.9.a Intersections are to be designed as close as possible to right angles with a maximum variation of 20 degrees.
- 4.9.b Cross-slopes at intersections shall follow TAC, Geometric Design Guide for Canadian Roads.
- 4.9.c The minimum spacing between intersections is:
 - i) Along Collector Streets – 60.0 m.
 - ii) Along Local Streets, 4 Way Intersections – 60.0 m.
 - iii) Along Local Streets, 3 Way Intersections – 40.0 m.

4.10 CURB RETURN RADII

- 4.10.a Minimum curb return radii to conform to MMCD standards and shall be provided at all intersections.
- 4.10.b The minimum property corner cut shall follow MMCD standard.

4.11 DRIVEWAYS/CROSSOVERS

- 4.11.a All lots must be provided with an access driveway in accordance with MMCD and this Bylaw.
- 4.11.b Driveway grades are to be set such that minimum cover over utilities within the Boulevard is maintained.
- 4.11.c **Driveway Grades:**
 - i. Between the back of curb (or road edge in the absence of a curb) and property line, the maximum driveway grade is 2%; and,
 - ii. Driveway grade to be a maximum of 15% from property line to 10 m into private property.
- 4.11.d **Number of Driveways:**
 - i) Urban Residential Areas:
 - a. The number of driveways shall not be more than one for every 25 m of the total frontage involved;
 - b. Residential driveways on corner lots shall be accessed from the street which carries the least amount of traffic and shall be as far from the intersection as possible but no closer than 7.5 metres from the projected intersection property lines of the lot.
- 4.11.e **Driveway Location and Widths**
 - i. Urban Residential Areas
 - a. Driveways located on corner lots should be at least 5.0 m from corner lot and 2.0 m from interior lot corner nearest the intersection. Provision of adequate sight distance should be considered in accordance with TAC Geometric Design Guidelines for Canadian Roads.
 - b. Maximum width of Urban residential driveways is 6.0 m.
 - c. Driveways are to be as close to right angles, with the edge of the road, with a maximum variation of 20 degrees for the first 6.0 m from the road edge.

4.12 WHEELCHAIR RAMPS

- 4.12.a Wheelchair ramps must be provided at all intersection curb returns as an integral part of the sidewalk or to link walkways and crosswalks and shall be designed to MMCD standards.

4.13 SIDEWALKS

- 4.13.a Concrete sidewalks must be provided on roads in or adjacent to subdivisions in accordance with the Works and Services required, the Standard Drawings of this Bylaw and to MMCD standards.
- 4.13.b The maximum gradient for sidewalk shall match the adjoining roadway grade unless otherwise approved by the District Engineer. Concrete stairs are to be installed where required to suit the terrain of the site, when the grade exceeds 12.0%.

- 4.13.c Retaining walls shall be installed for sidewalks as required to suit the site topography. The design shall be specific to the situation and must be certified by a Professional Engineer.

4.14 BOULEVARDS/STREETSCAPES

- 4.14.a Where Boulevards and street trees fall within the area of Downtown Squamish those standards shall be followed in addition to this Section's design criteria. A portion of the District of Squamish Downtown Streetscape Standards is included as Schedule H.
- 4.14.b The design of streetscape improvements shall consider the items listed below. The determination of what is to be addressed rests with District Officials. In determining which items are to be included, consideration will be given to the road classification of the street and the zoning of adjacent properties including but not limited to the following:
- i. Concrete sidewalk;
 - ii. Trees, shrubs and other plant materials;
 - iii. Grass and other ground cover vegetation;
 - iv. Paving stones in a variety of materials;
 - v. Bioswales or infiltration trenches as described in Section 3.6.
- 4.14.c Street Trees
- i. Road design standards provide adequate room for tree planting and landscaping within the right-of-way;
 - ii. The planting of trees on all new District residential roads shall be a requirement of all subdivisions.
 - iii. The Developer shall prepare and submit to the District a Landscaping Plan for review and approval. The Landscaping Plan shall show tree planting locations and species.
 - iv. Where development is located with the Downtown area, street trees to be designed in accordance with the Downtown Streetscape Standards in addition to the v) and vi).
 - v. In areas outside of the Downtown area, trees to be planted along streets typically shall be randomly spaced to provide one tree in front of each lot and a separation dependent upon the species but typically 7.0 m to 12.0 m apart.
 - vi. trees shall not be planted within:
 - a) 6.1 m from street intersections and crosswalks – protect sight lines;
 - b) 6.0 m from street lighting – project illumination;
 - c) 3.0 m from utility poles, junction boxes, vaults;
 - d) 2.0 m from catch basins, driveways, utility services, hydrants and manholes;
 - e) no underground utilities to pass directly under the root ball;
 - f) when selecting tree species near overhead power lines, the designer shall ensure that the canopy of the mature tree will maintain the minimum distances as required by Electrical Regulations;
 - g) consideration should be given in locating trees within the boulevards to avoid obstructing traffic signs, driveways, and sight lines;
 - h) the view corridor of main windows or patios.

4.15 TRAFFIC CONTROL AND TRAFFIC CALMING DEVICES

- 4.15.a Traffic signs are to be designed in accordance with the current edition of the TAC Manual of Uniform Traffic Control Devices for Canada.
- 4.15.b Crosswalks to be designed in accordance with the current edition of the Province of British Columbia Ministry of Transportation and Infrastructure - Pedestrian Crossing Control Manual.
- 4.15.c Traffic calming measures shall be employed as appropriate and at the direction and approval of the District Engineer to maximize road safety and are to be designed in accordance with the current edition of the TAC "Canadian Guide to Neighbourhood Traffic Calming".
- 4.15.d Traffic control and calming design drawings are to be submitted as part of the Detailed Design Drawing package.

4.16 EMERGENCY ACCESS

- 4.16.a Maximum grade is 12.0%.
- 4.16.b Right-of-way width to be a minimum of 6.5 m.
- 4.16.c Restricted non-emergency vehicles' access through the use of removable restriction posts per MMCD Standard Drawing C12.
- 4.16.d Shared use with pedestrian walkway or bikeway.
- 4.16.e Emergency access shall be all-weather, positively drained accesses, constructed with a hard surface consisting of 75mm of compressed crushed grave or 50mm of asphalt pavement.

4.17 HILLSIDE STANDARDS

4.17.a General

- i. Hillside areas are defined as lands in their natural state that have a slope angle of 20% or greater for a minimum horizontal distance of 10 metres, or there are adjacent offsite areas within 50 m where existing or potential sloughing or slope stability warrants concern; or
- ii. Detailed geotechnical, slope stability and hydrological reports shall be required prior to approval of a subdivision or development;
- iii. For hillside areas a Pre-Design Report will be required prior to approval and provide recommendations for the following:
 - a. Slope stability concerns;
 - b. retaining walls as required;
 - c. Lot Grading Plan that mitigates drainage impacts onside and downstream;
 - d. Road structure and tack coat requirements
 - e. Guard rail requirements;
 - f. Driveway access profiles
 - g. Environmental impact assessment.

4.17.b Roads

- i. Maximum grades shall be as per Table 4.2;
- ii. The requirement for guard rail installation will be on the basis of a warrant analysis as per the Transportation Association of Canada Geometric Design Guideline for Canadian Roads.

4.17.c Cross Sections

- i. Roadway cross sections are to be installed as illustrated in the Supplemental Standard Design Drawings SQ-R06, SQ-R07, SQ-R08, SQ-R09, SQ-R10 and SQ-R11;
- ii. Level access clearance of 1.5 m around fire hydrants, transformers and vaults must be established.

4.17.d Intersection Grades / Site Clearances

- i. Through street maximum grade is to be 8%;
- ii. Cut and fill slopes, vegetation planting, retaining wall structures and parking shall be designed to protect all site distances.

4.17.e Cul-de-Sac Streets

- i. Maximum road length from the edge of the intersection through road: 400 m provided that a mid-block turnaround is provided;
- ii. Secondary emergency access is required where cul-de-sac lengths exceed 200 m;
- iii. At road intersections, cul-de-sacs must be constructed with an approach grade of not greater than 3.0% for a distance of not less than 15.0m from the adjacent edge of asphalt of the major road;
- iv. The draining grade around the outside curb of a cul-de-sac must be not less than 0.5% and not greater than 5.0%. Longitudinal gradients of cul-de-sac bulbs shall not exceed 5.0%;
- v. Major flood routes must be provided on down slope cul-de-sac streets;
- vi. Snow storage areas must be provided in the boulevard and outside of the cul-de-sac bulb.

4.17.f Emergency Access Roads

- i. Maximum grade: 12%;
- ii. Minimum right-of-way is to be 6.5 m;
- iii. Minimum paved surfaced width is to be 4.5 m with 1.0 m gravel shoulder on both sides;
- iv. Removable restriction posts to prevent access by non-emergency vehicles to be as per MMCD standard drawing C12;
- v. Asphalt thickness shall be a minimum of 50mm, placed in one lift;
- vi. Shared use with pedestrian walkway or bikeway is permitted.

4.18 SIGNAGE AND LINE PAINTING

- 4.18.a Traffic paint markings and signage to be designed in accordance with the current edition of the following:
 - i. Manual Uniform Traffic Control Devices for Canada, by Transportation Association of Canada; and
 - ii. Bikeway Traffic Control Guidelines for Canada, by Transportation Association of Canada
- 4.18.b Coloured green paint shall be applied to the full width of a bike lane along with dotted line extensions through high conflict areas such as intersections and high traffic crossings. This shall include a minimum of 10m on both sides of the conflict areas. Additional paint markings shall be considered as per the Urban Bikeway Design Guide prepared by the National Association of City Transportation Officials.

4.19 TRAILS

- 4.19.a This Section sets out the general criteria to provide consistency to the trail network within the District of Squamish. Noting that all public access trails are a “shared resource and a shared use”, they must consider in their design and construction that no public trails are of exclusive use. The following design criteria shall be read in conjunction with the District of Squamish Trail Standards document.
- 4.19.b Trails shall conform to the criteria defined in Table 4.4, 4.5 and 4.6, and the Standard Drawings.

District of Squamish
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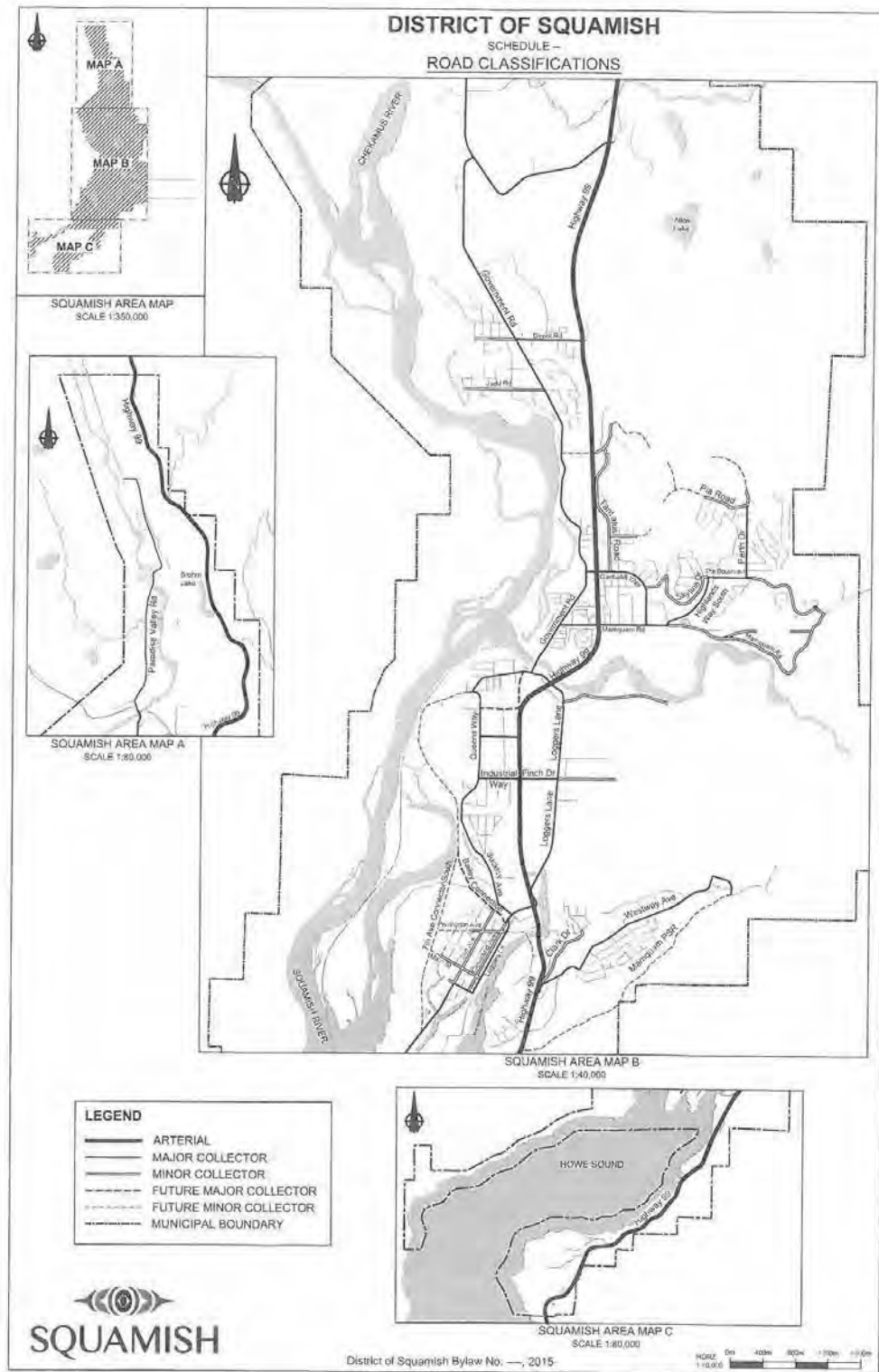


Table 4.4 – Primary / Corridor Trail Standards

<i>Trail Classification</i>	<i>Primary / Corridor Trail/ Trails Master Plan</i>
<i>Trail Surface Width</i>	Minimum – 3 m
<i>Cleared width for drainage</i>	Minimum – 7 m to allow for drainage and buffers
<i>Right of way setbacks from cleared width</i>	2 – 5 m/side as topography indicates and/or as required for future growth.
<i>Surface</i>	Minimum - Highly compacted screenings (low use urban areas). Preferred – Asphalt or Highly compacted alternative (high Use urban areas). Colorized and stamped concrete may be used at intersections or rest areas.
<i>Sub-grades</i>	Refer to SQ–R12 and SQ–R13.
<i>Gradients</i>	Average 0 - 3%, Max. 5.0% or 8.0% over 4.0 m
<i>Cross-slope</i>	2 - 3%
<i>Clearance: Width – Brush – Height – Branches</i>	Brush - Trail Cleared Width plus min. 2 m/side Height - 3.5 m to branches Retain trees when practical
<i>Sightlines</i>	Good visibility for 20 m.
<i>Buffers</i>	Maintain clear surveillance from Highway, except where environmental or technical issues require rerouting. Maintain natural buffers where they do not compromise safety.
<i>Landscaping</i>	Landscape appropriately between trail and adjacent facilities and amenities. Landscape at appropriate trailheads with native vegetation.
<i>Lighting</i>	Appropriate pedestrian-level lighting in forested urban areas to allow evening commuting and access.
<i>Maintenance Access</i>	Locked bollards at trailheads and intersections to allow maintenance and emergency vehicle access.
<i>Wheelchair Accessibility</i>	Trail must meet minimum Provincial standards for surface material, width and gradient to accommodate manual or motorized wheelchairs.
<i>Signage / Markers</i>	Signage includes trailhead and collector trail posts, including appropriate distance (0.5 – 1 km) markers. Information kiosks and posted trail maps may be constructed at key intersections. Interpretive and special feature signs may be placed where appropriate.

Table 4.5 – Area / Collector Trail Standards	
<i>Trail Classification</i>	<i>Area / Collector Trail</i>
<i>Trail Surface Width</i>	Minimum – 3 m
<i>Cleared width for drainage</i>	Minimum – 5 m to allow for drainage and buffers
<i>Right of way setbacks from cleared width</i>	1 – 2 m/side as topography indicates and/or as required for future growth.
<i>Surface</i>	Minimum - Highly compacted screenings. Preferred – Asphalt or alternative (closer to Corridor trail connections).
<i>Sub-grades</i>	Refer to SQ–R14 and SQ–R15
<i>Gradients</i>	Average 0 - 10%, Max. 15% or 20% over 30 m
<i>Cross-slope</i>	2 - 3%
<i>Clearance: Width – Brush – Height – Branches</i>	Cleared Width plus min.1.0 m/side Height - 3.5 m to branches Retain trees when practical
<i>Sightlines</i>	Good visibility for 10 m.
<i>Buffers</i>	Maintain natural buffers where they do not compromise safety. Buffer from homes and businesses to mitigate impacts (ex. fencing, landscaping).
<i>Landscaping</i>	Landscape appropriately between trail and adjacent facilities and amenities. Landscape at appropriate trailheads with native vegetation.
<i>Lighting</i>	Not applicable. Dawn to dusk use.
<i>Maintenance Access</i>	Same as Table 4.4 where access is appropriate. Some dykes or wide trails may require gates to control vehicle access.
<i>Wheelchair Accessibility</i>	Same as Table 4.4 for paved sections of trail. Paving may be added as funding permits.
<i>Signage / Markers</i>	Includes trailhead posts and appropriate signage/markers. Interpretive signs where appropriate.

Table 4.6 – Neighbourhood Trail Standards	
<i>Trail Classification</i>	<i>Neighbourhood</i>
<i>Trail Surface Width</i>	Minimum – 2 m
<i>Cleared width for drainage</i>	Minimum – 4 m to allow for drainage and buffers
<i>Right of way setbacks from cleared width</i>	1 – 1.5 m/side as topography indicates and/or as required for future growth.
<i>Surface</i>	Minimum - Fine compacting gravel (equestrian use).
	Preferred – Compacted screenings.
<i>Sub-grades</i>	Refer to SQ–R16 and SQ–R17
<i>Gradients</i>	Average 0 - 15%, Max. 30% over 150 m
<i>Cross-slope</i>	2 - 3%
<i>Clearance: Width – Brush – Height – Branches</i>	Cleared Width plus min. 5 m/side Height - 3 m to branches Retain trees when practical
<i>Sightlines</i>	Good visibility for 8 m
<i>Buffers</i>	Maintain natural buffers where they do not compromise safety. Buffer from homes and businesses to mitigate impacts (ex. fencing, landscaping).
<i>Landscaping</i>	Site specific, as required.
<i>Lighting</i>	Not Applicable. Dawn to dusk use.
<i>Maintenance Access</i>	Site specific, as required.
<i>Wheelchair Accessibility</i>	Site-specific restrictions may limit access because of various trail surface materials, natural gradients and restrictive trail widths.
<i>Signage / Markers</i>	Trail indicator/post where appropriate.

- 4.18.3 Where a trail intersects with a highway a baffle gate per MMCD Drawing C10, C11 and/or C12 shall be provided.

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SECTION 5 – ELECTRICAL DISTRIBUTION AND ILLUMINATION

5.1 Electrical Distribution and Service

This section applies to the review and approval process for all shallow electrical utilities in a new residential development. Where roadways fall within the area of Downtown Squamish as identified by the Downtown Streetscape Standards, those standards shall be followed in addition to this sections design criteria. The District of Squamish Downtown Streetscape Standards are included as Schedule H.

5.1.a General Requirements

- i. Documents and drawings are to be submitted to the District Engineer for approval. The District's review and approval process shall begin with submission of shallow electrical utilities notification and approval documents by the Developer, including:
 - Hydro;
 - Telephone; and
 - Cable / Television
- ii. All power wiring and communications cabling in new subdivision shall be underground. In areas with existing over-head electrical utilities, these shall be transitioned to an underground system for all new developments. All developments shall be required to construct on-parcel ducting and in-building provisions for underground connections to power and communications utilities, unless otherwise approved by the District Engineer. A variance may be required if over-head installation is unavailable or cost prohibitive.
- iii. Developer shall be required to submit a copy of service agreements, including proof of payment, for all electrical utilities, noting any non-compliance issues as required.
- iv. Developer shall be required to submit two copies of engineering drawings, depicting the proposed alignments and locations for the underground electrical cables, junction or pull boxes, transformer vaults, pad-mount transformers, above-ground switching cubicles, electrical pedestals and other electrical distribution appurtenances, for review and approval by the District Engineer.

5.1.b Design Requirements

- i. The design of underground electrical utilities shall conform in general to the Canadian Electrical Code as revised and adopted by the Province of British Columbia, as well as to the specific requirements of the electrical utilities. The designer shall adhere to the stricter standards, in the event of conflict among various design standards. All electrical design drawings are to be sealed by a Professional Engineer registered in British Columbia.
- ii. All electrical utilities shall be installed in accordance with the standard road cross sections unless otherwise approved by the District Engineer.

- iii. The minimum separation between underground electrical ducts / cables must be acceptable to the respective electrical utilities. A minimum horizontal clearance of 1.0 m shall be maintained between underground electrical utilities and street lighting wiring.
- iv. All underground ducts / cables shall be laid in a straight line at a constant offset and a uniform grade. At the curved road allowance, the ducts / cables may be laid on a horizontal curve at a constant offset. The ducts / cables at road-way crossings shall be laid in a straight line at right angles to the center-line of the road-way. Developer must submit two final copies of the Engineered sealed design drawings.
- v. All electrical surface and sub-surface appurtenances shall be designed and located a minimum of 1.0m from other street fixtures, landscaping and infrastructure. Electrical appurtenances must not be located directly above water mains or water service connections.
- vi. Developer shall submit Record drawings depicting exact locations of:
 - All buried cables and underground ducts
 - All surface and sub-surface appurtenances
 - All underground splicing and pull chambers

5.2 ILLUMINATION DESIGN STANDARDS

The purpose of this section is to supplement and clarify existing design guidelines as described in 'Section 6 – Roadway Lighting' of MMCD Design Guidelines 2014. The designer must comply with all requirements included in reference documents and described herein, unless specifically pre-approved otherwise by the District Engineer.

5.2.a MMCD Section 6.1 Design Guidelines – General

- i. The Designer shall minimize light pollution and avoid over-lighting. The lighting shall not exceed the recommended light levels by more than 15%;
- ii. All lighting shall be LED type, and Unit Power Density (UPD) of luminaire shall not exceed 0.2 W/m². The designer shall refer to 'Section 10 – Sustainability Considerations 2014 – Lighting & Signalization' of MMCD Design Guidelines 2014, for further clarifications in this regard.

5.2.b MMCD Section 6.2.3 Design Guidelines – Permits

- i. The lighting installer shall obtain electrical permit, from nearest BC Safety Authority (BCSA) office, prior to start of construction.

5.2.c MMCD Section 6.3 Design Guidelines – Roadway and Pedestrian Criteria

- i. The designer shall use 'Low Pedestrian Level' for purposes of determining lighting design criteria.

5.2.d MMCD Section 6.5.1 Design Guidelines – Light Sources and Luminaires

- i. The Luminaire shall be LED, 4000K color temperature, and maximum 450mA driver current.
- ii. The Designer shall use the lowest possible BUG (Backlight, Uplight & Glare) rating for outdoor luminaire, preferably no worse than B2-U0-G1.

5.2.e MMCD Section 6.5.2 Design Guidelines – Light Loss factor

- i. The Designer shall use the light-loss-factor (LLF), for 20 year maintenance cycle. The recommended light loss factors for pre-approved lighting products are shown in table below.

LED Roadway Satellite Series				
280mA	350mA	450mA	525mA	600mA
.075	0.74	0.74	0.71	0.70

LED Roadway NXT Series				
280mA	350mA	450mA	525mA	600mA
0.8	0.8	0.8	0.8	0.79

5.2.f MMCD Section 6.13 Design Guidelines – Poles

- i. All poles must be galvanized, and may require powder-coat finish if directed so by the District Engineer at the beginning of the project to improve appearance for local neighborhood;
- ii. The standard pole heights and application are as per below:
 - 4.0 m or 6.0 m post-top pole – Walkways;
 - 7.5 m pole with single 2.4 m davit – Local residential streets;
 - 9.0 m pole with single 2.4 m davit – Arterial and collector streets;
 - Double davit poles not acceptable, unless specifically pre-approved by the District Engineer.
 - For approved pole davit and luminaire see Approved Product List.

5.2.g MMCD Section 6.15 Design Guidelines – Luminaires

- i. The pre-approved luminaire shall be as manufactured by ‘LED Roadway Lighting’, Satellite or NXR Series.

5.2.h MMCD Section 6.16 Design Guidelines – Power Supply and Distribution

- i. 347/600v power system shall not be acceptable;
- ii. All lighting installations shall be metered, independently of any other load services;
- iii. The Designer may use direct-buried TECK 90 cable, in lieu of RPVC conduit filled with RW90 conductors;
- iv. The Designer shall refer to ‘Section 10 – Sustainability Considerations 2014 – Lighting & Signalization’ of MMCD 2014, for further clarifications if Adaptive lighting systems are considered for a project.

5.2.i MMCD Section 6.17.4 Design Guidelines – Drawing Requirements

- i. Construction shall not proceed until the District Engineer signs-off on approval drawings & Calculation submissions from the Designer;
- ii. The Designer shall be responsible for provision of close-out submittals, including, lighting installation acceptance certificate, record drawings with as-built information and O&M manuals.

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SCHEDULE C

STANDARD DRAWINGS

Use Table 1.1 to determine the status of the Standard Drawings contained in the MMCD. For the most part the District adopts them however there are some that are deleted and some that the District has added for further clarification.

Table 1.1

Drawing Number	Drawing Name	Reference
GENERAL DETAILS		
SQ-G01	TYPICAL LOT SERVICE CONNECTION	DISTRICT
GENERAL DETAILS		
G0	DRAWING INDEX – GENERAL DETAILS	MMCD
G1	GENERAL LEGEND FOR CONTRACT DRAWINGS	MMCD
G2	LEGEND FOR MATERIALS	MMCD
G3	LEGEND FOR STREET LIGHT AND TRAFFIC SIGNAL DRAWINGS	MMCD
G4	UTILITY TRENCH	MMCD
G5	PAVEMENT RESTORATION	MMCD
G6	CONCRETE ENCASEMENT FOR WATERMAIN/SEWER SEPARATION	MMCD
STORM AND SANITARY SEWERS		
S0	DRAWING INDEX – STORM AND SANITARY SEWERS	MMCD
S1	STANDARD AND SUMP MANHOLES	MMCD
S2	STANDARD MANHOLE CONNECTION DETAILS	MMCD
S3	MANHOLE CONNETION DETAILS-DROP AND RAMP TYPE	MMCD
S4	INSIDE DROP MANHOLE	MMCD
S5	PRECAST RISER MANHOLE	MMCD
S6	SEWER CLEANOUT	MMCD
S7	SANITARY SEWER SERVICE CONNETION	MMCD
S8	STORM SEWER SERVICE CONNECTION	MMCD
S9	INSPECTION CHAMBER FOR 100 TO 200 SANITARY SEWER CONNECTION	MMCD
S10	INSPECTION CHAMBER FOR 250 TO 375 STORM SEWER CONNECTION	MMCD

S11	TOP INLET CATCH BASIN	MMCD
S12	LAWN DRAINS	MMCD
S13	STORM SEWER INLET WITH SAFETY GRILLAGE	MMCD
S14	CONCRETE BLOCK ENDWALL	MMCD
S15	DRIVEWAY CULVERT WITH CONCRETE BLOCK ENDWALLS	MMCD

SUPPLEMENTARY STANDARD DETAIL DRAWINGS

SQ - S01	INFILTRATION SWALE PROFILE & PLAN	DISTRICT
SQ - S02	PARTIAL INFILTRATION SWALE WITH RESERVOIR & SUBDRAIN	DISTRICT
SQ - S03	FULL INFILTRATION SWALE WITH RESERVOIR	DISTRICT
SQ - S04	FULL INFILTRATION SWALE	DISTRICT
SQ - S05	FULL INFILTRATION SWALE WEIR	DISTRICT
SQ - S06	PARTIAL INFILTRATION RAIN GARDEN	DISTRICT
SQ - S07	FULL INFILTRATION RAIN GARDEN WITH RESERVOIR	DISTRICT
SQ - S08	FULL INFILTRATION RAIN GARDEN	DISTRICT
SQ - S09	PARTIAL INFILTRATION RAIN GARDEN WITH FLOW RESTRICTOR	DISTRICT
SQ - S10	PERVIOUS PAVERS PARTIAL INFILTRATION	DISTRICT
SQ - S11	PERVIOUS PAVERS FULL INFILTRATION	DISTRICT
SQ - S12	PERVIOUS PAVERS PARTIAL INFILTRATION WITH FLOW RESTRICTOR	DISTRICT
SQ - S13	INFILTRATION TRENCH WITH DISPERSED INPUT FACILITIES	DISTRICT
SQ - S14	DIAGRAM OF SEDIMENTATION MANHOLE AND INFILTRATION SHAFT	DISTRICT
SQ - S15	SEDIMENTATION MANHOLE	DISTRICT
SQ - S16	INFILTRATION SHAFT	DISTRICT
SQ - S17	STORM WATER MANAGEMENT – WET DETENTION POND – ACCESS ROAD	DISTRICT
SQ - S18	STORM WATER MANAGEMENT – WET DETENTION POND – SECTION	DISTRICT
SQ - S19	STORM WATER MANAGEMENT – WET DETENTION POND – PLAN VIEW	DISTRICT
SQ - S20	STORM WATER MANAGEMENT – WET DETENTION POND – VEGETATION ZONES	DISTRICT
SQ - S21	SQUAMISH IDF CURVE	DISTRICT
SQ - S22	STORM FLOW CONTROL MANHOLE	DISTRICT
SQ - S23	CURB CATCH BASIN DETAIL	DISTRICT
SQ - S24	SIDE INLET CATCH BASIN DETAIL	DISTRICT
SQ - S24A	ADJUSTABLE FRAME AND HOOD	DISTRICT
SQ - S25	LAWN BASIN	DISTRICT
SQ - S26	SHALLOW CATCH BASIN DESIGN	DISTRICT
SQ - S27	TYPICAL CULVERT INSTALLATION WITH RIP RAP END TREATMENT	DISTRICT
SQ - S28	SANITARY FORCE MAIN CONNECTION	DISTRICT

WATERWORKS

SQ-W01	METER INSTALLATION FOR 38 mm SERVICE CONNECTIONS	DISTRICT
SQ-W02	METER INSTALLATION FOR 50 mm SERVICE CONNECTIONS	DISTRICT
SQ-W03	WATER METER CHAMBER 100 mm AND LARGER	DISTRICT
W0	DRAWING INDEX – WATERWORKS	MMCD
W1	TYPICAL THRUST BLOCK ARRANGEMENTS	MMCD
W2a	WATER SERVICE CONNECTION – SERVICE BOX DELETE	MMCD
W2b	WATER SERVICE CONNECTION – VALVE BOX DELETE	MMCD
W2c	METER INSTALLATION FOR 19 AND 25MM SERVICE DELETE CONNECTIONS	MMCD
W2d	METER INSTALLATION FOR 38 AND 50 SERVICE DELETE CONNECTIONS	MMCD
W3	GATE VALVE INSTALLATION	MMCD
W4	FIRE HYDRANT INSTALLATION	MMCD
W5	TEST POINT INSTALLATION	MMCD
W6	AIR VALVE ASSEMBLY – 25 AND 50MM VALVES	MMCD
W7	AIR VALVE ASSEMBLY – 100MM VALVE CT	MMCD
W8	BLOW OFF FOR WATERMAIN	MMCD
W9	BLOW DOWN CHAMBER	MMCD
W10	WATERWORKS CHAMBER DRAIN	MMCD

CONCRETE AND MISCELLANEOUS DETAILS

C0	DRAWING INDEX – CONCRETE AND MISCELLANEOUS DETAILS	MMCD
C1	CONCRETE SIDEWALK, INFILL AND BARRIER CURB	MMCD
C2	CONCRETE SIDEWALK AND BARRIER CURB	MMCD
C3	CONCRETE SIDEWALK AND ROLLOVER CURB	MMCD
C4	CONCRETE CURB – NARROW BASE	MMCD
C5	CONCRETE BARRIER CURB – WIDE BASE	MMCD
C6	CONCRETE MEDIAN CURB AND INTERIM CURBS	MMCD
C7	DRIVEWAY CROSSING FOR BARRIER CURBS	MMCD
C8	WHEELCHAIR RAMP FOR SIDEWALK, INFILL AND BARRIER CURB	MMCD
C9	WHEELCHAIR RAMP FOR SIDEWALK AND BARRIER CURB	MMCD
C10	CONCRETE WALKWAY	MMCD
C11	BICYCLE BAFFLE	MMCD
C12	REMOVABLE RESTRICTION POST	MMCD
C13	CHAIN LINK FENCE FOR WALKWAY	MMCD

C14	HANDRAIL FOR CONCRETE RETAINING WALL	MMCD
CE1.1	CONCRETE BASE INDEX	MMCD
CE1.2	TYPE A AND B SONOTUBE CONCRETE BASES	MMCD
CE1.3	TYPE C, C1, C2 & C3 TRAPEZOIDAL SHAPE CONCRETE BASES	MMCD
CE1.4	TYPE C, C1, C1 & C3 TRAPEZOIDAL SHAPE CONCRETE BASES	MMCD
CE1.5	TYPE C4 & C5 SPREAD FOOTING SHAPE CONCRETE BASES	MMCD
CE1.6	TYPE C4 & C5 SPREAD FOOTING CONCRETE BASES	MMCD
CE1.7	TYPE C4 & C5 SPREAD FOOTING CONCRETE BASES	MMCD
CE1.8	TYPE E2 TRAPEZOIDAL SHAPE CONCRETE BASE	MMCD
CE1.9	TYPE E2 TRAPEZOIDAL SHAPE CONCRETE BASE	MMCD
CE1.10	TYPES F1, L1 & S1 SPREAD FOOTING SHAPE CONCRETE BASES	MMCD
CE1.11	TYPES F1, L1 & S1 SPREAD FOOTING SHAPE CONCRETE BASES	MMCD
CE1.12	TYPES F1, L1 & S1 SPREAD FOOTING SHAPE CONCRETE BASES	MMCD
CE1.13	TYPES F2, L2 & S2 TRAPEZOIDAL SHAPE CONCRETE BASES	MMCD
CE1.14	TYPES F2, L2 & S2 TRAPEZOIDAL SHAPE CONCRETE BASES	MMCD
CE1.15	1" DIAMETER ANCHOR BOLTS	MMCD
CE1.16	ANCHOR BOLT CAGE FOR TYPE 6, 7 AND S POLES	MMCD
CE1.17	ANCHOR BOLT CAGE FOR TYPE L POLES	MMCD
CE1.18	CONCRETE BASE FOR POST MOUNTED FLASHER LUMINAIRE (PRECAST)	MMCD
CE1.19	POLE BASE INSTALLATION DETAILS	MMCD
CE1.20	POLE BASE INSTALLATION DETAILS	MMCD

ROADWORKS

SQ – R01	MAJOR COLLECTOR STREET URBAN UNDIVIDED 25 M RIGHT-OF-WAY	DISTRICT
SQ – R02	MINOR COLLECTOR STREET URBAN UNDIVIDED 20 M RIGHT-OF-WAY	DISTRICT
SQ – R03	LOCAL STREET 20 M RIGHT-OF-WAY	DISTRICT
SQ – R04	LIMITED LOCAL STREET 18 M RIGHT OF WAY	DISTRICT
SQ – R05	STANDARD CUL-DE-SAC URBAN RESIDENTIAL 18 M RIGHT-OF-WAY	DISTRICT
SQ – R06	HILLSIDE STANDARD – (DEVELOPMENT BOTH SIDES) COLLECTOR STREET 20.0 M RIGHT OF WAY	DISTRICT
SQ – R07	HILLSIDE STANDARD – (DEVELOPMENT ONE SIDE) COLLECTOR STREET 20.0 M RIGHT-OF-WAY	DISTRICT
SQ – R08	HILLSIDE STANDARD – (NO DEVELOPMENT) COLLECTOR STREET 20.0 M RIGHT OF WAY	DISTRICT
SQ – R09	HILLSIDE STANDARD – (DEVELOPMENT ONE OR BOTH SIDES) LOCAL STREET 20.0 M RIGHT-OF-WAY	DISTRICT

District of Squamish
Subdivision and Development Control Bylaw No. 2373

SQ – R10	HILLSIDE STANDARD – LOCAL STREET (NO DEVELOPMENT) 20.0 M RIGHT-OF-WAY	DISTRICT
SQ – R11	ONE-WAY STREET 10.0 M RIGHT-OF-WAY	DISTRICT
SQ – R12	PRIMARY / CORRIDOR TRAIL TYPICAL SECTION	DISTRICT
SQ – R13	PRIMARY / CORRIDOR TRAIL TYPICAL PLAN	DISTRICT
SQ – R14	AREA / COLLECTOR TRAIL TYPICAL SECTION	DISTRICT
SQ – R15	AREA / COLLECTOR TRAIL TYPICAL PLAN	DISTRICT
SQ – R16	NEIGHBOURHOOD TRAIL TYPICAL SECTION	DISTRICT
SQ – R17	NEIGHBOURHOOD TRAIL TYPICAL PLAN	DISTRICT
SQ – R18	ENVIRONMENTALLY SENSITIVE TRAIL TYPICAL SECTION	DISTRICT
SQ – R19	ENVIRONMENTALLY SENSITIVE TRAIL TYPICAL PLAN	DISTRICT
SQ – R20	SWALE DETAIL TYPICAL	DISTRICT
SQ – R21	TYPICAL GATE	DISTRICT
SQ – R22	TYPICAL DRIVEWAY CROSS SECTIONS	DISTRICT

ELECTRICAL

E1.1	TYPE M (NEMA CABINET) CONCRETE CONTROLLER BASE	MMCD
E1.2	TYPE P (NEMA CABINET) CONCRETE CONTROLLER BASE	MMCD
E1.3	MODEL 170 CONCRETE CONTROLLER BASE	MMCD
E1.4	CONTROLLER INSTALLATION (FOR TYPE P & M CABINETS)	MMCD
E1.5	CONTROLLER INSTALLATION (FOR MODEL 170 CABINETS)	MMCD
E1.6	TYPE F CONTROLLER PEDESTAL	MMCD
E1.7	TYPE F CONTROLLER PEDESTAL	MMCD
E2.1	ROUND PLASTIC JUNCTION BOXES	MMCD
E2.4	LARGE CONCRETE JUNCTION BOXES	MMCD
E2.5	CONCRETE VAULT	MMCD
E2.2	TYPE 37 AND 66 CONCRETE JUNCTION BOXES	MMCD
E2.3	LARGE CONCRETE JUNCTION BOXES	MMCD
E2.6	CONCRETE VAULT	MMCD
E3.1	UNDERGROUND CONDUIT IN PAVED AREAS	MMCD
E3.2	UNDERGROUND CONDUIT IN NON-PAVED AREAS	MMCD
E4.1	LUMINAIRE POLE (TYPE 2 SHAFT)	MMCD
E4.2	LUMINAIRE POLE (TYPE 2 CHAFT)	MMCD
E4.3	SIGNAL POLE (TYPE 1 SHAFT)	MMCD
E4.4	SIGNAL POLE (TYPE 1 SHAFT)	MMCD
E4.5	SIGNAL POLE (TYPE 3 SHAFT)	MMCD
E4.6	SIGNAL POLE (TYPE 3 SHAFT)	MMCD
E4.7	SIGNAL POLE (TYPE 6 SHAFT)	MMCD
E4.8	SIGNAL POLE (TYPE 6 SHAFT)	MMCD
E4.9	SIGNAL POLE (TYPE 7 SHAFT)	MMCD

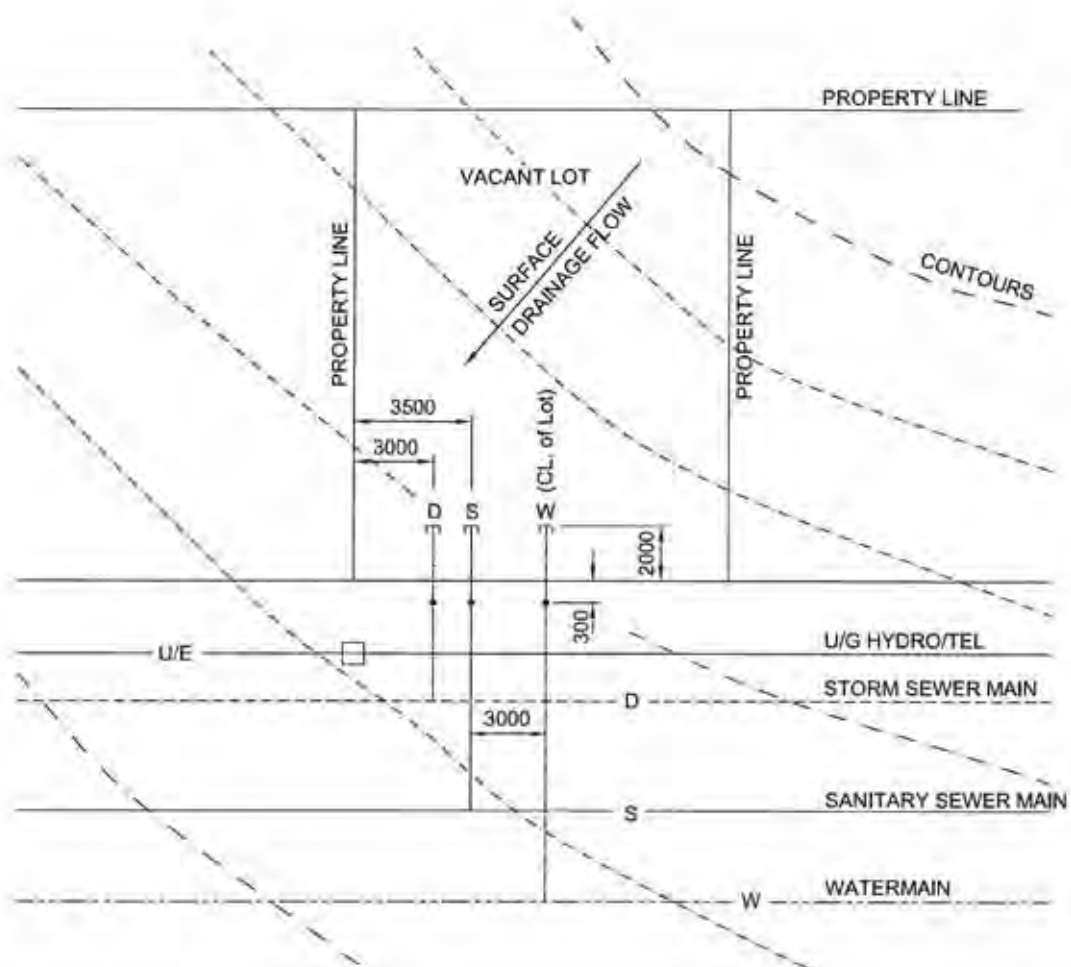
District of Squamish
Subdivision and Development Control Bylaw No. 2373

E4.10	SIGNAL POLE (TYPE 7 SHAFT)	MMCD
E4.11	SIGNAL POLE (TYPE S SHAFT)	MMCD
E4.12	SIGNAL POLE (TYPE S SHAFT)	MMCD
E4.13	SIGNAL POLE (TYPE S SHAFT)	MMCD
E4.14	SIGNAL POLE (TYPE L SHAFT)	MMCD
E4.15	SIGNAL POLE (TYPE L SHAFT)	MMCD
E4.16	SIGNAL POLE (TYPE L SHAFT)	MMCD
E4.17	SIGNAL POSTS (TYPE 4, 4A AND 5 SHAFTS)	MMCD
E4.18	SIGNAL POSTS (TYPE 4, 4A AND 5 SHAFTS)	MMCD
E4.19	POST TOP LUMINAIRE POLES	MMCD
E4.20	POST TOP LUMINAIRE POLES	MMCD
E4.21	SERVICE BASE	MMCD
E4.22	POLE ACCESSORIES	MMCD
E5.1	POST TOP SIGNAL HEAD MOUNTING	MMCD
E5.2	SIDE POLE SIGNAL HEAD MOUNTING (METHOD 1)	MMCD
E5.3	SIDE POLE SIGNAL HEAD MOUNTING (METHOD 2)	MMCD
E5.4	SIDE POLE SIGNAL HEAD MOUNTING (METHOD 3)	MMCD
E5.5	OVERHEAD SIGNAL HEAD MOUNTING (SPRING CUSHION END HANGER METHOD)	MMCD
E5.6	OVERHEAD SIGNAL HEAD MOUNTING (SPRING CUSHION MID HANGER METHOD)	MMCD
E5.7	OVERHEAD SIGNAL HEAD MOUNTING (PLUMPIZER METHOD)	MMCD
E5.8	OVERHEAD SIGNAL MOUNTING (PLUMBIZER METHOD)	MMCD
E5.9	OVERHEAD SIGNAL HEAD MOUNTING (ADJUSTABLE BRACKET METHOD)	MMCD
E5.10	OVERHEAD SIGNAL HEAD MOUNTING ON POLE ARM (BALL HANGER METHOD)	MMCD
E5.11	OVERHEAD SIGNAL HEAD MOUNTING ON (BALL HANGER METHOD)	MMCD
E5.12	AUDIBLE SIGNALS	MMCD
E6.1	PEDESTRIAN PUSHBUTTON WITH SEPARATE SIGN	MMCD
E6.2	PEDESTRIAN PUSHBUTTON WITH INTEGRAL SIGN	MMCD
E6.3	PEDESTRIAN PUSHBUTTON POST	MMCD
E7.1	UNDERGROUND DIP SERVICE	MMCD
E7.2	SERVICE PANEL IN SERVICE BASE (MOUNTING DETAILS)	MMCD
E7.3	SERVICE PANEL IN SERVICE BASE (MOUNTING DETAILS)	MMCD
E7.4	60A STREETLIGHTING AND 100A STREET LIGHT/TRAFFIC SIGNAL SERVICE PANEL IN SERVICE BASE (PANEL DETAILS)	MMCD
E7.5	60A (120/240V) STREET LIGHTING SERVICE PANEL IN SERVICE BASE (WIRING DIAGRAM)	MMCD
E7.6	100A (120/240V) TRAFFIC SIGNAL/STREET LIGHTING SERVICE PANEL IN SERVICE BASE (WIRING DIAGRAM)	MMCD
E7.7	100A TRAFFIC SIGNAL/STREETLIGHTING SERVICE PANEL ON POLE (MOUNTING DETAILS)	MMCD
E7.8	100A TRAFFIC SIGNAL/STREETLIGHTING SERVICE PANEL ON POLE	MMCD

	(MOUNTING DETAILS)	
E7.9	100A (120/240V) TRAFFIC SIGNAL/STREETLIGHTING SERVICE PANEL (WIRING DIAGRAM)	MMCD
E7.10	SERVICE GROUND PLATE INSTALLATION DETAIL	MMCD
E7.11	LUMINAIRE WIRING IN POLE HANDHOLE	MMCD
E7.12	SIGNAL CABLE WIRING IN POLE HANDHOLE	MMCD
E7.13	SIGNAL CABLE COLOUR CODE SAMPLE (ONTARIO SPEC METHOD)	MMCD
E7.14	MINIMUM CLEARANCES TO OVERHEAD POWERLINES	MMCD
E7.15	POLE MOUNTED RECEPTACLE	MMCD
E7.16	TELEPHONE DEMARCATION ENCLOSURE MOUNTING DETAILS ON CONTROLLER OR POLE	MMCD
E7.17	TELEPHONE CONDUIT ON UTILITY POLE	MMCD
E7.18	CONDUIT TIE-IN TO TELEPHONE VAULT, MANHOLE JUNCTION BOX	MMCD
E8.1	TYPICAL DETECTOR LOOP TYPES	MMCD
E8.2	DETECTOR LOOPS	MMCD
E8.3	DETECTOR LOOPS	MMCD
E8.4	DETECTOR LOOP TO SHIELDED CABLE SPLICES	MMCD
E8.5	DETECTOR LOOP PROCEDURES AND RULES	MMCD
E8.6	DETECTOR LOOP PROCEDURES AND RULES	MMCD
E8.7	TYPICAL LAYOUT FOR DIAMOND AND ROUND TRAFFIC SIGNAL DETECTOR LOOPS	MMCD
E8.8	PRE-FORMED DIAMOND DETECTOR LOOP INSTALLATION DETAILS	MMCD
E8.9	PRE-FORMED DIAMOND DETECTOR LOOP INSTALLATION DETAILS	MMCD
E9.1	FLASHER LUMINAIRE AND SIGNS ON PERFORATED STEEL TUBING	MMCD
E9.2	FLASHER LUMINAIRE AND SIGNS ON PERFORATED STEEL TUBING	MMCD
E9.3	FLASHER LUMINAIRE AND SIGNS ON STEEL POLE	MMCD
E9.4	FLASHER LUMINAIRE AND SIGNS ON STEEL POLE	MMCD
E10.1	OVERHEAD EXTRUDED ALUMINUM ADVANCE WARNING SIGN ASSEMBLY DETAILS	MMCD
E10.2	OVERHEAD EXTRUDED ALUMINUM ADVANCE WARNING SIGN INSTALLATION DETAILS	MMCD
E10.3	OVERHEAD EXTRUDED ALUMINUM ADVANCE WARNING SIGN INSTALLATION DETAILS	MMCD
E10.4	OVERHEAD EXTRUDED ALUMINUM SIGN INSTALLATION DETAILS	MMCD
E10.5	OVERHEAD EXTRUDED ALUMINUM SIGN INSTALLATION DETAILS	MMCD
E10.6	OVERHEAD EXTRUDED ALUMINUM SIGN ASSEMBLY DETAILS	MMCD
E10.7	OVERHEAD EXTRUDED ALUMINUM SIGN ASSEMBLY DETAILS	MMCD
E10.8	OVERHEAD EXTRUDED ALUMINUM SIGN ASSEMBLY DETAILS	MMCD
E10.9	OVERHEAD EXTRUDED ALUMINUM SIGN LUMINAIRE INSTALLATION DETAILS	MMCD
E10.10	JUNCTION BOX INSTALLATION DETAILS ON SIGN ARMS	MMCD

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NOTE:
 SANITARY AND STORM SEWER SERVICE CONNECTIONS
 TO BE INSTALLED ON THE LOWER SIDE OF THE LOT



TITLE:

TYPICAL LOT SERVICE
 CONNECTION

DISTRICT OF SQUAMISH

STANDARD DETAIL

APPR:

DATE: 2015

SCALE: NTS

DWG. NO: SQ - G01



TITLE:

INFILTRATION SWALE PROFILE & PLAN

DISTRICT OF SQUAMISH

STANDARD STORM DETAIL

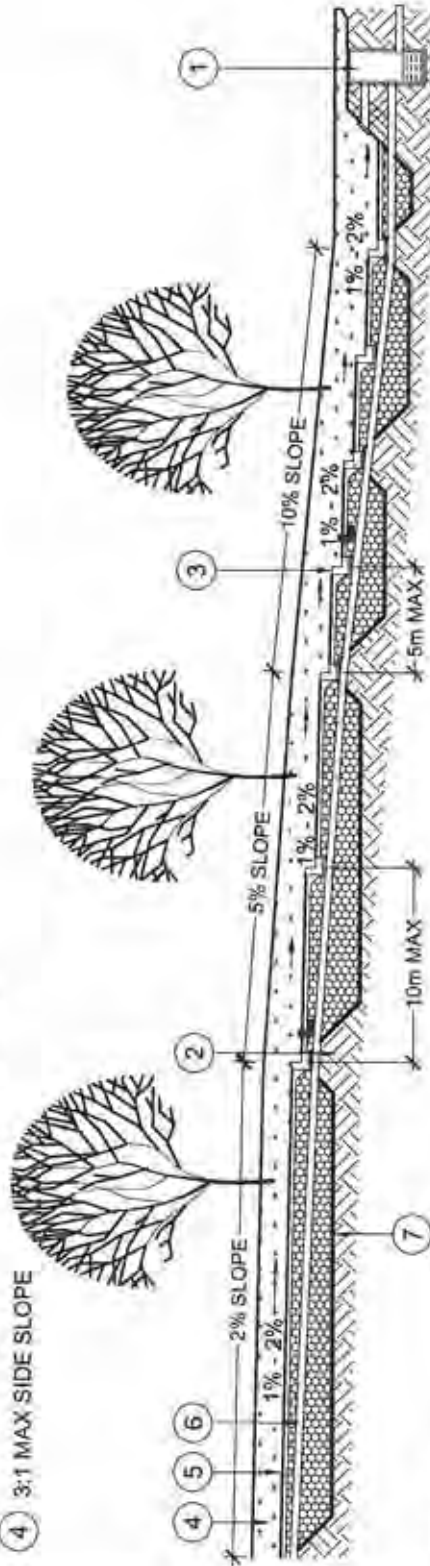
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DATE: 2015

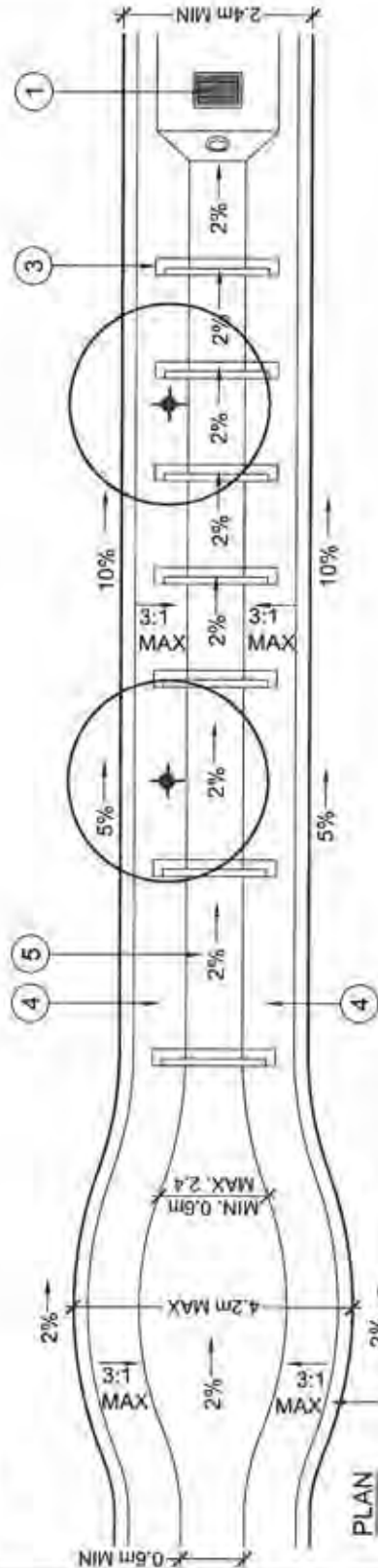
SCALE: N.T.S.

DWG. NO. SQ - S01

- ① SEDIMENT CLEANOUT BASIN; OUTLET TO PIPE SYSTEM OR WATERCOURSE
- ② DAM OF COMPACTED NATIVE MATERIAL OR EQUIVALENT TO CREATE SUBSURFACE BASIN
- ③ LEVEL WEIR KEYED INTO SWALE SIDE SLOPE
- ④ 3:1 MAX SIDE SLOPE
- ⑤ BOTTOM OF SWALE
- ⑥ PERFORATED DRAIN PIPE 150mm DIA. MIN
- ⑦ LEVEL BOTTOM DRAIN ROCK RESERVOIR

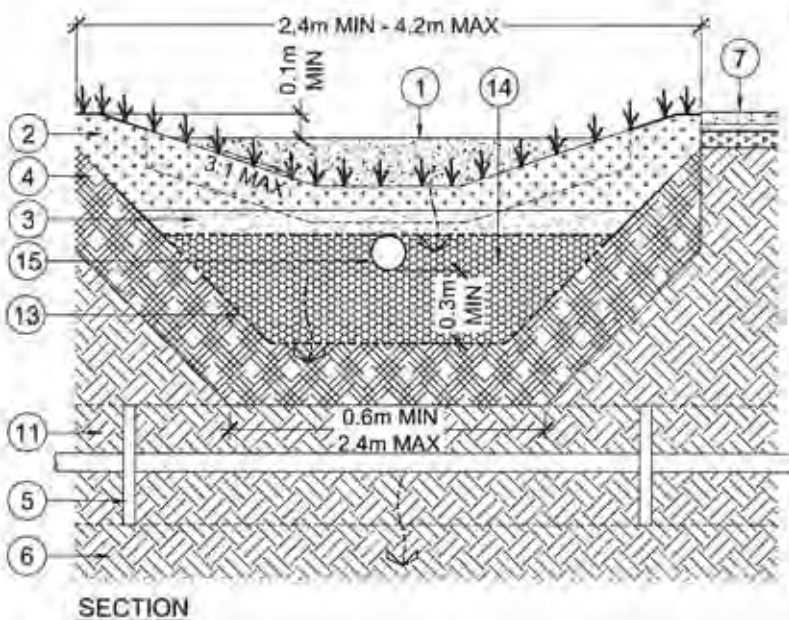
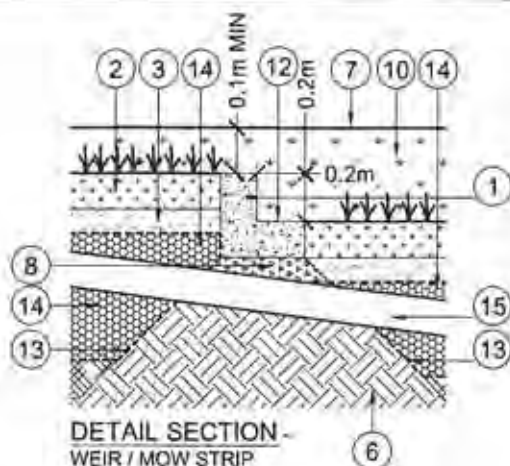
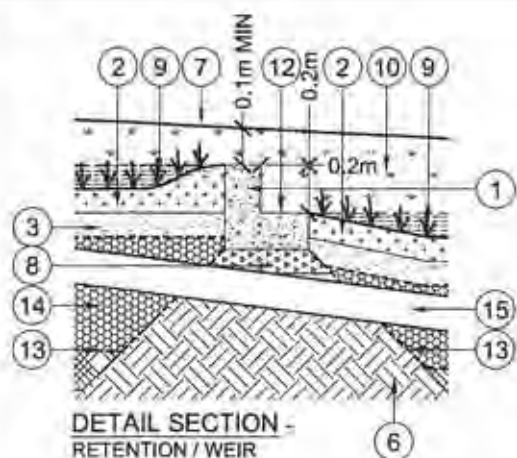


PROFILE



PLAN

NOTE: MINIMUM SWALE SIDE SLOPE MUST BE GREATER SLOPE THAN ROAD PROFILE



- ① LEVEL WEIR KEYED INTO SWALE SIDE SLOPE
- ② 350mm GROWING MEDIUM
- ③ 100mm SAND
- ④ EXISTING SCARIFIED SUBSOIL
- ⑤ TRENCH DAMS AT ALL UTILITY CROSSINGS
- ⑥ UNDISTURBED SUBSTRATE
- ⑦ ADJACENT GRADE
- ⑧ GRANULAR BASE
- ⑨ WATER BODY; MAX PONDED LEVEL 150mm
- ⑩ 3:1 MAX SLOPE
- ⑪ UTILITY TRENCH
- ⑫ MOW STRIP (OPTIONAL)
- ⑬ GEOTEXTILE ALONG ALL SIDES OF DRAIN ROCK RESERVOIR
- ⑭ DRAIN ROCK RESERVOIR (0.3m MIN)
- ⑮ PERFORATED UNDERDRAIN (0.15m DIA MIN)

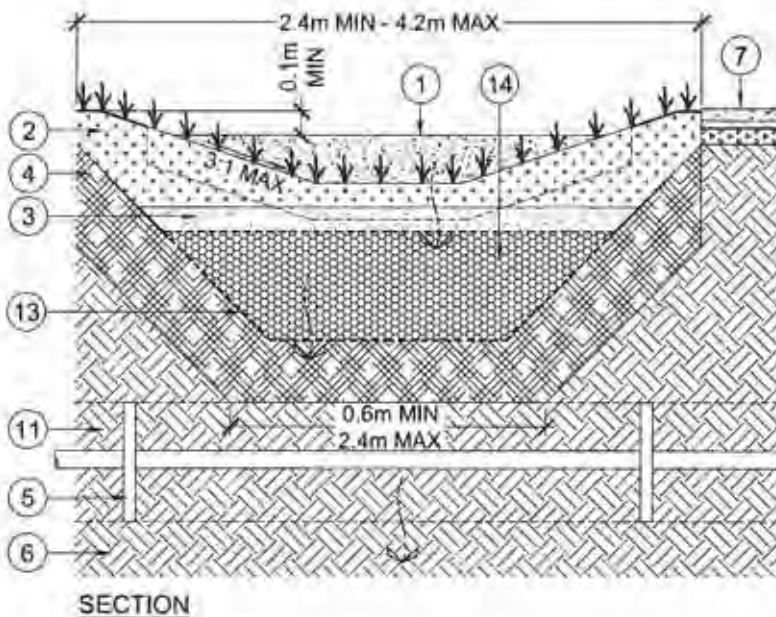
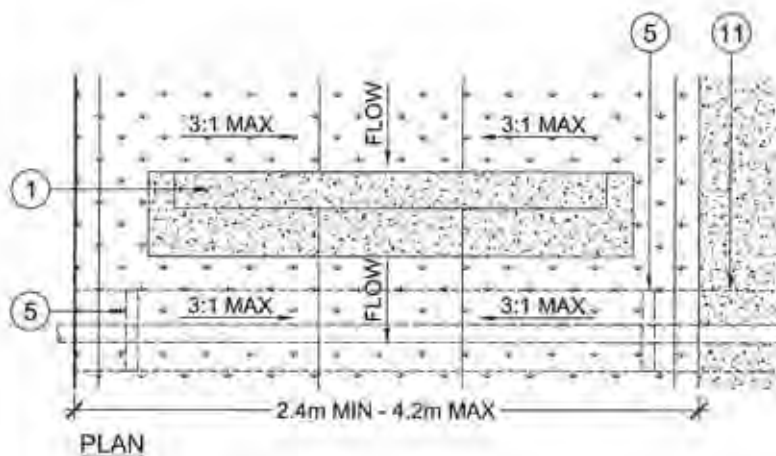
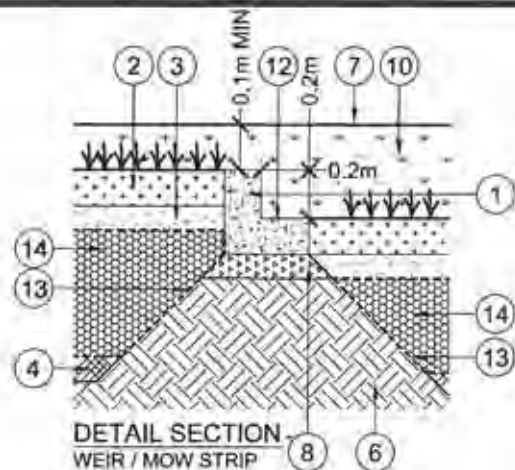
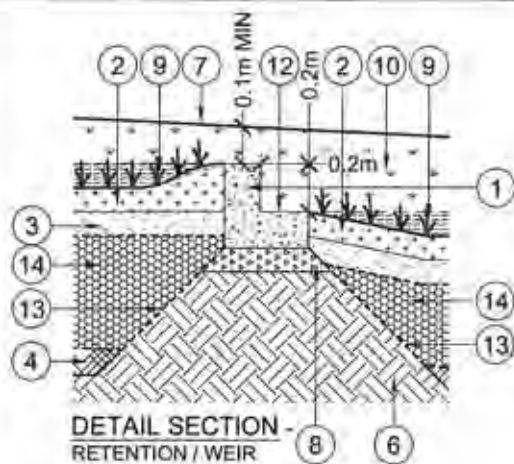
NOTE:
PROVIDE EROSION CONTROL ALONG SIDES OF WEIR AND AT DRAINAGE INLETS.


SQUAMISH

TITLE:
**PARTIAL INFILTRATION
SWALE WITH
RESERVOIR
& SUBDRAIN**

DISTRICT OF SQUAMISH
STANDARD STORM DETAIL

DATE: 2015	DATE: 2015
SCALE: N.T.S.	DWG. NO: SQ - S02



- ① LEVEL WEIR KEYED INTO SWALE SIDE SLOPE
- ② 350mm GROWING MEDIUM
- ③ 100mm SAND
- ④ EXISTING SCARIFIED SUBSOIL
- ⑤ TRENCH DAMS AT ALL UTILITY CROSSINGS
- ⑥ UNDISTURBED SUBSTRATE
- ⑦ ADJACENT GRADE
- ⑧ GRANULAR BASE
- ⑨ WATER BODY; MAX PONDED LEVEL 150mm
- ⑩ 3:1 MAX SLOPE
- ⑪ UTILITY TRENCH
- ⑫ MOW STRIP (OPTIONAL)
- ⑬ GEOTEXTILE ALONG ALL SIDES OF DRAIN ROCK RESERVOIR
- ⑭ DRAIN ROCK RESERVOIR (0.3m MIN)

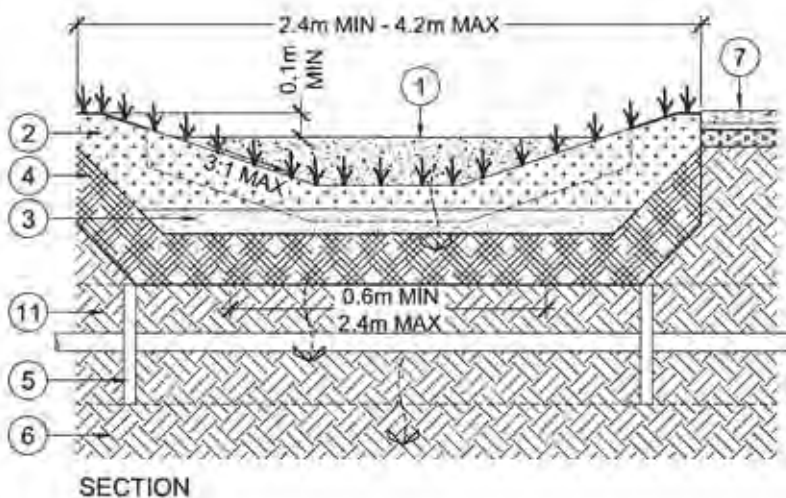
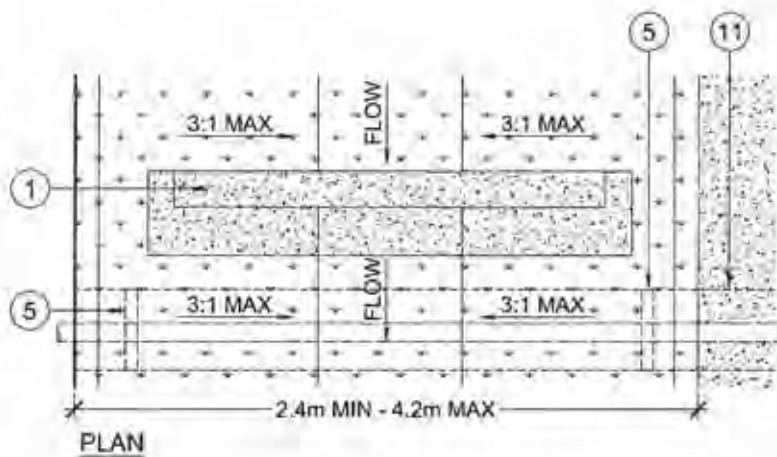
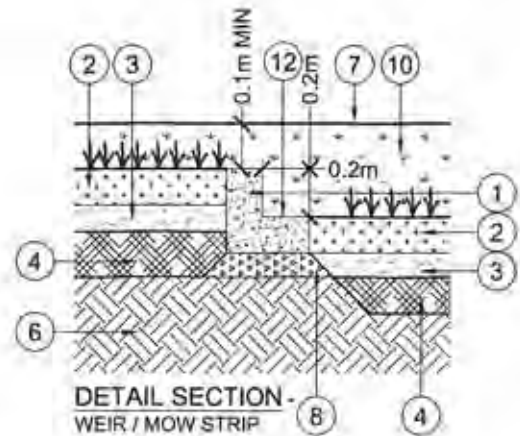
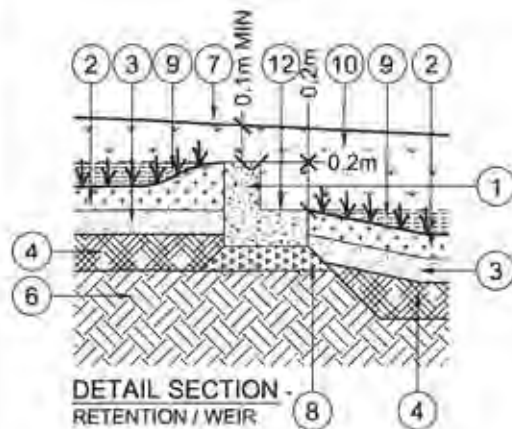
NOTE:
PROVIDE EROSION CONTROL ALONG
SIDES OF WEIR AND AT DRAINAGE INLETS.



TITLE
FULL INFILTRATION
SWALE WITH RESERVOIR

DISTRICT OF SQUAMISH
STANDARD STORM DETAIL

APPR. DATE: 2015
SCALE: N.T.S. DWG. NO: SQ - S03



- ① LEVEL WEIR KEYED INTO SWALE SIDE SLOPE
- ② 350mm GROWING MEDIUM
- ③ 100mm SAND
- ④ EXISTING SCARIFIED SUBSOIL
- ⑤ TRENCH DAMS AT ALL UTILITY CROSSINGS
- ⑥ UNDISTURBED SUBSTRATE
- ⑦ ADJACENT GRADE
- ⑧ GRANULAR BASE
- ⑨ WATER BODY; MAX. PONDED LEVEL 150mm
- ⑩ 3:1 MAX SLOPE
- ⑪ UTILITY TRENCH
- ⑫ MOW STRIP (OPTIONAL)

NOTE:
PROVIDE EROSION CONTROL ALONG SIDES OF WEIR AND AT DRAINAGE INLETS.



TITLE

FULL INFILTRATION
SWALE

DISTRICT OF SQUAMISH

STANDARD STORM DETAIL

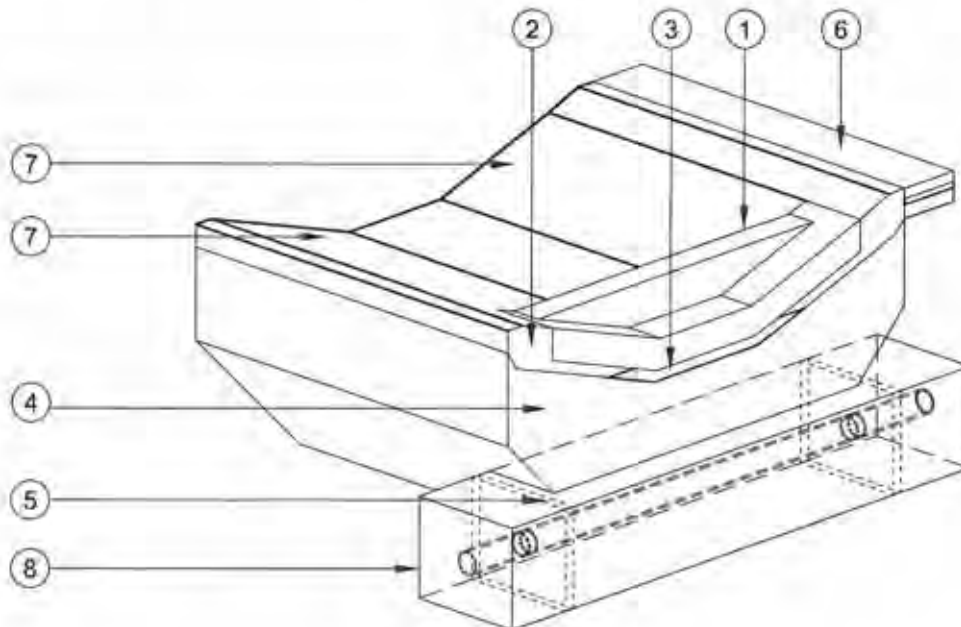
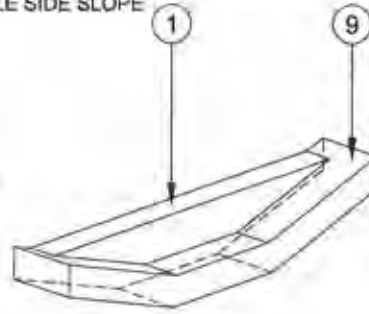
APPRO.

DATE: 2015

SCALE: N.T.S.

DWG. NO: SQ - S04

- ① LEVEL CONCRETE WEIR KEYED INTO SWALE SIDE SLOPE
- ② 350mm GROWING MEDIUM
- ③ 100mm SAND
- ④ EXISTING SCARIFIED SUBSOIL
- ⑤ TRENCH DAMS AT ALL UTILITY CROSSING
- ⑥ ADJACENT GRADE
- ⑦ 3:1 MAX SLOPE
- ⑧ UTILITY TRENCH
- ⑨ MOW STRIP (OPTIONAL)



TITLE:

FULL INFILTRATION
SWALE WEIR

DISTRICT OF SQUAMISH

STANDARD STORM DETAIL

APPR.

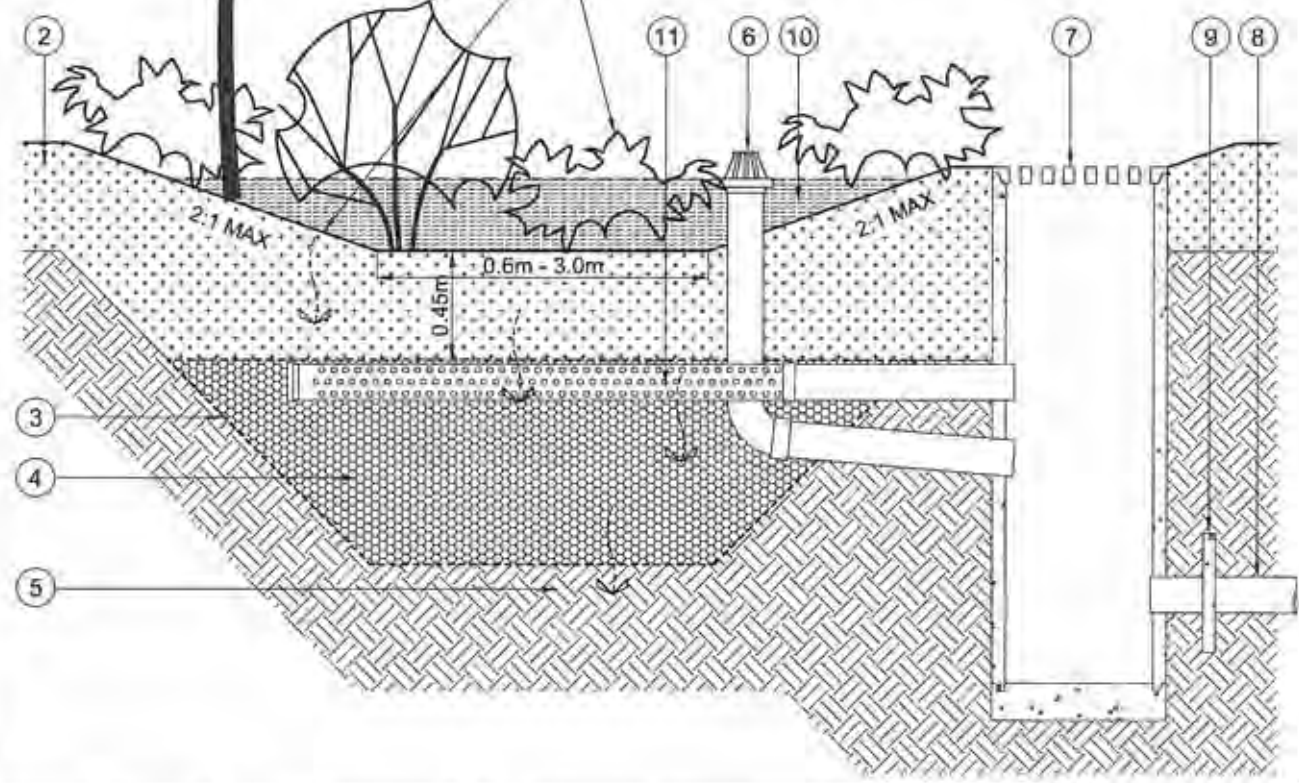
DATE: 2015

SCALE: N.T.S.

DWG. NO: SQ - S05

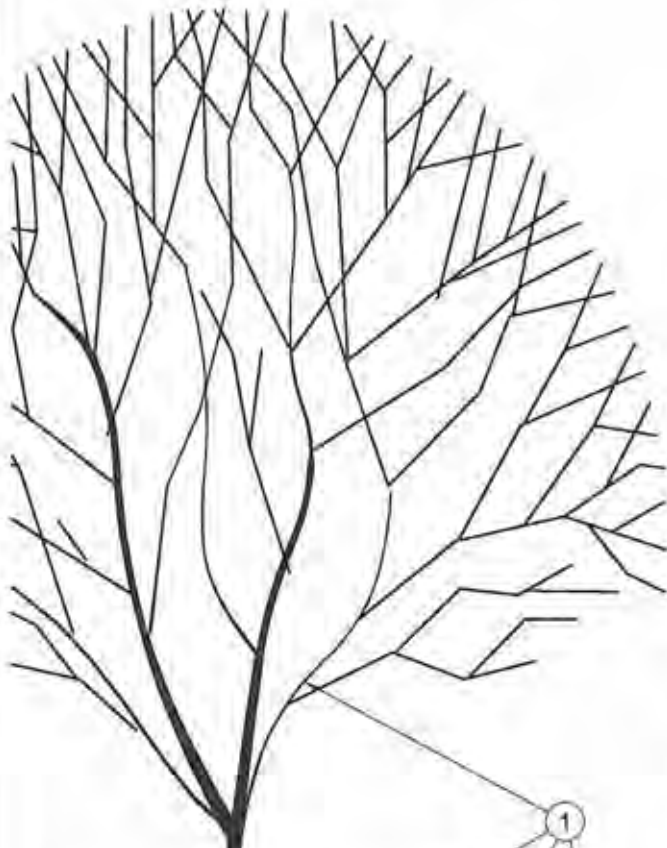


- ① TREE, SHRUB AND GROUND COVER PLANTINGS;
50mm - 75mm ORGANIC MULCH
- ② TREATMENT SOIL MIN 0.45m DEPTH
- ③ GEOTEXTILE ALONG ALL SIDES OF RESERVOIR
- ④ DRAIN ROCK RESERVOIR
- ⑤ FLAT, SCARIFIED SUBSOIL
- ⑥ OVERFLOW (STANDPIPE OR SWALE)
- ⑦ SECONDARY OVERFLOW INLET AT CATCH BASIN
- ⑧ OUTFLOW PIPE TO STORM DRAIN OR SWALE
SYSTEM
- ⑨ TRENCH DAMS AT UTILITY CROSSINGS
- ⑩ PONDING AREA - MAX 150mm DEPTH
- ⑪ PERFORATED DRAIN PIPE (0.15m DIM. MIN.)
WITH FILTER CLOTH SOCK

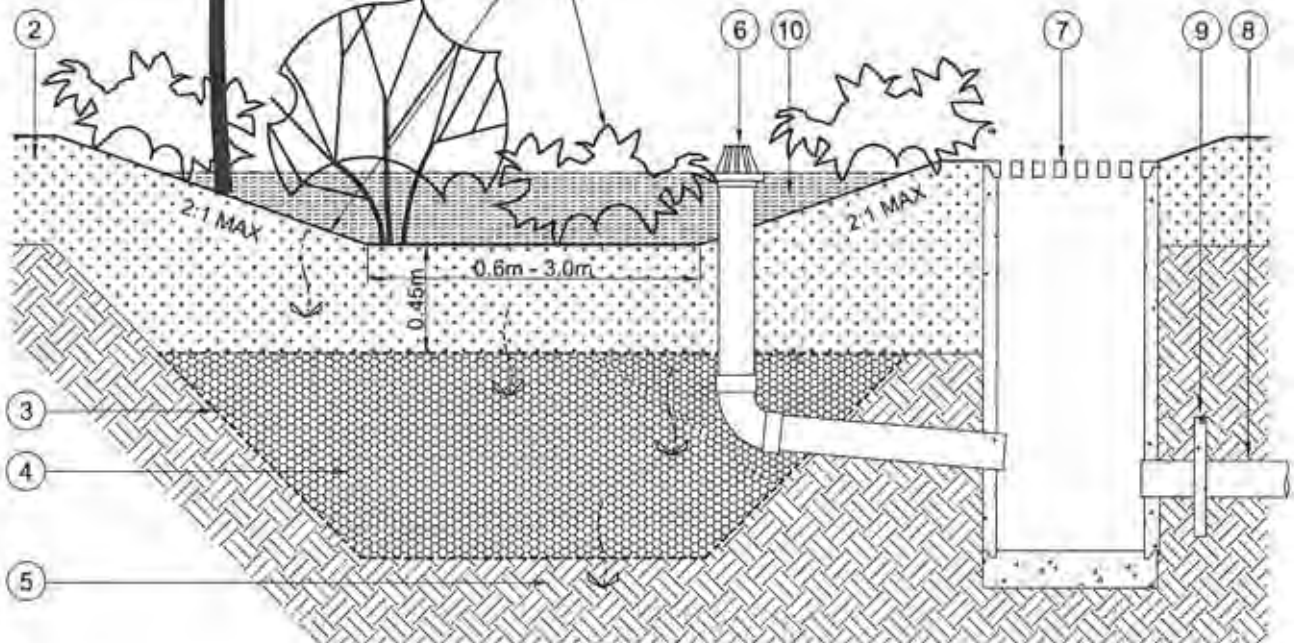


TITLE:
**PARTIAL INFILTRATION
RAIN GARDEN**

DISTRICT OF SQUAMISH	
STANDARD STORM DETAIL	
APPR	DATE: 2015
SCALE: N.T.S.	DWG. NO: SQ - S08



- ① TREE, SHRUB AND GROUND COVER PLANTINGS;
50mm - 75mm ORGANIC MULCH
- ② TREATMENT SOIL MIN 0.45m DEPTH
- ③ GEOTEXTILE ALONG ALL SIDES OF RESERVOIR
- ④ DRAIN ROCK RESERVOIR
- ⑤ FLAT, SCARIFIED SUBSOIL
- ⑥ OVERFLOW (STANDPIPE OR SWALE)
- ⑦ SECONDARY OVERFLOW INLET AT CATCH BASIN
- ⑧ OUTFLOW PIPE TO STORM DRAIN OR SWALE
SYSTEM
- ⑨ TRENCH DAMS AT UTILITY CROSSINGS
- ⑩ PONDING AREA. MAX. 150mm DEPTH




SQUAMISH

TITLE

FULL INFILTRATION
RAIN GARDEN
WITH RESERVOIR

DISTRICT OF SQUAMISH

STANDARD STORM DETAIL

APPR.

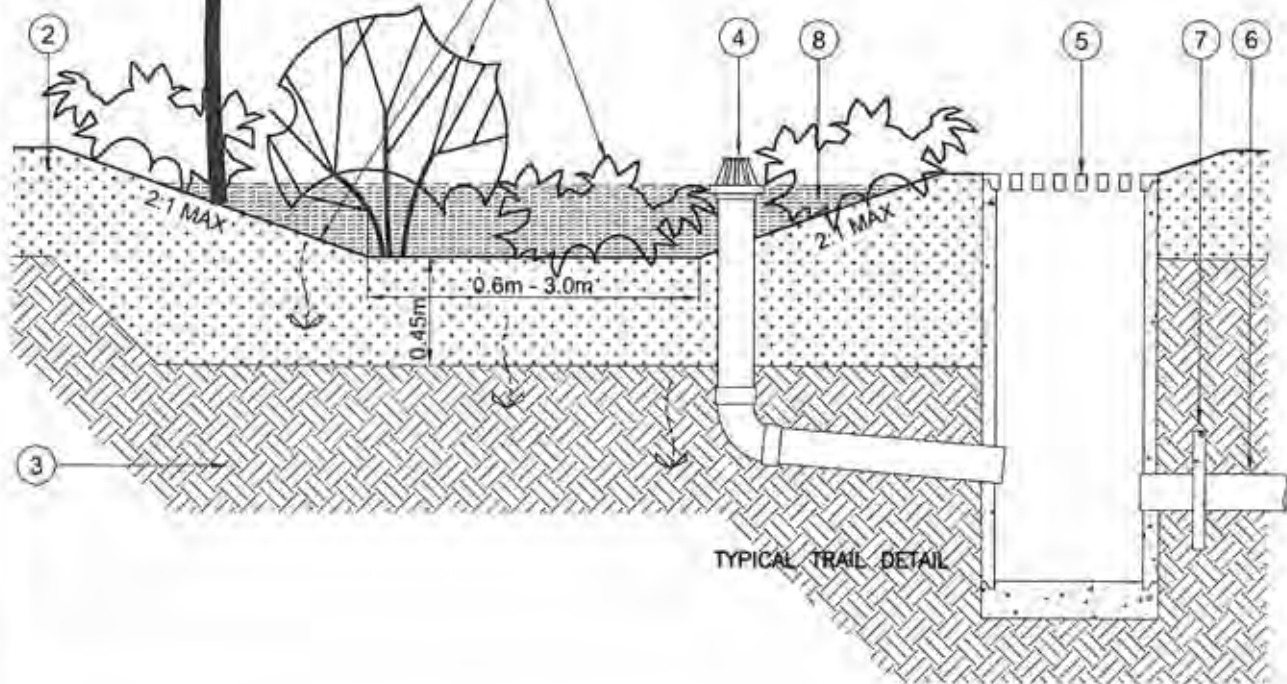
DATE: 2015

SCALE: N.T.S.

DWG. NO: SQ - S07



- ① TREE, SHRUB AND GROWDCOVER PLANTINGS;
50mm - 75mm ORGANIC MULCH
- ② TREATMENT SOIL MIN 0.45m DEPTH
- ③ SCARIFIED SUBSOIL
- ④ OVERFLOW (STANDPIPE OR SWALE)
- ⑤ SECONDARY OVERFLOW INLET AT EACH CATCH BASIN
- ⑥ OUTFLOW PIPE TO STORM DRAIN OR SWALE SYSTEM
- ⑦ TRENCH DAMS AT UTILITY CROSSINGS
- ⑧ PONDING AREA - MAX 150mm DEPTH



TITLE:

FULL INFILTRATION
RAIN GARDEN

DISTRICT OF SQUAMISH

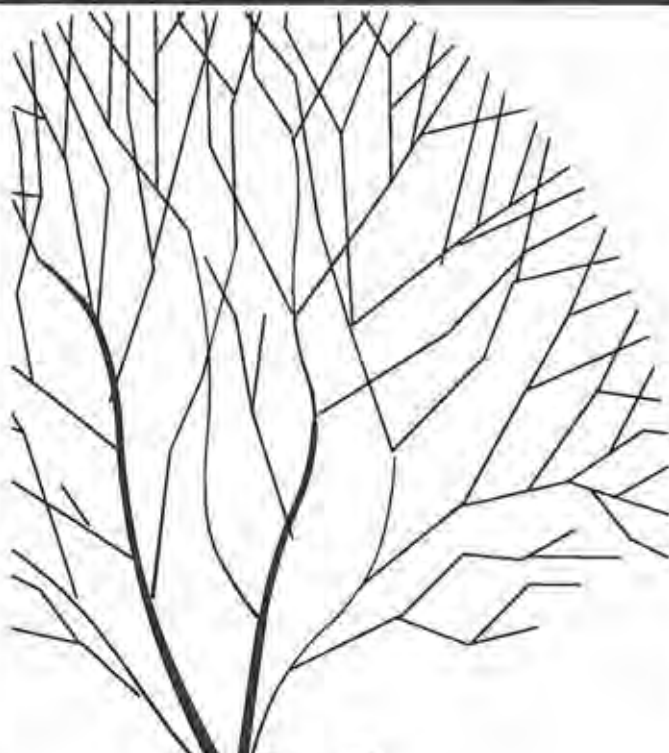
STANDARD STORM DETAIL

APPR.

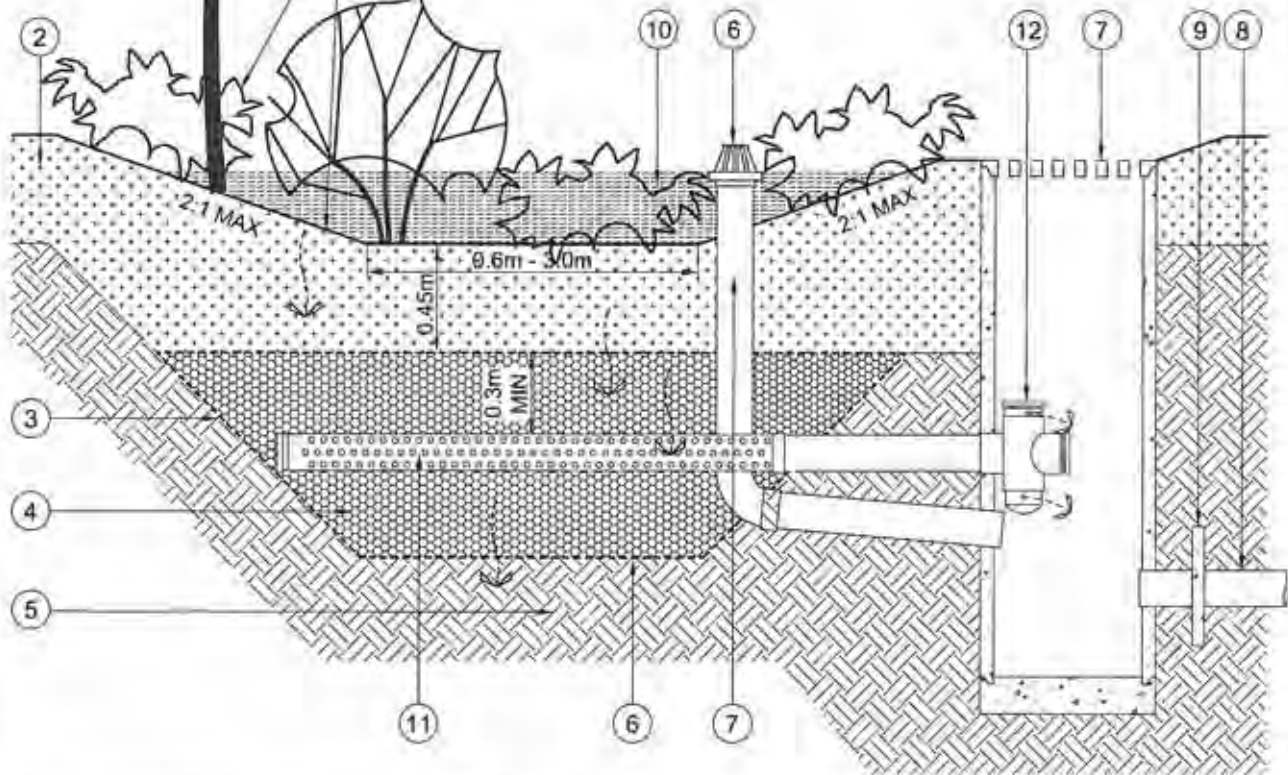
DATE: 2015

SCALE: N.T.S.

DWG. NO: SQ - S08



- ① TREE, SHRUB AND GROUND COVER PLANTINGS; 50mm - 75mm ORGANIC MULCH
- ② TREATMENT SOIL MIN 0.45m DEPTH
- ③ GEOTEXTILE ALONG ALL SIDES OF RESERVOIR
- ④ DRAIN ROCK RESERVOIR
- ⑤ FLAT, SCARIFIED SUBSOIL
- ⑥ OVERFLOW (STANDPIPE OR SWALE)
- ⑦ SECONDARY OVERFLOW INLET AT CATCH BASIN
- ⑧ OUTFLOW PIPE TO STORM DRAIN OR SWALE SYSTEM
- ⑨ TRENCH DAMS AT UTILITY CROSSINGS
- ⑩ PONDING AREA - MAX 150mm DEPTH
- ⑪ PERFORATED DRAIN PIPE (0.15m DIM. MIN.) WITH FILTER CLOTH SOCK
- ⑫ FLOW RESTRICTOR ASSEMBLY




SQUAMISH

TITLE:

PARTIAL INFILTRATION
RAIN GARDEN WITH
FLOW RESTRICTOR

DISTRICT OF SQUAMISH

STANDARD STORM DETAIL

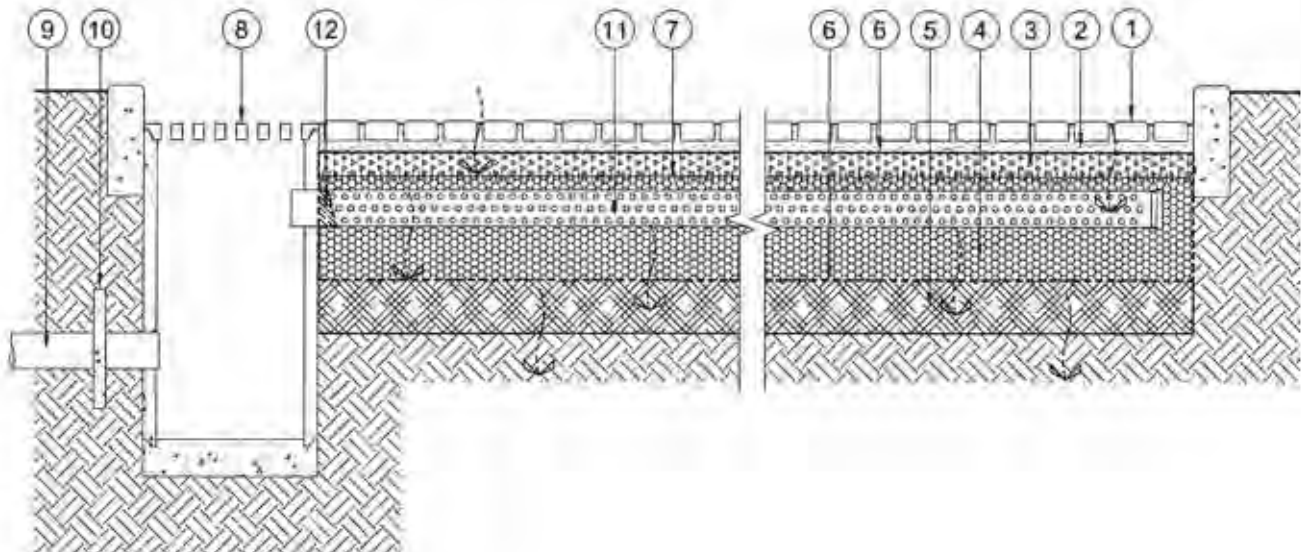
APPR:

DATE: 2015

SCALE: N.T.S.

DWG. NO: SQ - S09

- ① PERMEABLE PAVERS (MIN. 80mm THICKNESS); MIN. 1% SLOPE
- ② AGGREGATE BEDDING COURSE - NOT SAND (50mm DEPTH)
- ③ OPEN GRADED BASE (DEPTH VARIES BY DESIGN APPLICATION)
- ④ OPEN GRADED SUB-BASE (DEPTH VARIES BY DESIGN APPLICATION)
- ⑤ SUBSOIL - FLAT AND SCARIFIED IN INFILTRATION DESIGNS
- ⑥ GEOTEXTILE ON ALL SIDES OF RESERVOIR
- ⑦ OPTIONAL REINFORCING GRID FOR HEAVY LOADS
- ⑧ SECONDARY OVERFLOW INLET AT CATCH BASIN OR SPILLWAY TO MAJOR STORM FLOW PATH
- ⑨ OUTLET PIPE TO STORM DRAIN OR SWALE SYSTEM. LOCATE CROWN OF PIPE BELOW OPEN GRADED BASE (NO. 3) TO PREVENT HEAVING DURING FREEZE/THAW CYCLE
- ⑩ TRENCH DAMS AT ALL UTILITY CROSSINGS
- ⑪ PERFORATED DRAIN PIPE MIN. 150mm DIA.; MIN. 0.1% SLOPE
- ⑫ GEOTEXTILE ADHERED TO DRAIN AT OPENING



TITLE

PERVIOUS PAVERS
PARTIAL INFILTRATION

DISTRICT OF SQUAMISH

STANDARD STORM DETAIL

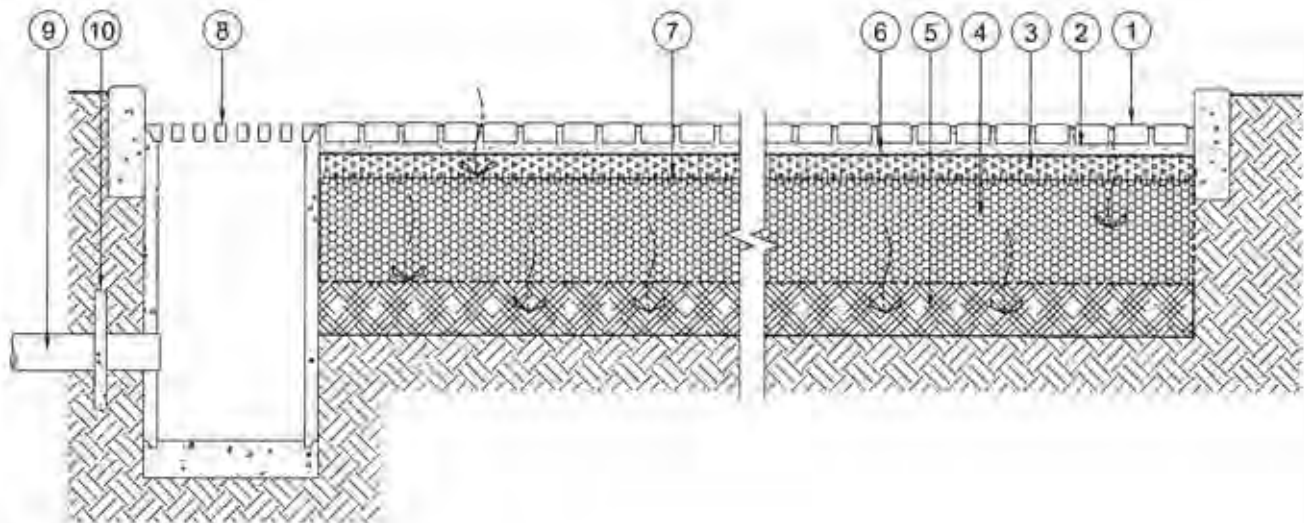
APPR.

DATE: 2015

SCALE: N.T.S.

DWG. NO: SQ - S10

- ① PERMEABLE PAVERS (MIN. 80mm THICKNESS); MIN. 1% SLOPE
- ② AGGREGATE BEDDING COURSE - NOT SAND (50mm DEPTH)
- ③ OPEN GRADED BASE (DEPTH VARIES BY DESIGN APPLICATION)
- ④ OPEN GRADED SUB BASE (DEPTH VARIES BY DESIGN APPLICATION)
- ⑤ SUBSOIL - FLAT AND SCARIFIED IN INFILTRATION DESIGNS
- ⑥ GEOTEXTILE ON ALL SIDES OF RESERVOIR
- ⑦ OPTIONAL REINFORCING GRID FOR HEAVY LOADS.
- ⑧ SECONDARY OVERFLOW INLET AT CATCH BASIN OR SPILLWAY TO MAJOR STORM FLOW PATH
- ⑨ OUTLET PIPE TO STORM DRAIN OR SWALE SYSTEM. LOCATE CROWN OF PIPE BELOW OPEN GRADED BASE (NO. 3) TO PREVENT HEAVING DURING FREEZE/THAW CYCLE
- ⑩ TRENCH DAMS AT ALL UTILITY CROSSINGS



TITLE:

PERVIOUS PAVERS FULL
INFILTRATION

DISTRICT OF SQUAMISH

STANDARD STORM DETAIL

APPR:

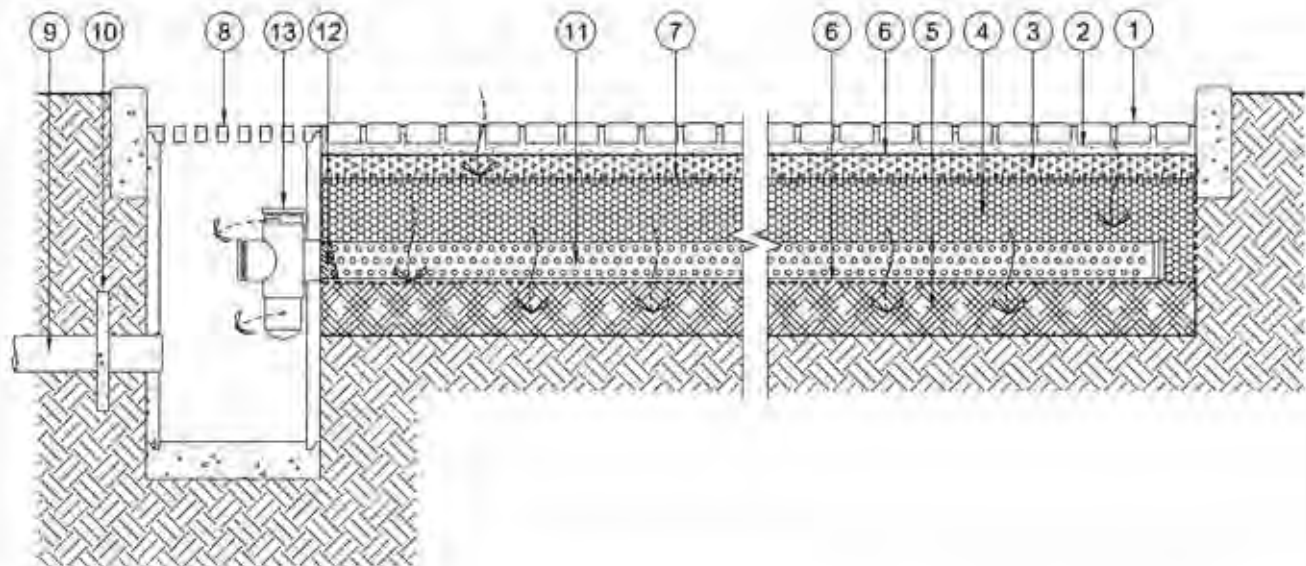
DATE: 2015

SCALE: N.T.S.

DWG. NO.:

SQ - S11

- ① PERMEABLE PAVERS (MIN. 80mm THICKNESS); MIN. 1% SLOPE
- ② AGGREGATE BEDDING COURSE - NOT SAND (50mm DEPTH)
- ③ OPEN GRADED BASE (DEPTH VARIES BY DESIGN APPLICATION)
- ④ OPEN GRADED SUB-BASE (DEPTH VARIES BY DESIGN APPLICATION)
- ⑤ SUBSOIL - FLAT AND SCARIFIED IN INFILTRATION DESIGNS
- ⑥ GEOTEXTILE ON ALL SIDES OF RESERVOIR
- ⑦ OPTIONAL REINFORCING GRID FOR HEAVY LOADS
- ⑧ SECONDARY OVERFLOW INLET AT CATCH BASIN OR SPILLWAY TO MAJOR STORM FLOW PATH
- ⑨ OUTLET PIPE TO STORM DRAIN OR SWALE SYSTEM. LOCATE CROWN OF PIPE BELOW OPEN GRADED BASE (NO. 3) TO PREVENT HEAVING DURING FREEZE/THAW CYCLE
- ⑩ TRENCH DAMS AT ALL UTILITY CROSSINGS
- ⑪ PERFORATED DRAIN PIPE MIN. 150mm DIA.; MIN. 0.1% SLOPE
- ⑫ GEOTEXTILE ADHERED TO DRAIN AT OPENING
- ⑬ FLOW RESTRICTOR ASSEMBLY



TITLE

PERVIOUS PAVERS
PARTIAL INFILTRATION
WITH FLOW RESTRICTOR

DISTRICT OF SQUAMISH

STANDARD STORM DETAIL

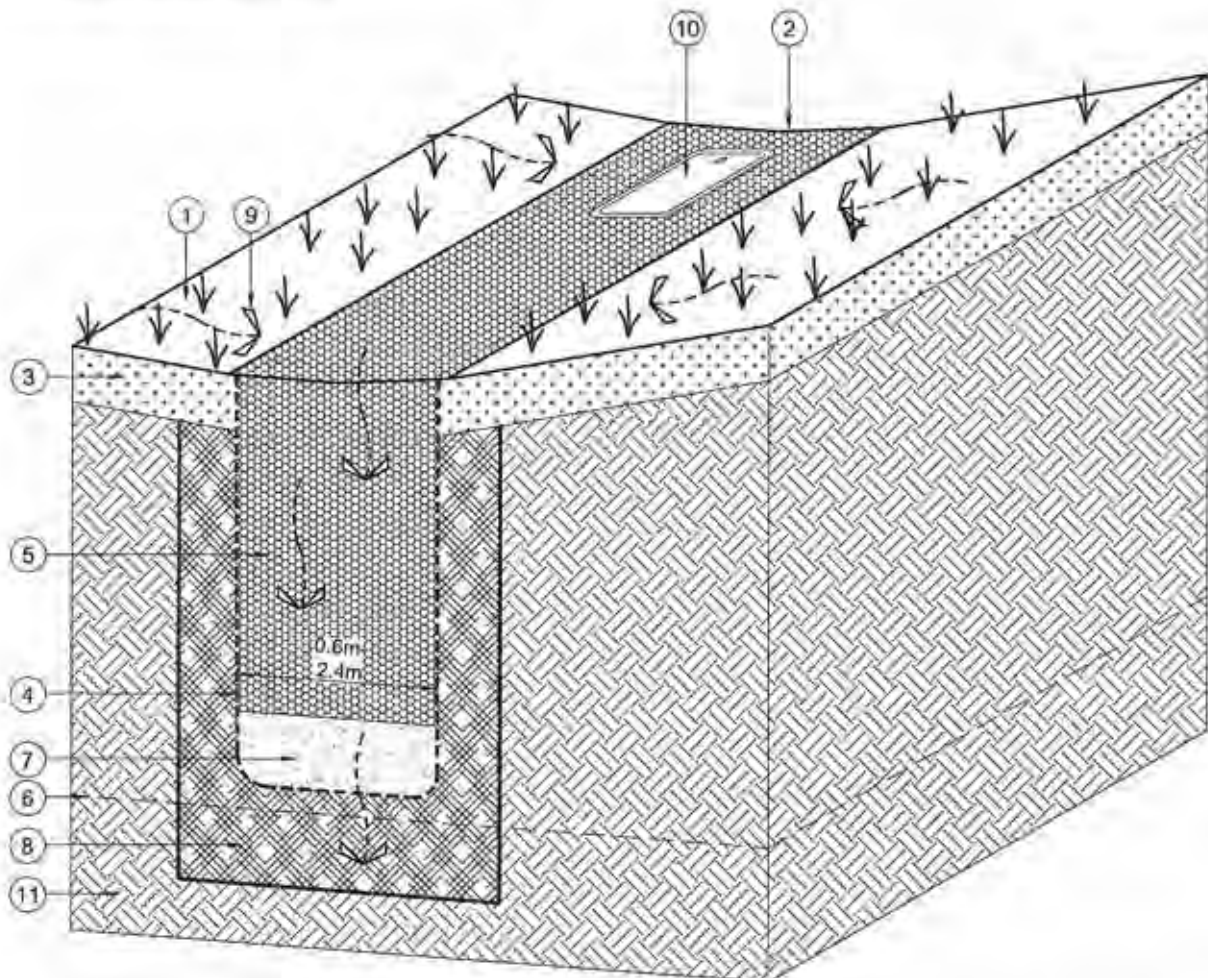
APPR

DATE 2015

SCALE: N.T.S.

DWG. NO: SQ - S12

- ① RUN OFF FILTER THROUGH GRASS BUFFER
- ② FINISH GRADE
- ③ GROWING MEDIUM BACKFILL
- ④ LIGHT NON-WOVEN GEOTEXTILE
- ⑤ 0.05m DRAIN ROCK OR ROCK OF EQUAL POROSITY
- ⑥ MAXIMUM GROUNDWATER ELEVATION
- ⑦ 0.15m-0.3m DEEP SAND FILTER OR FABRIC EQUIVALENT
- ⑧ EXISTING SCARIFIED SUBSOIL
- ⑨ OVERLAND FLOW
- ⑩ OBSERVATION WELL, C/W VERTICAL PERFORATED STANDPIPE AND LOCKING LID
- ⑪ UNDISTURBED SUBSTRATE




SQUAMISH

TITLE:

INFILTRATION TRENCH
 WITH DISPERSED
 INPUT FACILITIES

DISTRICT OF SQUAMISH

STANDARD STORM DETAIL

APPR:

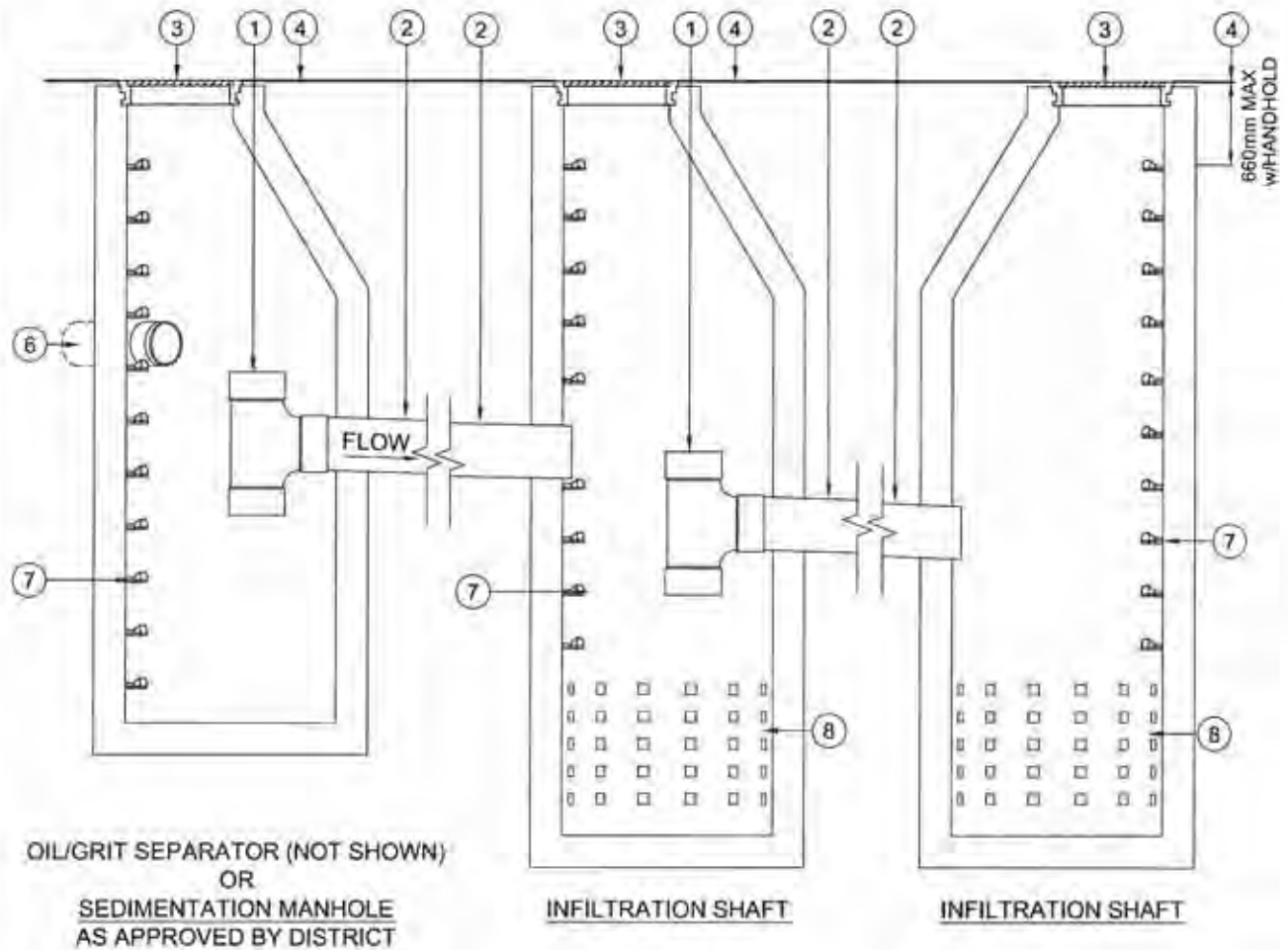
DATE 2015

SCALE: N.T.S.

DWG. NO: SQ - S13

- ① 100mm DIA PVC SOLID PIPE C/W OUTLET TEE
- ② INTERCONNECTING PVC SOLID PIPE
- ③ STANDARD MANHOLE FRAME AND COVER
- ④ FINISH GRADE

- ⑤ SEAL JOINTS WITH CEMENT GROUT OR APPROVED MASTIC
- ⑥ STREET INLET CONNECTION
- ⑦ LADDER RUNG
- ⑧ 1200mm PERFORATED BARREL (LANGLEY CONCRETE OR EQUAL)



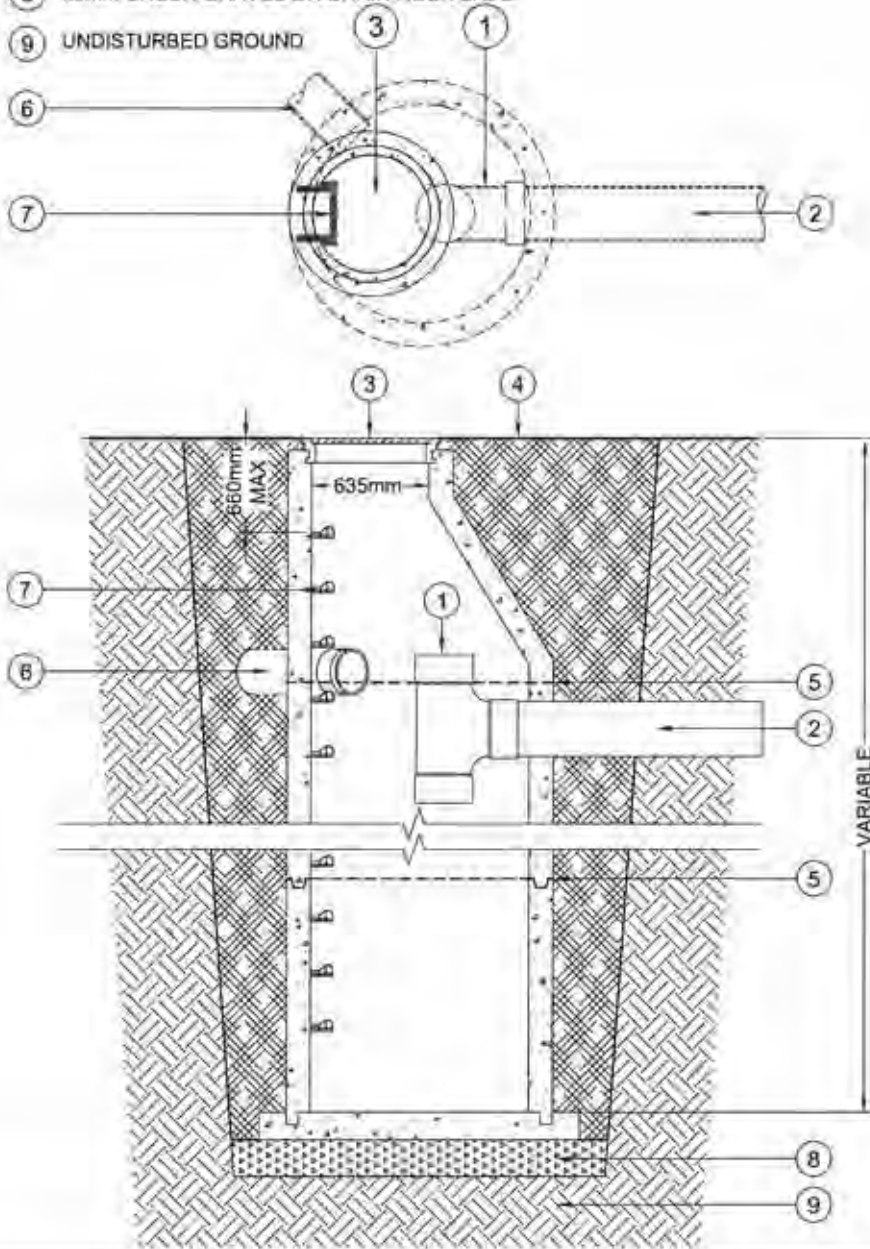

SQUAMISH

TITLE
DIAGRAM OF
SEDIMENTATION MANHOLE
AND INFILTRATION SHAFT

DISTRICT OF SQUAMISH
STANDARD STORM DETAIL

APPR:	DATE: 2015
SCALE: N.T.S.	DWG. NO: SQ - S14

- ① 100mm DIA PVC SOLID PIPE C/W OUTLET TEE
- ② INTERCONNECTING PVC SOLID PIPE
- ③ STANDARD MANHOLE FRAME AND COVER
- ④ FINISH GRADE
- ⑤ SEAL JOINTS WITH CEMENT GROUT OR APPROVED MASTIC
- ⑥ STREET INLET CONNECTION
- ⑦ LADDER RUNG
- ⑧ 25mm CRUSH GRAVEL OR DRAIN ROCK BASE
- ⑨ UNDISTURBED GROUND



TITLE
**SEDIMENTATION
 MANHOLE**
 (ALLOWED ONLY WITH
 DISTRICT APPROVAL)

DISTRICT OF SQUAMISH

STANDARD STORM DETAIL

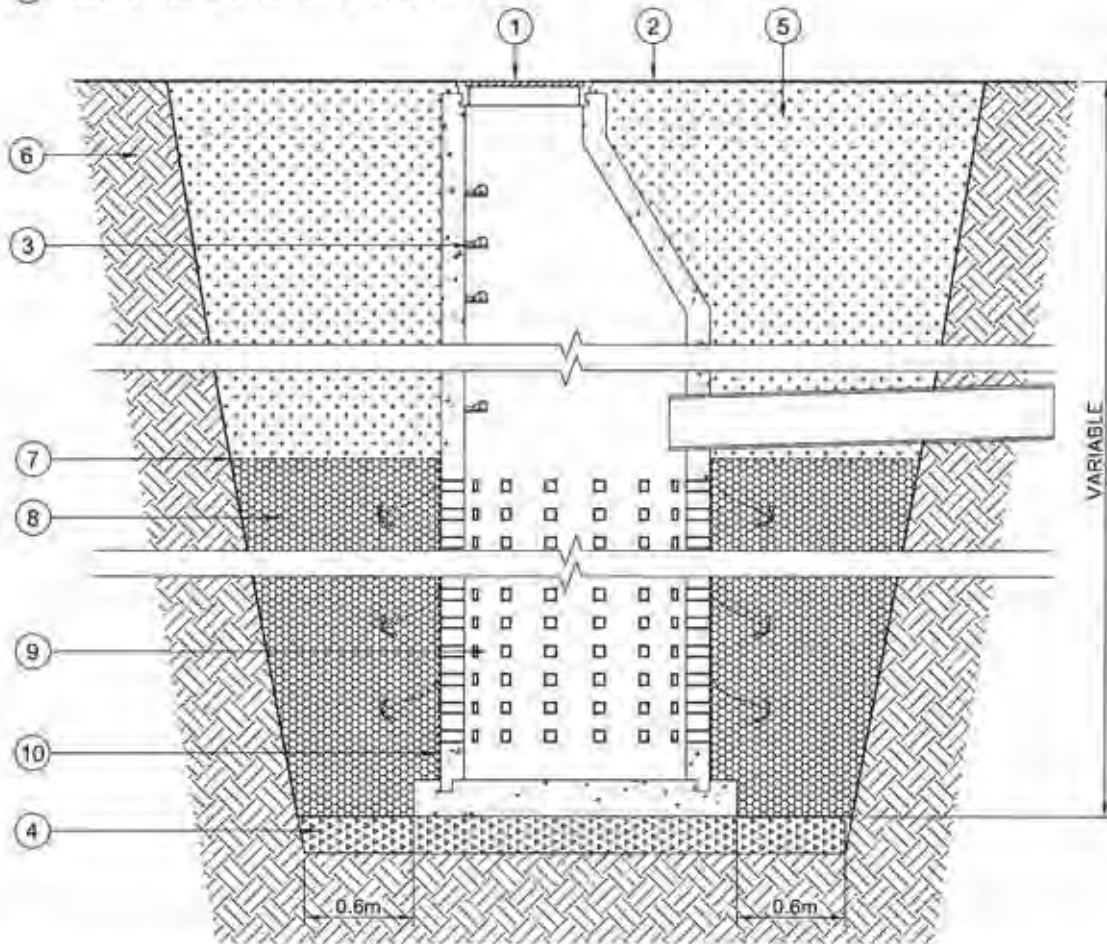
APPR: DATE: 2015

SCALE: N.T.S. DWG. NO: SQ - S15

NOTES:

ALL PRECAST SECTIONS SHALL CONFORM TO THE REQUIREMENTS OF ASTM C 478.
 PROVIDE A MIN. OF 150mm DEEP OF 25mm OR 19mm CLEAN CRUSHED ROCK UNDER ALL PIPES.
 INVERT SHALL BE LEVEL AND SMOOTH.
 SUMP BARREL SHALL NOT BE PERFORATED WITHIN 1200mm OF THE CONE.

- ① STANDARD MANHOLE FRAME AND COVER
- ② FINISH GRADE
- ③ LADDER RUNG
- ④ 25mm DEEP CRUSH GRAVEL OR DRAIN ROCK BASE
- ⑤ NATIVE SOIL BACK FILL
- ⑥ UNDISTURBED GROUND
- ⑦ GEOTEXTILE BETWEEN DRAIN ROCK AND NATIVE SOIL
- ⑧ 600mm MIN. OF 50mm DRAIN ROCK
- ⑨ 1200mm PERFORATED BARREL (LANGLEY CONCRETE OR EQUAL)
- ⑩ GEOTEXTILE AROUND PERFORATED BARREL



TITLE:

INFILTRATION SHAFT

DISTRICT OF SQUAMISH

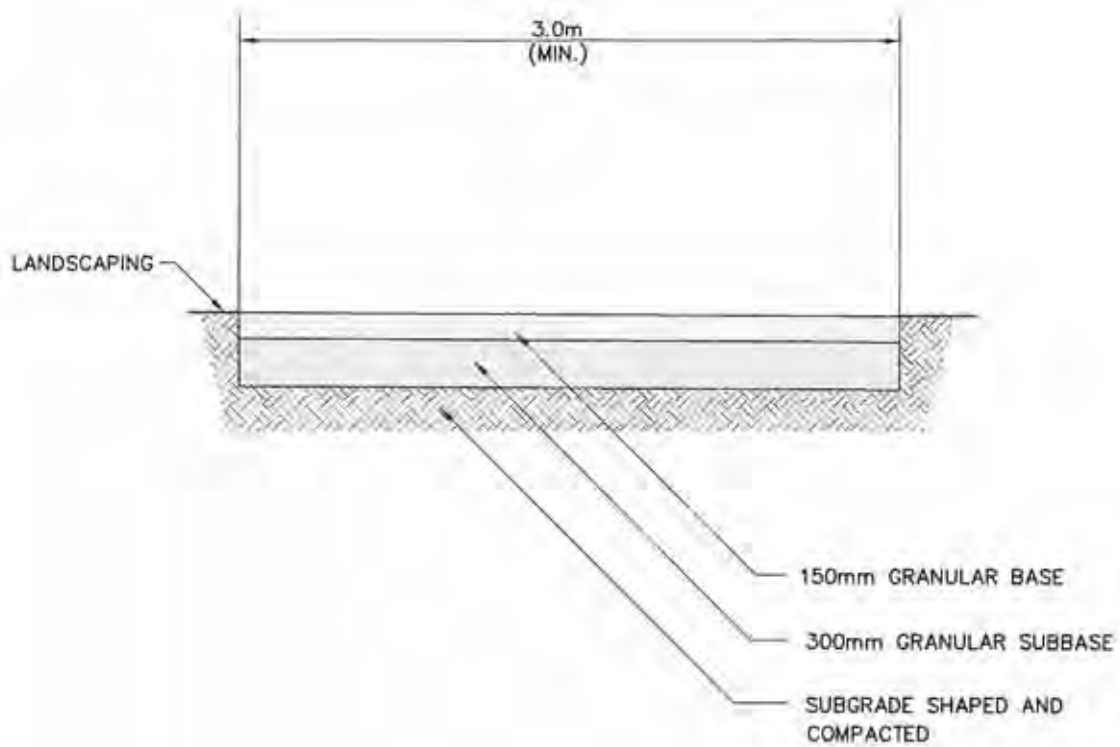
STANDARD STORM DETAIL

APPR.

DATE 2015

SCALE: N.T.S.

DWG. NO: SQ - S16



- ALL DIMENSIONS IN METRES UNLESS OTHERWISE SHOWN.



TITLE:
STORM WATER MANAGEMENT
WET DETENTION POND
ACCESS ROAD

DISTRICT OF SQUAMISH

STANDARD STORM DETAIL

APPR.

DATE: 2015

SCALE: N.T.S.

DWG. NO: SQ - S17



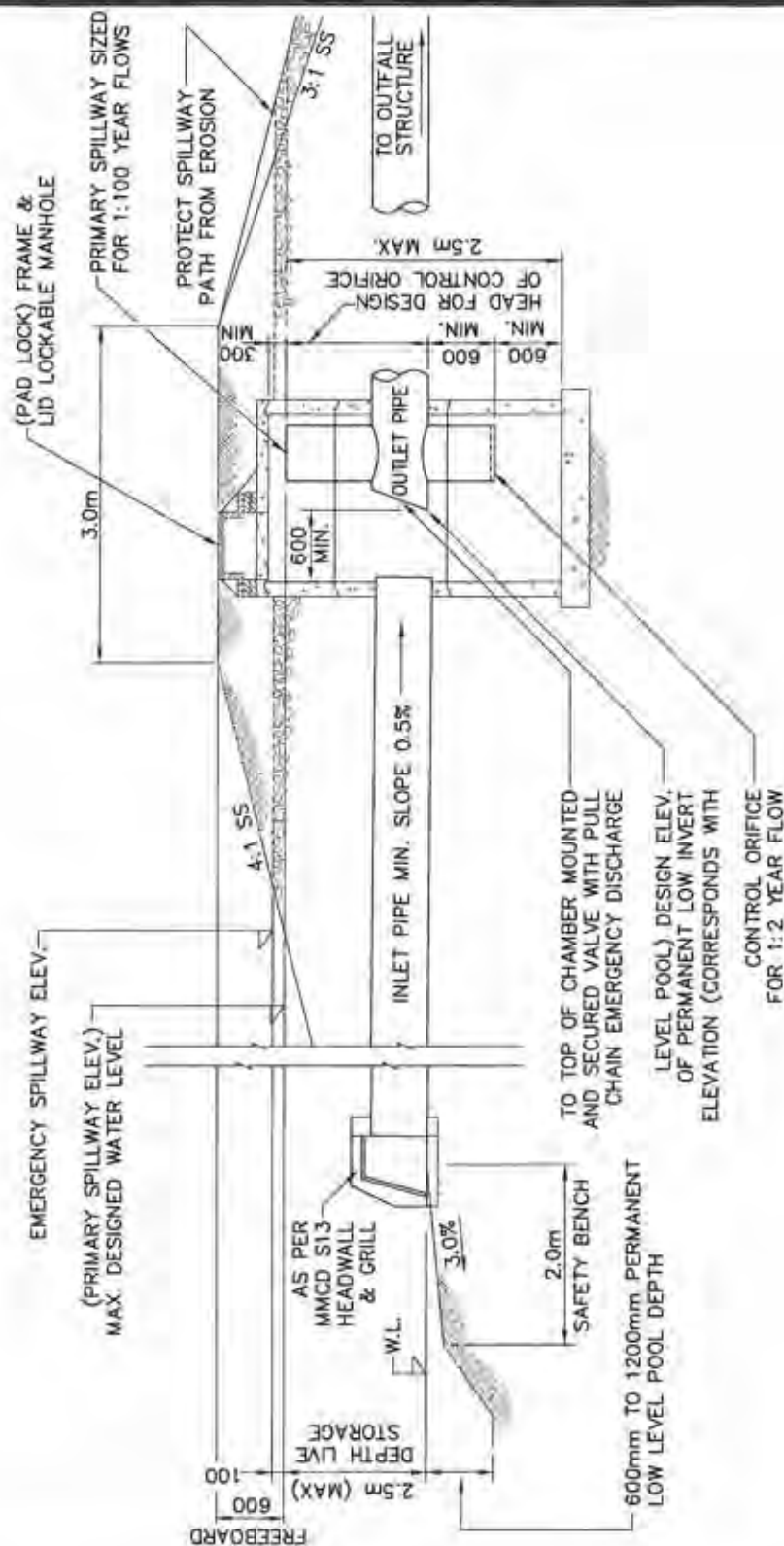
TITLE:
STORM WATER MANAGEMENT
WET DETENTION POND
SECTION

DISTRICT OF SQUAMISH

STANDARD STORM DETAIL

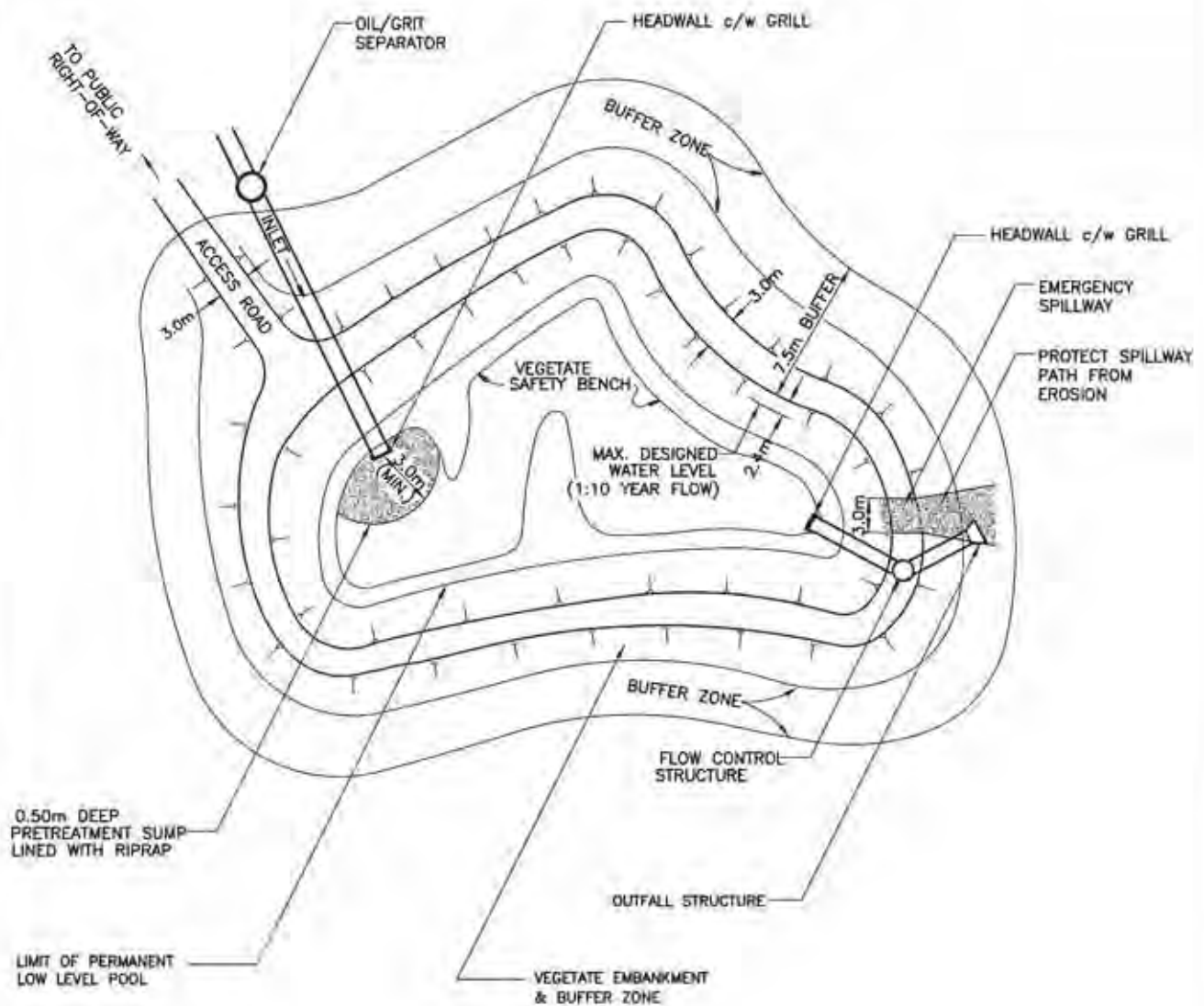
APPR: DATE: 2015

SCALE: N.T.S. DWG. NO: SQ - S18



PIPE SIZES AS REQUIRED FOR FLOWS (MIN. 250mm DIA.)

- ALL DIMENSIONS IN MILLIMETRES UNLESS OTHERWISE SHOWN.



NOTES:

- MAXIMIZE THE DISTANCE BETWEEN THE INLET AND THE OUTFALL.
- OIL/WATER SEPARATOR STRUCTURE OR EQUIVALENT SOURCE CONTROL TREATMENT SET OF BMPs SUCH AS INFILTRATION SWALES, PERVIOUS PAVEMENTS, OR RAIN GARDENS IS TO BE INSTALLED UPSTREAM OF THE POND INLET.



TITLE:

STORM WATER MANAGEMENT
WET DETENTION POND
PLAN VIEW

DISTRICT OF SQUAMISH

STANDARD STORM DETAIL

APPR:

DATE: 2015

SCALE: N.T.S.

DWG. NO: SQ - S19



TITLE:

STORM WATER MANAGEMENT
WET DETENTION POND
VEGETATION ZONES

DISTRICT OF SQUAMISH

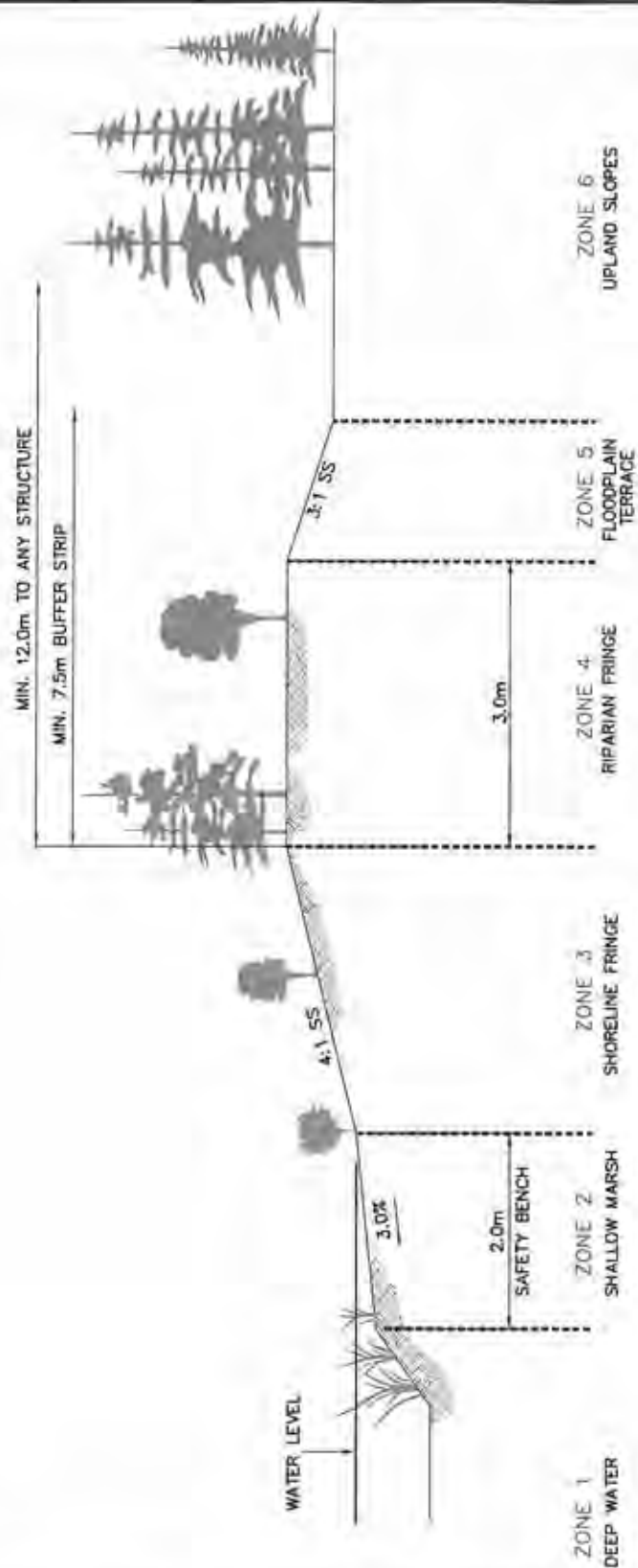
STANDARD STORM DETAIL

APPR:

DATE: 2015

SCALE: N.T.S.

DWG. NO: SQ - S20



LANDSCAPING CRITERIA:

- WHERE FEASIBLE, PLANTINGS SHOULD CONSIST OF NATIVE PLANTS.
- WHERE POSSIBLE, THE PERIMETER SHOULD BE MAINTAINED AS A FORESTED BUFFER.
- 0.15m - 0.30m OF TOPSOIL AND/OR WETLAND MULCH IS TO BE ADDED TO ALL DEPTH ZONES.
- ALL SURROUNDING POND SHOULD BE HYDRO SEEDED AFTER MULCH AND/OR TOPSOIL HAS BEEN PLACED.
- ALL LANDSCAPE/RE-VEGETATION WORK IN POND AND SURROUNDING AREAS MUST BE PERFORMED BY A COMPETENT LANDSCAPE CONTRACTOR, PREFERABLY EXPERIENCED IN AQUATIC/WETLAND RE-VEGETATION.



TITLE:

SQUAMISH I.D.F.
CURVE

DISTRICT OF SQUAMISH

STANDARD STORM DETAIL

APPR:

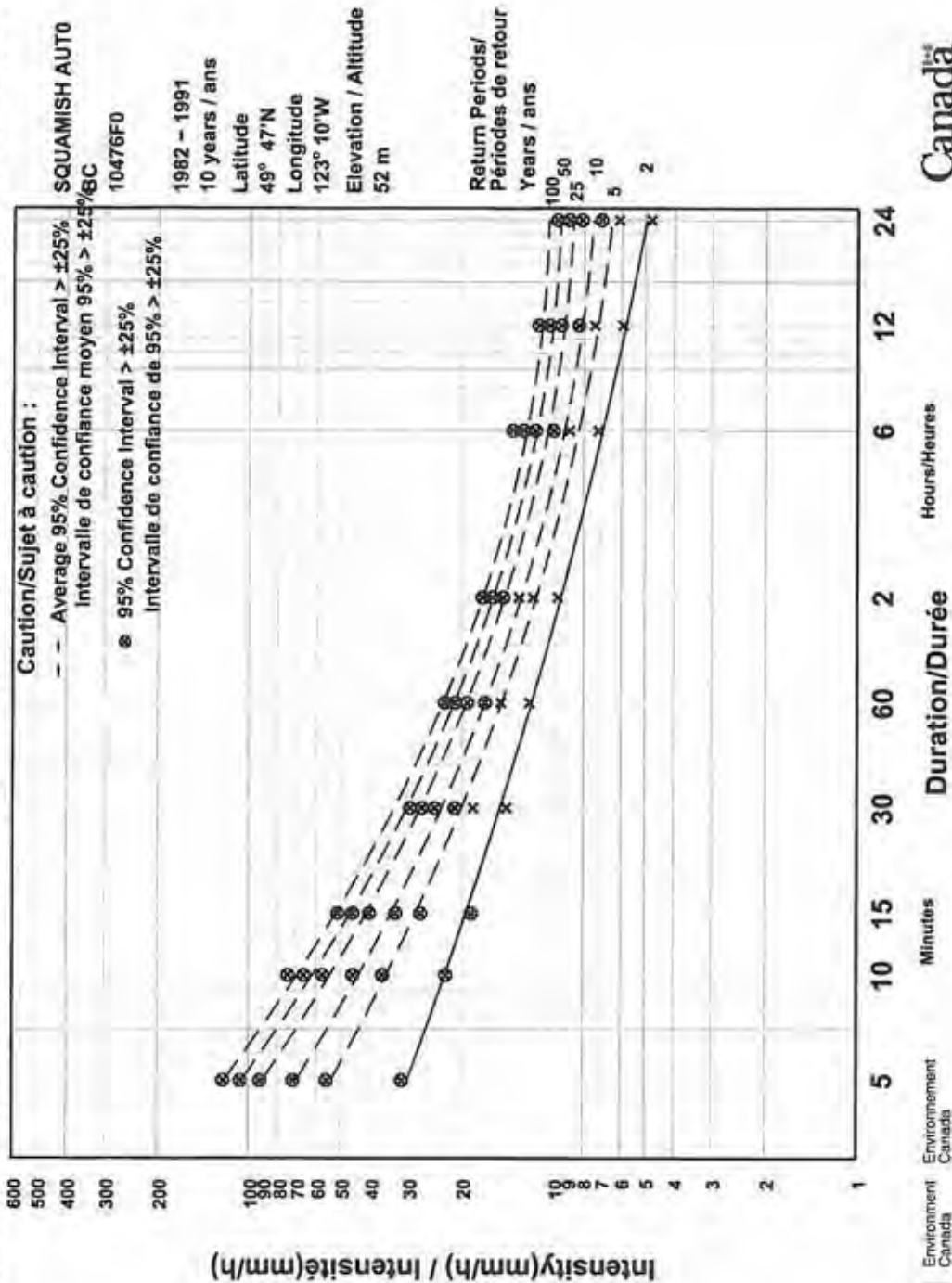
DATE: 2015

SCALE: N.T.S.

DWG. NO: SQ - S21

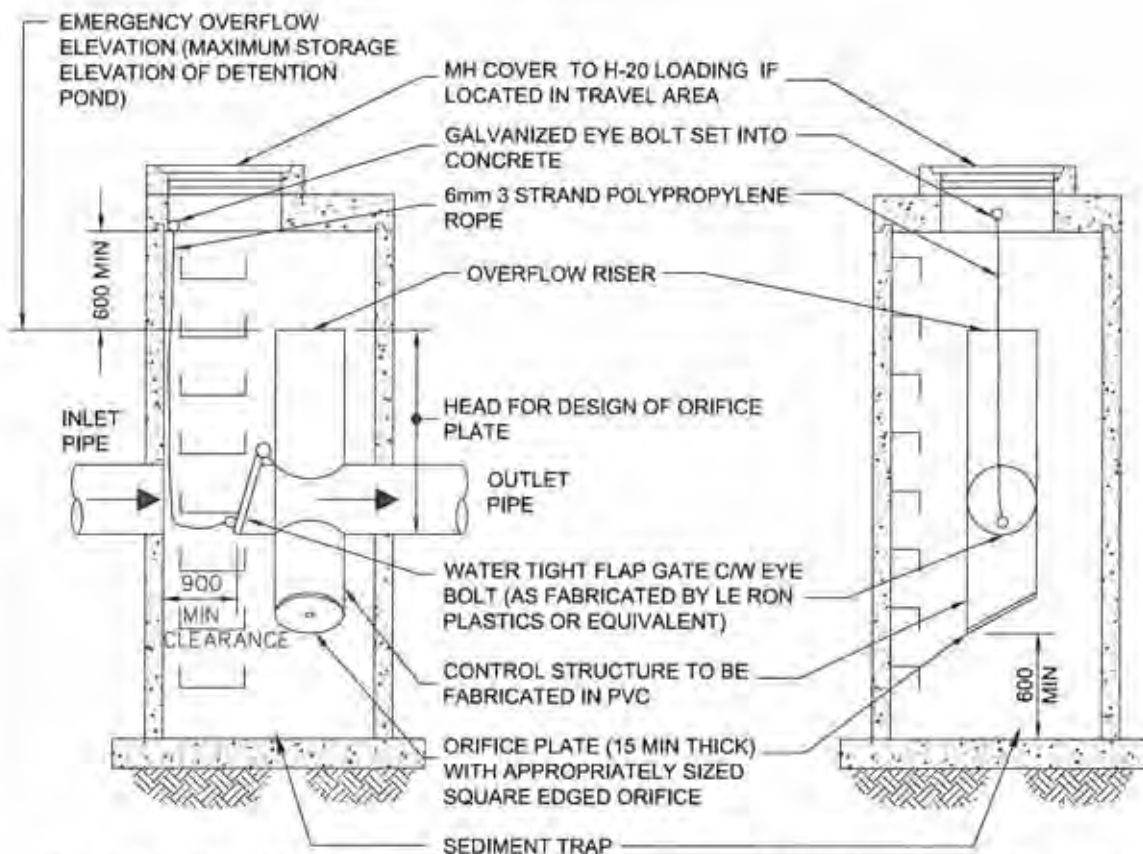
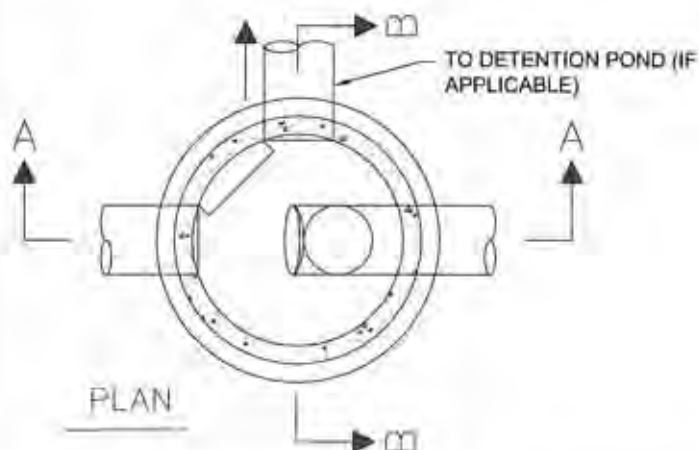
Short Duration Rainfall Intensity-Duration-Frequency Data Données sur l'intensité, la durée et la fréquence des chutes de pluie de courte durée

2014/12/21



Canada





STANDARD 1800Ø MANHOLE
SECTION A-A

STANDARD 1800Ø MANHOLE
SECTION B-B

NOTE: ALL DIMENSIONS SHOWN IN
MILLIMETRES UNLESS
OTHERWISE STATED



TITLE:

STORM FLOW
CONTROL MANHOLE

DISTRICT OF SQUAMISH

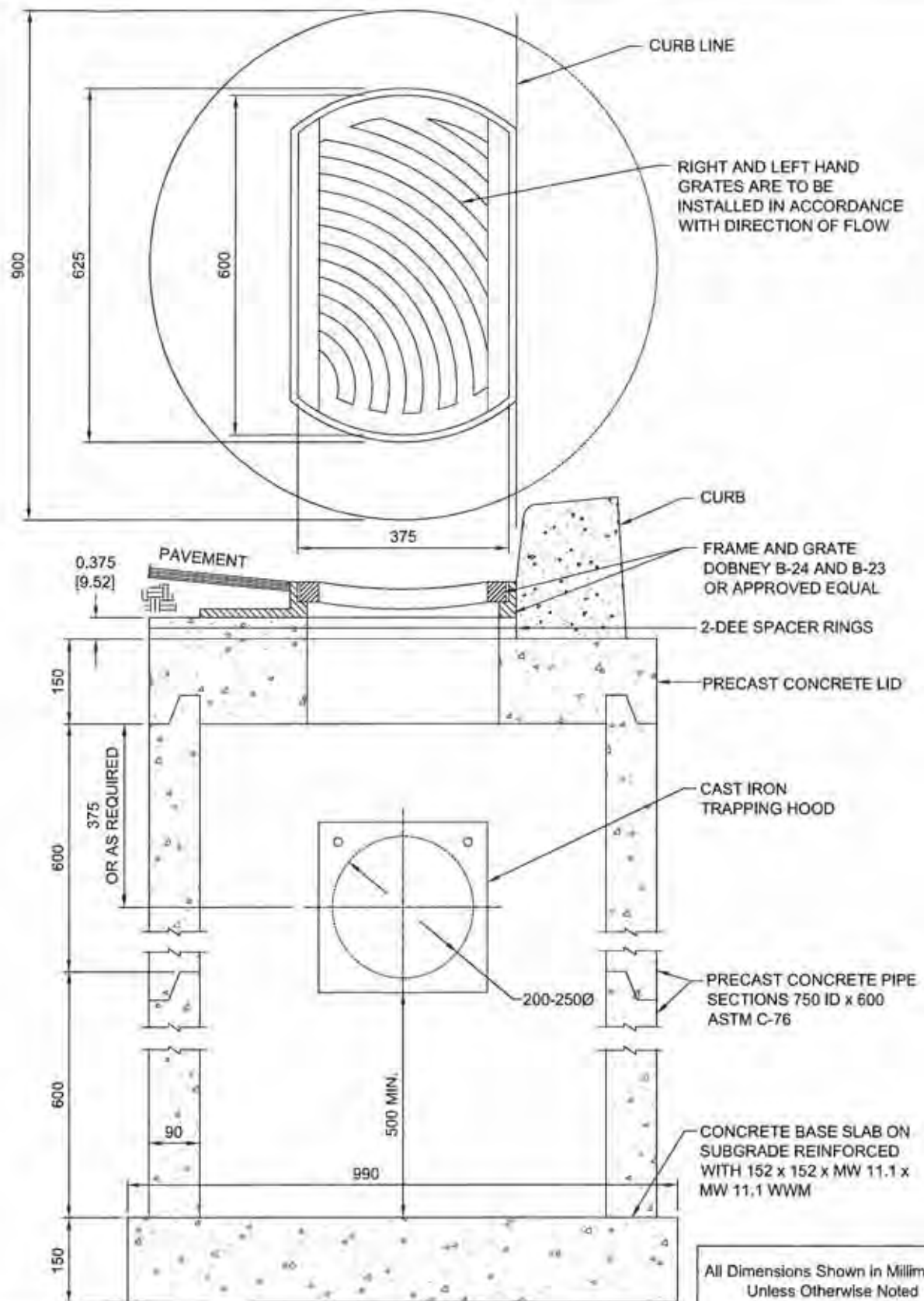
STANDARD STORM DETAIL

APPR:

DATE: 2015

SCALE: N.T.S.

DWG. NO. SQ - S22



TITLE:

CURB CATCH
BASIN DETAIL

DISTRICT OF SQUAMISH

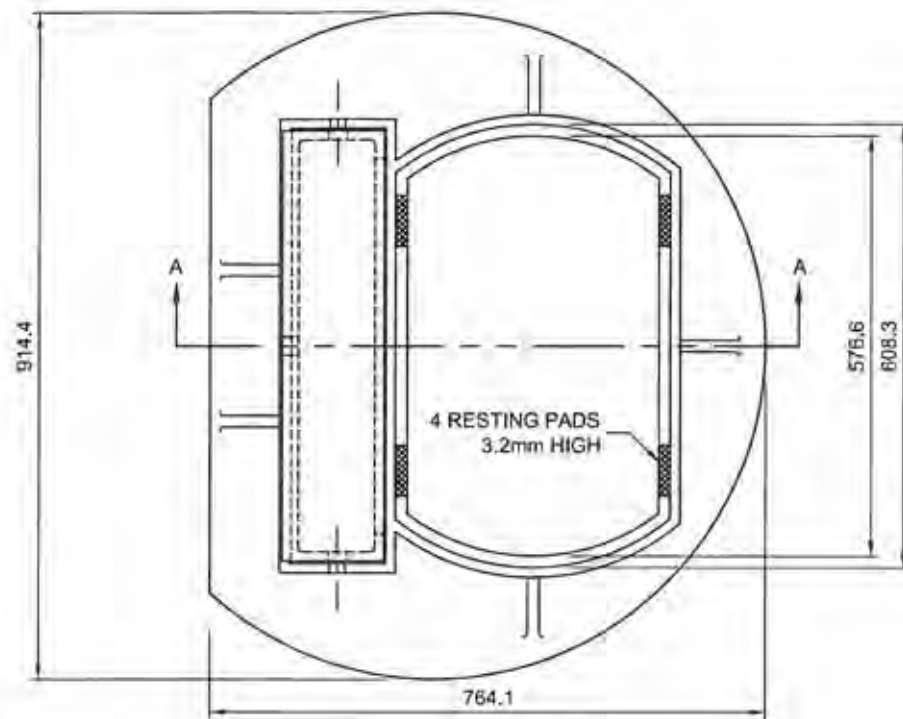
STANDARD STORM DETAIL

APPR.

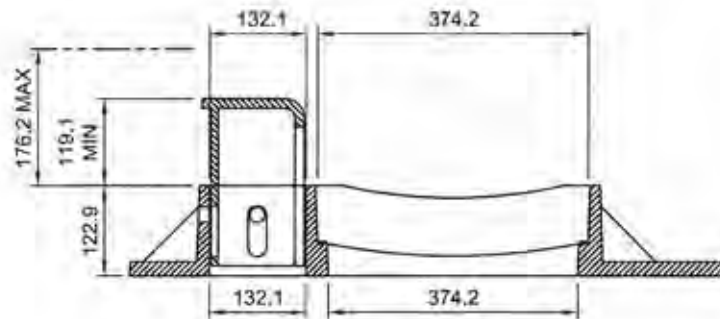
DATE: 2015

SCALE: NTS

DWG. NO: SQ - S23



PLAN



SECTION A-A

USED WITH B-23 GRATE



TITLE:

ADJUSTABLE FRAME
AND HOOD

DISTRICT OF SQUAMISH

STANDARD STORM DETAIL

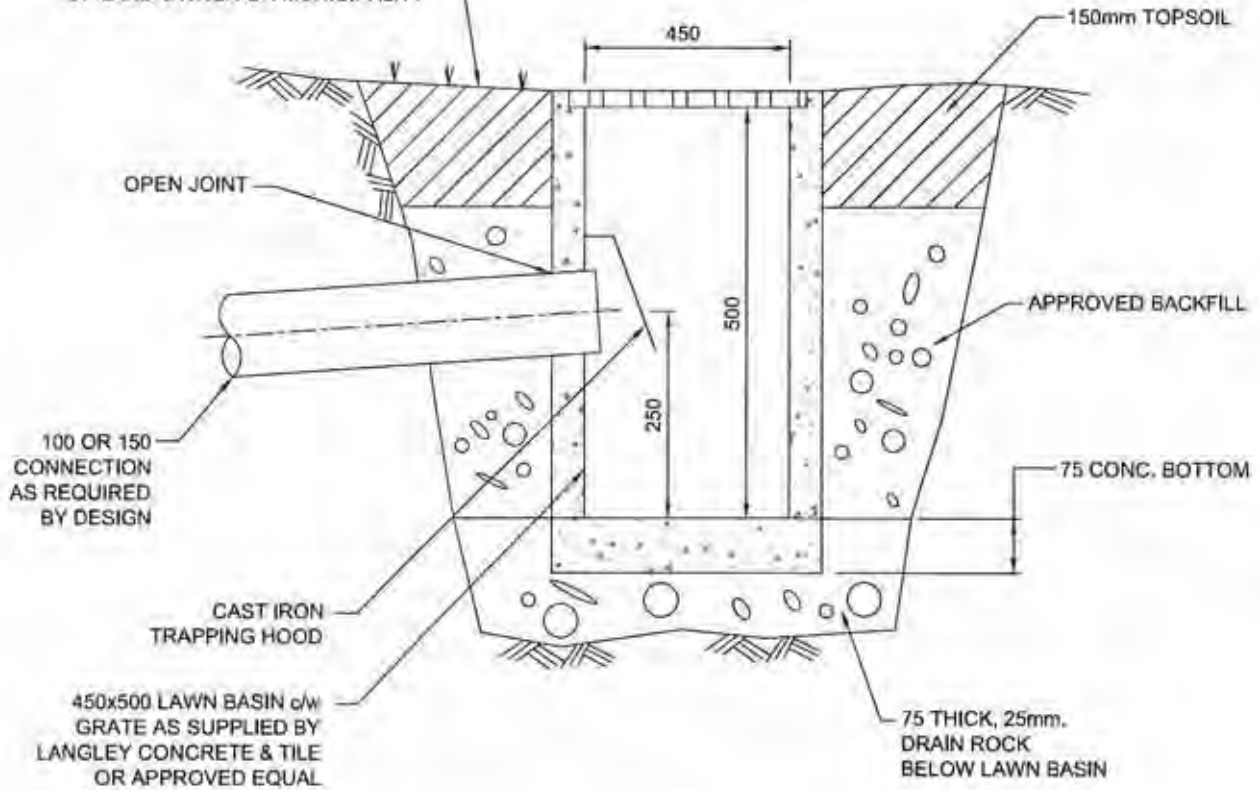
APPR:

DATE: 2015

SCALE: NTS

DWG. NO: SQ - S24A

RESTORE SURFACE TO REQUIREMENTS
OF LAND OWNER OR MUNICIPALITY



TYPE 3

NOTE:

SEE MMCD DWG. S12 FOR TYPES 1 AND 2



TITLE:

LAWN BASIN

DISTRICT OF SQUAMISH

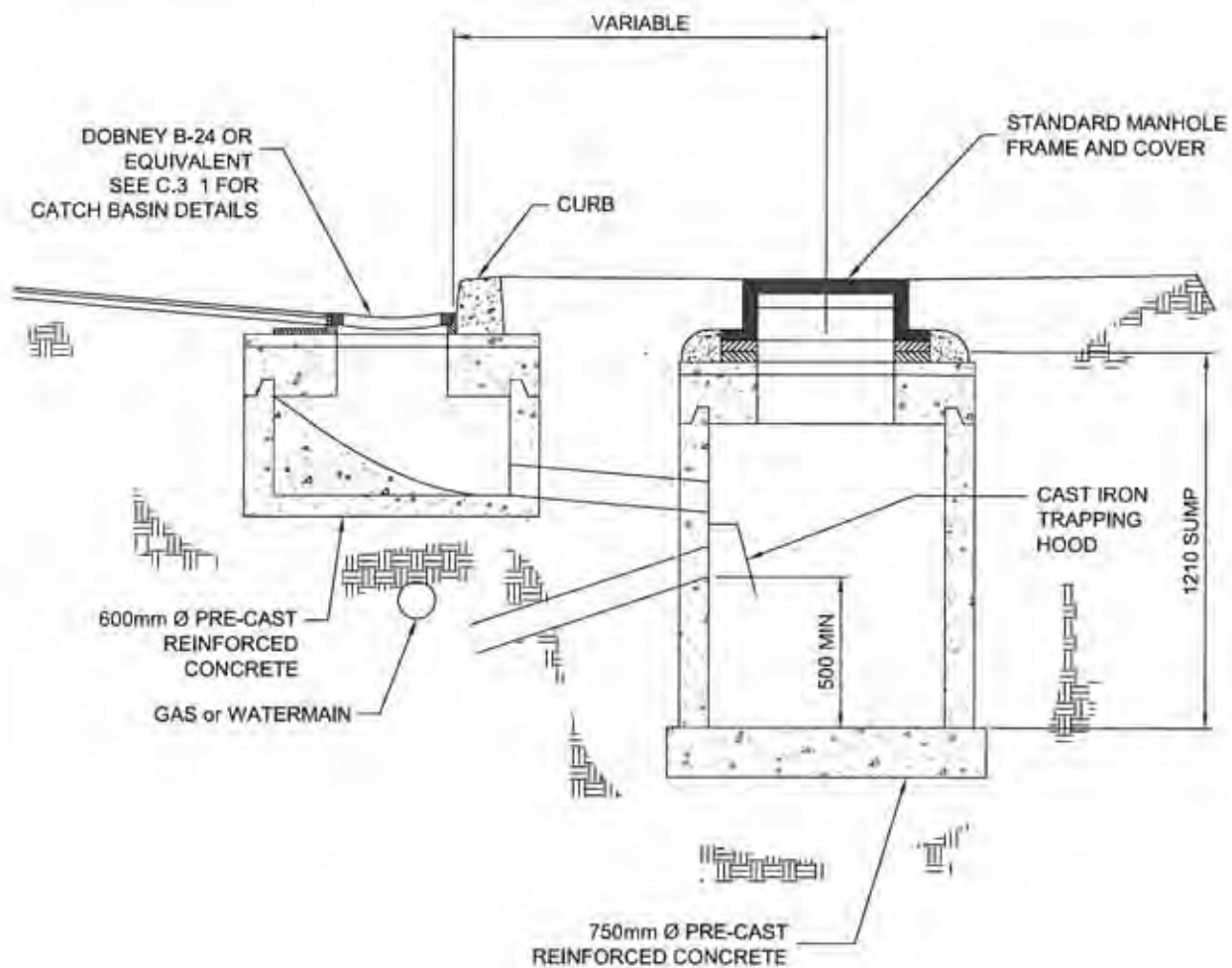
STANDARD STORM DETAIL

APPR.

DATE: 2015

SCALE: NTS

DWG. NO. SQ - S25



TITLE:

SHALLOW CATCH BASIN DESIGN

DISTRICT OF SQUAMISH

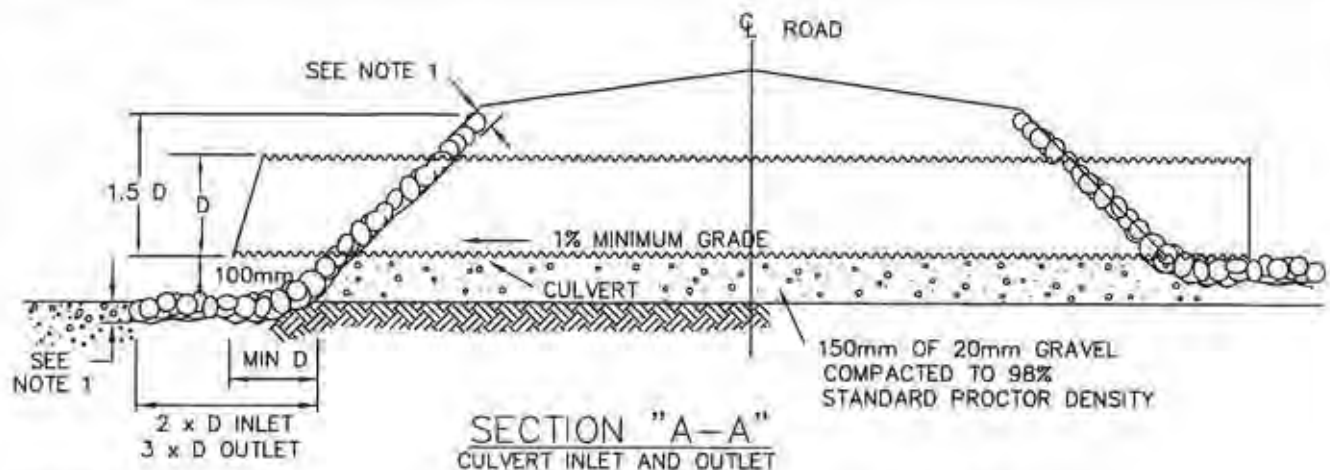
STANDARD STORM DETAIL

APPR.

DATE: 2015

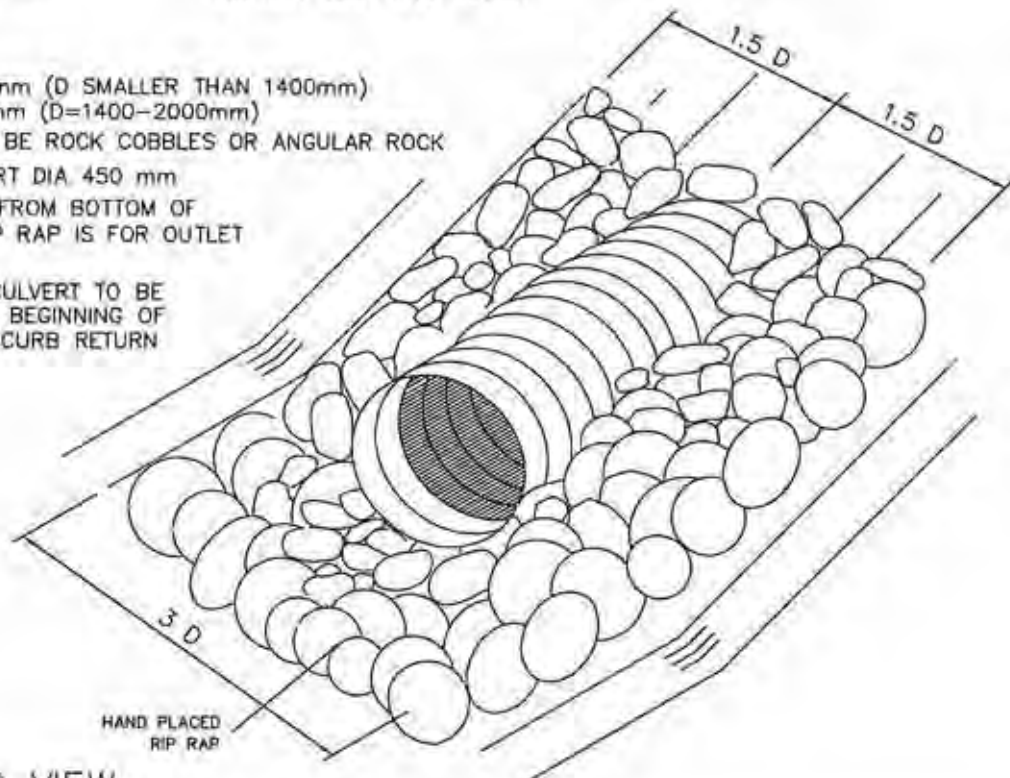
SCALE: NTS

DWG. NO: SQ - S26



NOTES:

1. THICKNESS 300mm (D SMALLER THAN 1400mm)
THICKNESS 500mm (D=1400-2000mm)
2. RIP RAP SHALL BE ROCK COBBLES OR ANGULAR ROCK
3. MINIMUM CULVERT DIA 450 mm
4. 100 mm DROP FROM BOTTOM OF CULVERT TO RIP RAP IS FOR OUTLET END ONLY
5. PLAN VIEW - CULVERT TO BE PLACED AT THE BEGINNING OF CURVE OF THE CURB RETURN



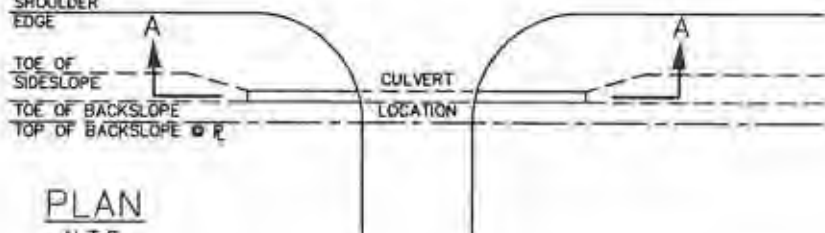
CENTER LINE OF
TRAVELLED SURFACE

SHOULDER
EDGE

TOE OF
SIDESLOPE

TOE OF BACKSLOPE
TOP OF BACKSLOPE

PLAN
N.T.S.




SQUAMISH

TITLE:

TYPICAL CULVERT
INSTALLATION WITH RIP
RAP END TREATMENT

DISTRICT OF SQUAMISH
STANDARD STORM DETAIL

APPR.

DATE: 2015

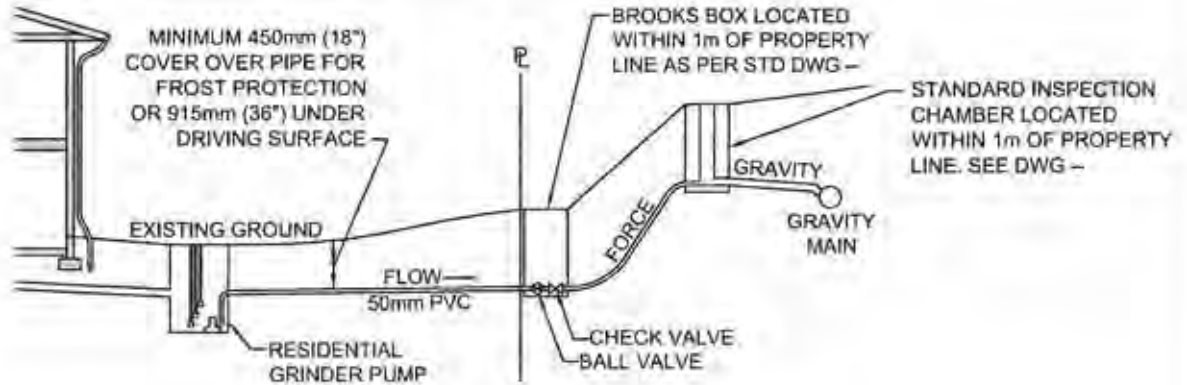
SCALE: N.T.S.

DWG. NO: SQ - S27

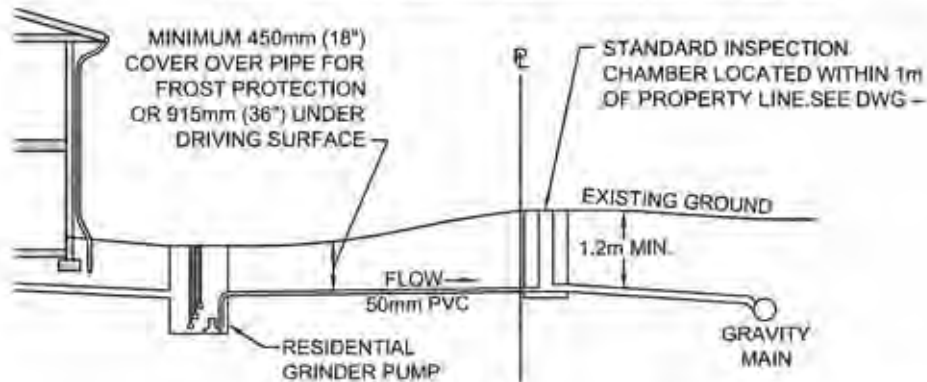
NOTES:

1. THIS DRAWING SHALL APPLY TO ALL IC INSTALLATION WHERE IC IS INSTALLED BETWEEN THE GRASSED BLVD, AN PROPERTY LINE.
2. REFER TO DRAWING MMCD S7 FOR INSTALLATION REQUIREMENTS.
3. INSPECTION CHAMBER TO BE APPROVED MANUFACTURED FITTING.
4. REFER TO CONTRACT DRAWING FOR SITE SPECIFIC DIMENSIONS AND MMCD FOR DETAILED SPECIFICATIONS.
5. INSPECTION CHAMBER LID TO BE PERMANENTLY MARKED "DISTRICT OF SQUAMISH" AND MARKED RED.
6. SEE DRAWING — FOR TRENCH DETAIL.

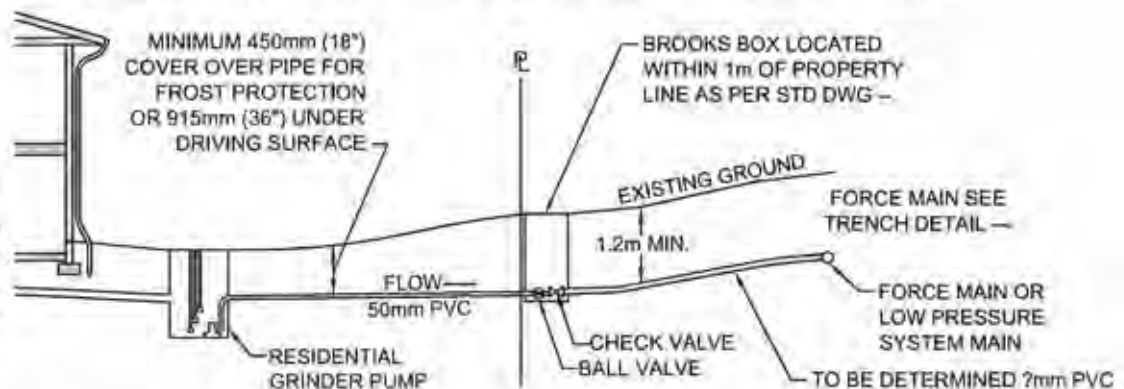
SANITARY FORCE/ GRAVITY CONNECTION TO GRAVITY MAIN



SANITARY FORCE CONNECTION TO GRAVITY MAIN



SANITARY FORCE CONNECTION TO LOW PRESSURE SYSTEM MAIN



NOTES:
DEPTH OF SERVICES ARE SCHEMATIC ONLY.
ALL UTILITIES SHALL BE INSTALLED TO ACCOMMODATE ULTIMATE ROAD AND DRIVEWAY LOCATIONS.
AT THE DISCRETION OF THE DISTRICT ENGINEER, THE LOCATION OF WORKS MAY BE VARIED WHERE WARRANTED BY TOPOGRAPHY OR PREVIOUS INSTALLATION OF OTHER WORKS.



TITLE:

**SANITARY FORCE MAIN
CONNECTION**

DISTRICT OF SQUAMISH

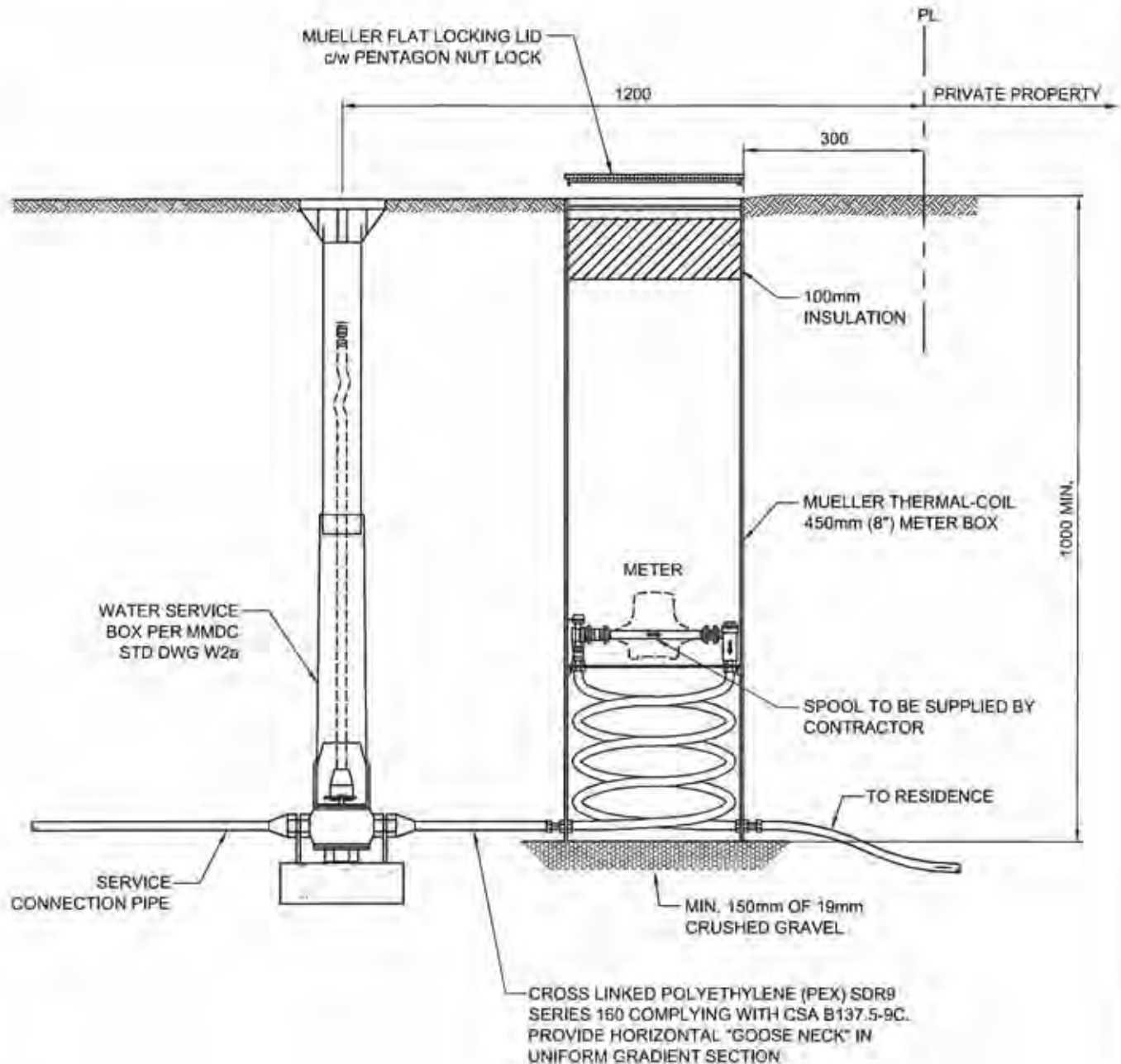
STANDARD SANITARY DETAIL

APPR.

DATE: 2015

SCALE: NTS

DWG. NO.: SQ - S28



NOTE: ANGLE BALL VALVE
AND ANGLE DUAL CHECK
VALVE ARE SUPPLIED WITH
SPECIFIED METER BOX.



TITLE:

METER INSTALLATION
FOR 38mm SERVICE
CONNECTIONS

DISTRICT OF SQUAMISH

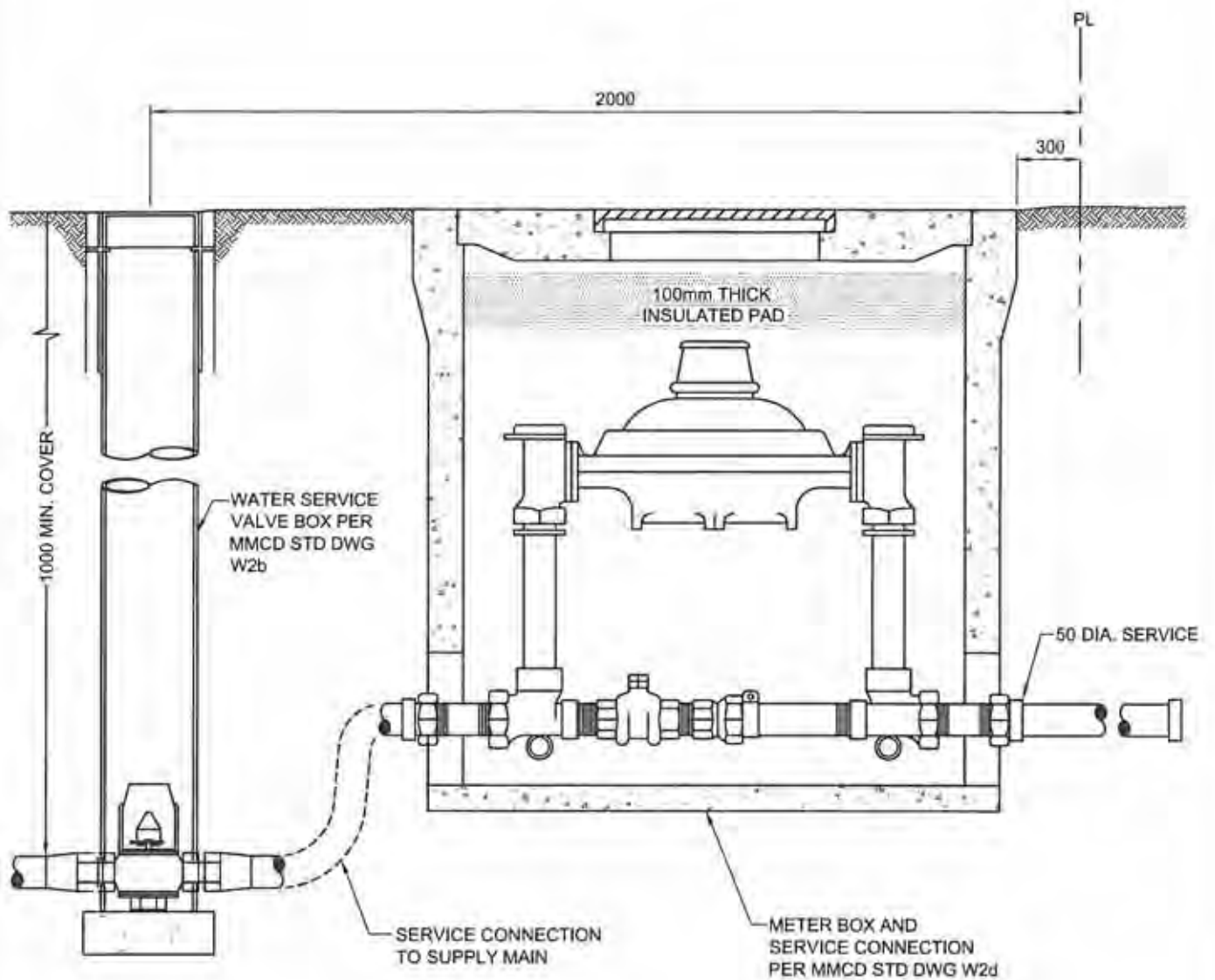
WATER SERVICE CONNECTION

APPR.

DATE: 2015

SCALE: INTS

DWG. NO: SQ - W01



TITLE:

**METER INSTALLATION
FOR 50mm SERVICE
CONNECTIONS**

DISTRICT OF SQUAMISH

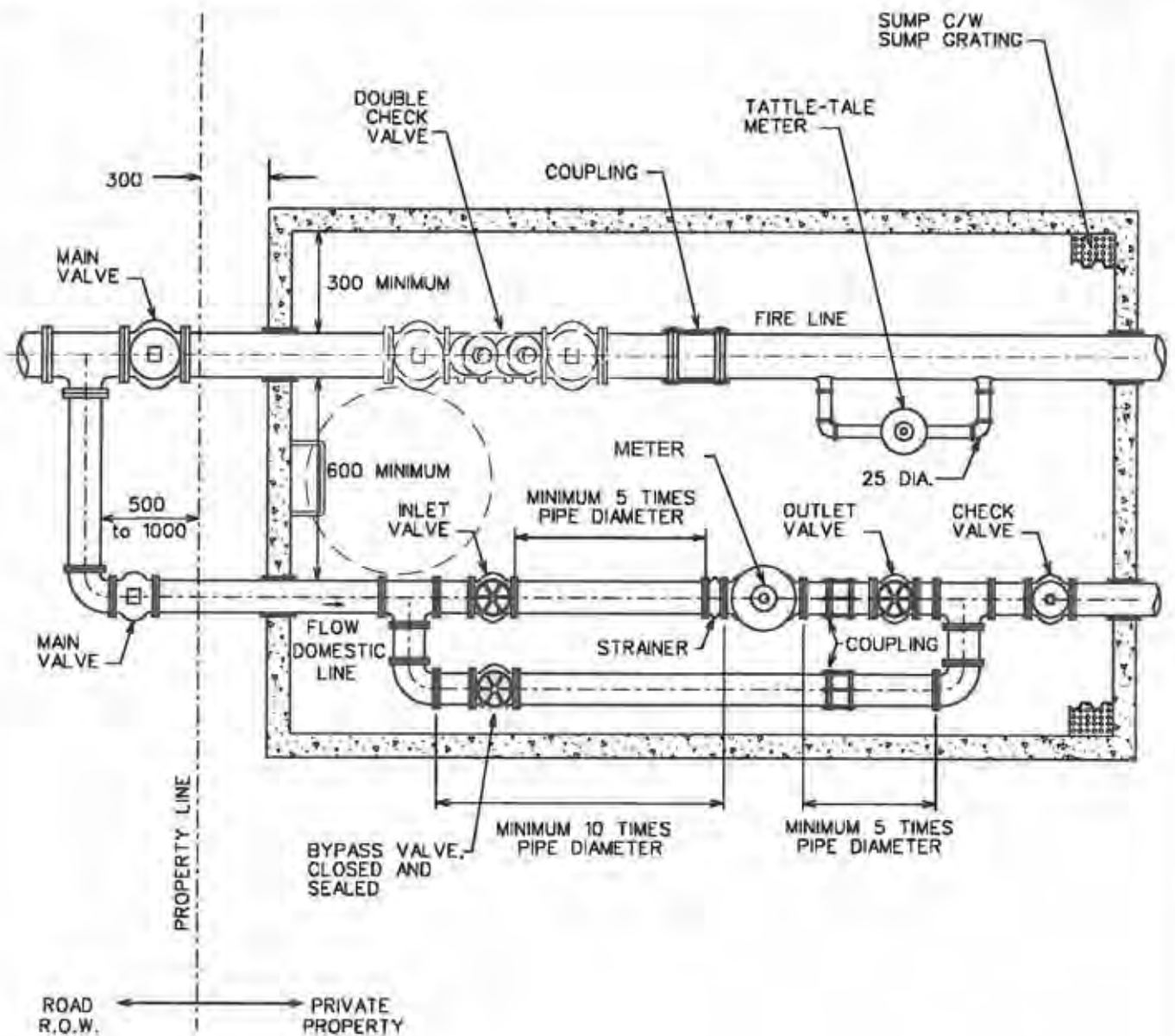
WATER SERVICE CONNECTION

APPR.

DATE: **2015**

SCALE: NTS

DWG. NO: **SQ - W02**



NOTE:
THIS DRAWING SHOULD BE REVIEWED
IN CONJUNCTION WITH APPLICABLE
SECTIONS OF SUBDIVISION AND
DEVELOPMENT CONTROL BYLAW.



TITLE:

WATER METER CHAMBER
100mm AND LARGER

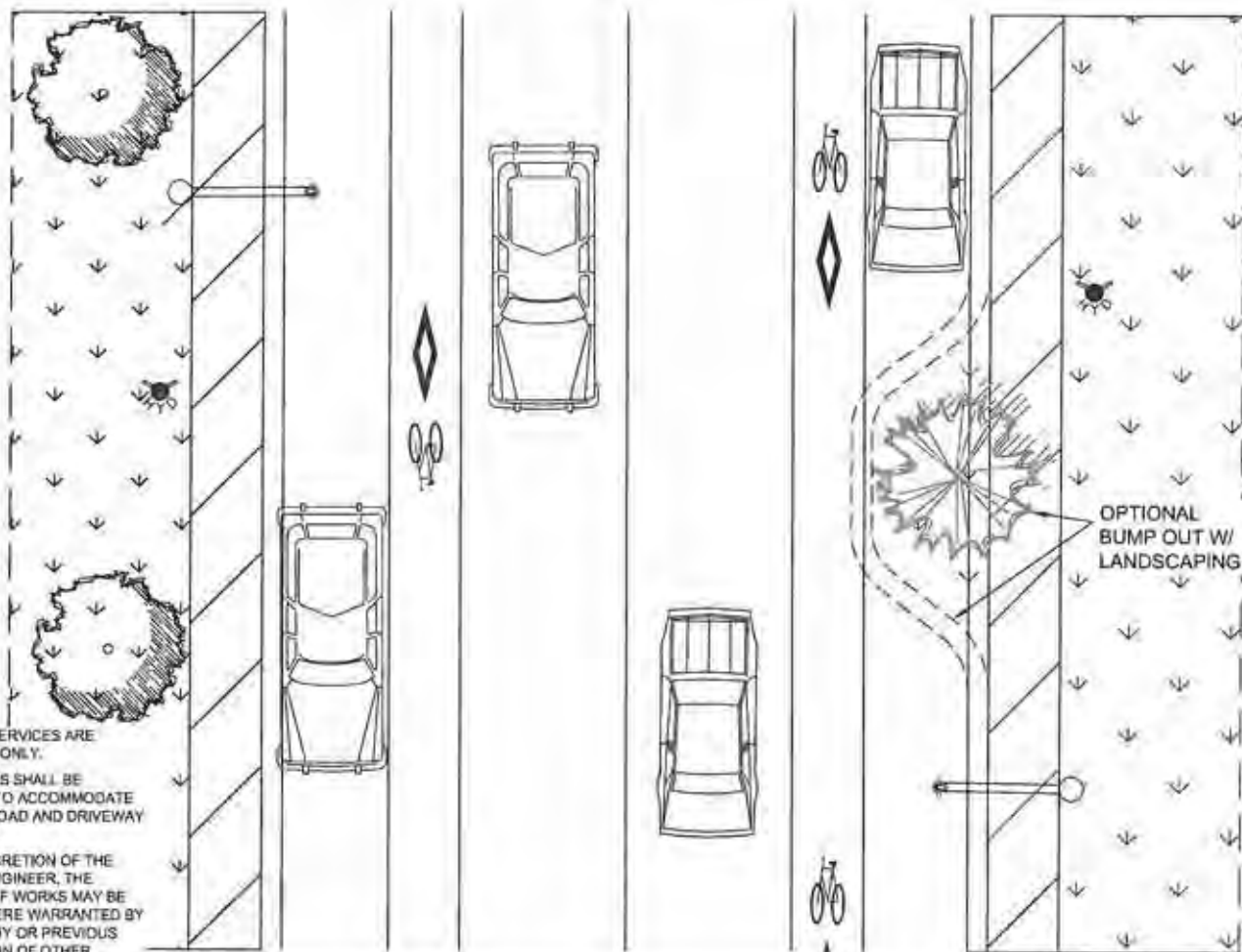
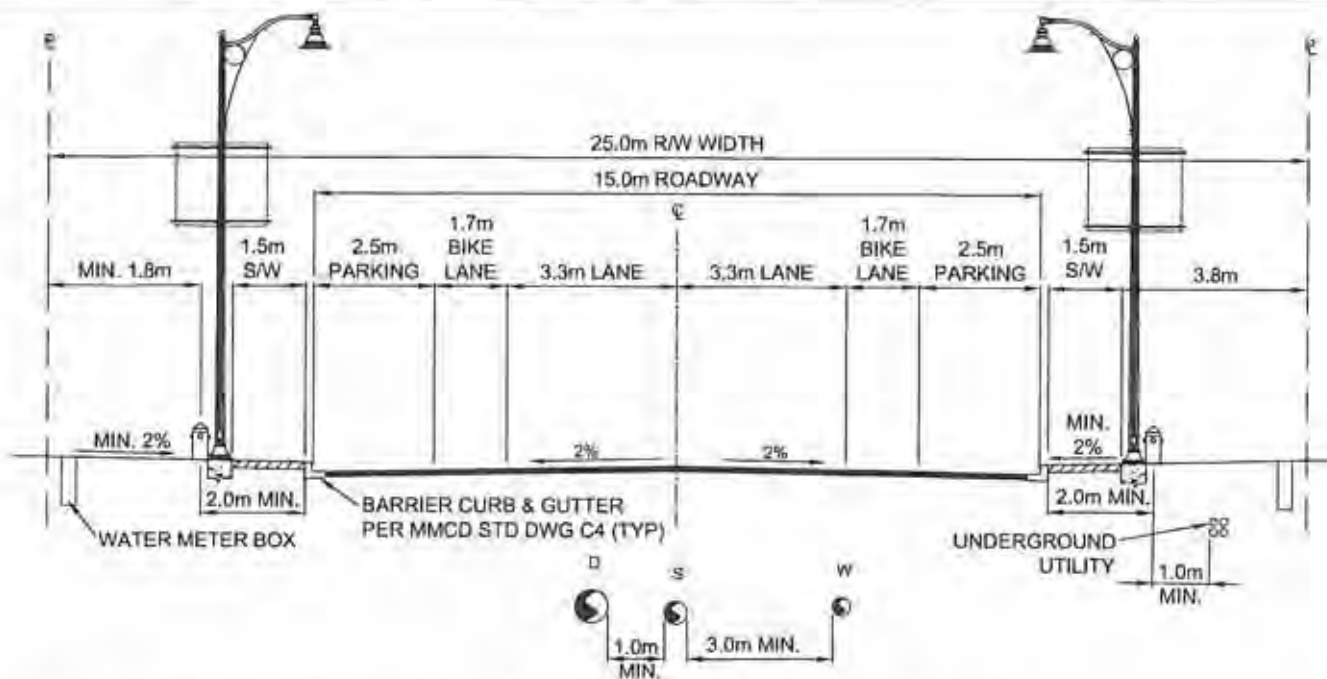
DISTRICT OF SQUAMISH
WATER SERVICE CONNECTION

APPR:

DATE: 2015

SCALE: NTS

DWG. NO: SQ - W03



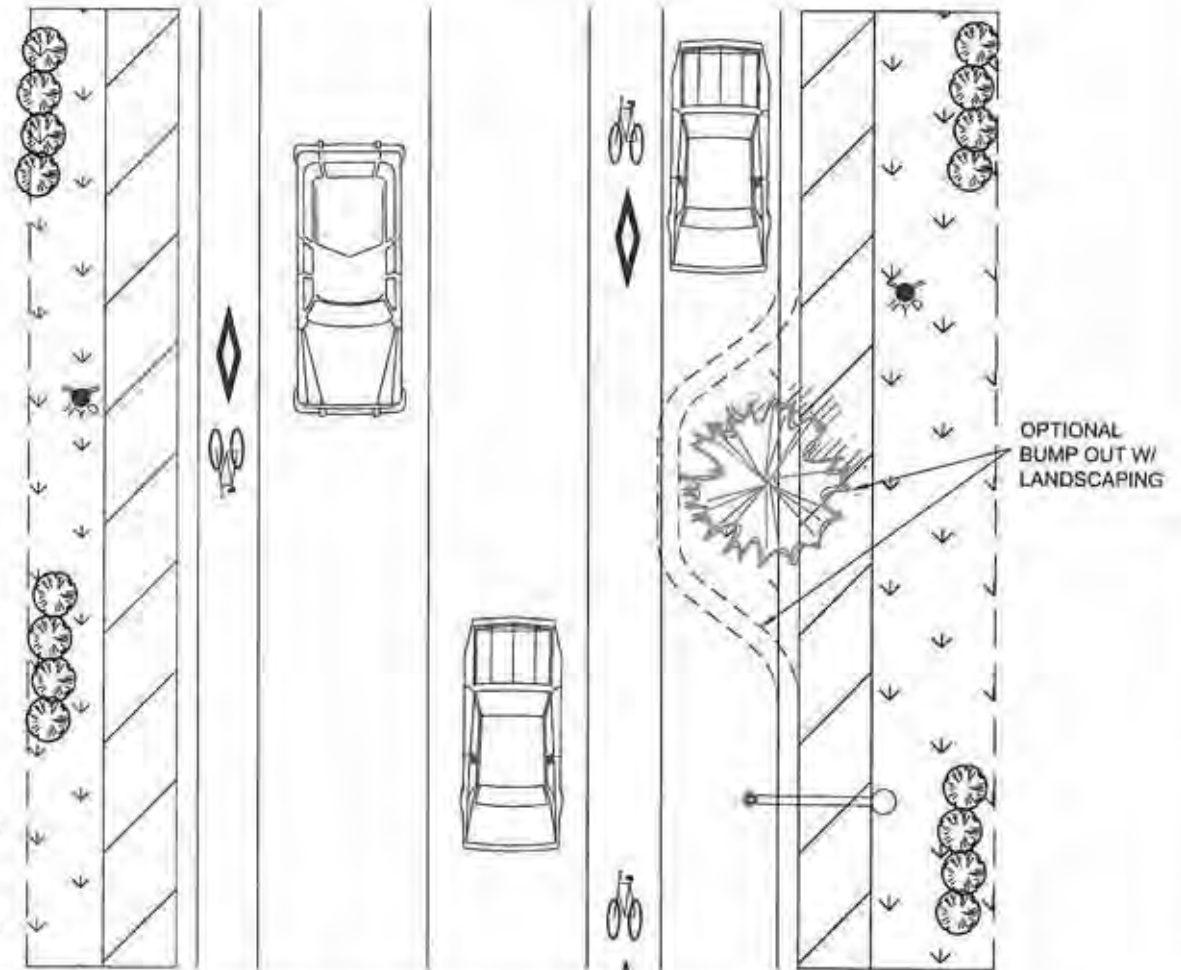
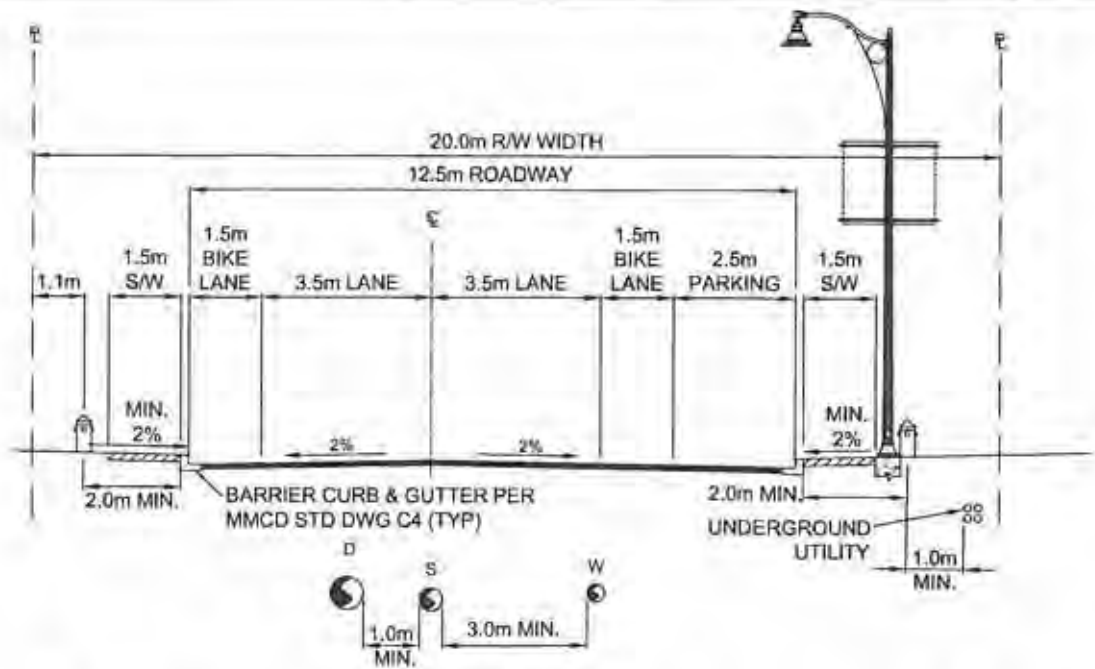
NOTES:
 DEPTH OF SERVICES ARE SCHEMATIC ONLY.
 ALL UTILITIES SHALL BE INSTALLED TO ACCOMMODATE ULTIMATE ROAD AND DRIVEWAY LOCATIONS.
 AT THE DISCRETION OF THE DISTRICT ENGINEER, THE LOCATION OF WORKS MAY BE VARIED WHERE WARRANTED BY TOPOGRAPHY OR PREVIOUS INSTALLATION OF OTHER WORKS.



TITLE:
 MAJOR COLLECTOR STREET
 URBAN UNDIVIDED
 25m RIGHT OF WAY

DISTRICT OF SQUAMISH
 STANDARD ROAD CROSS SECTION

APPR.	DATE: 2015
SCALE: NTS	DWG. NO.: SQ - R01

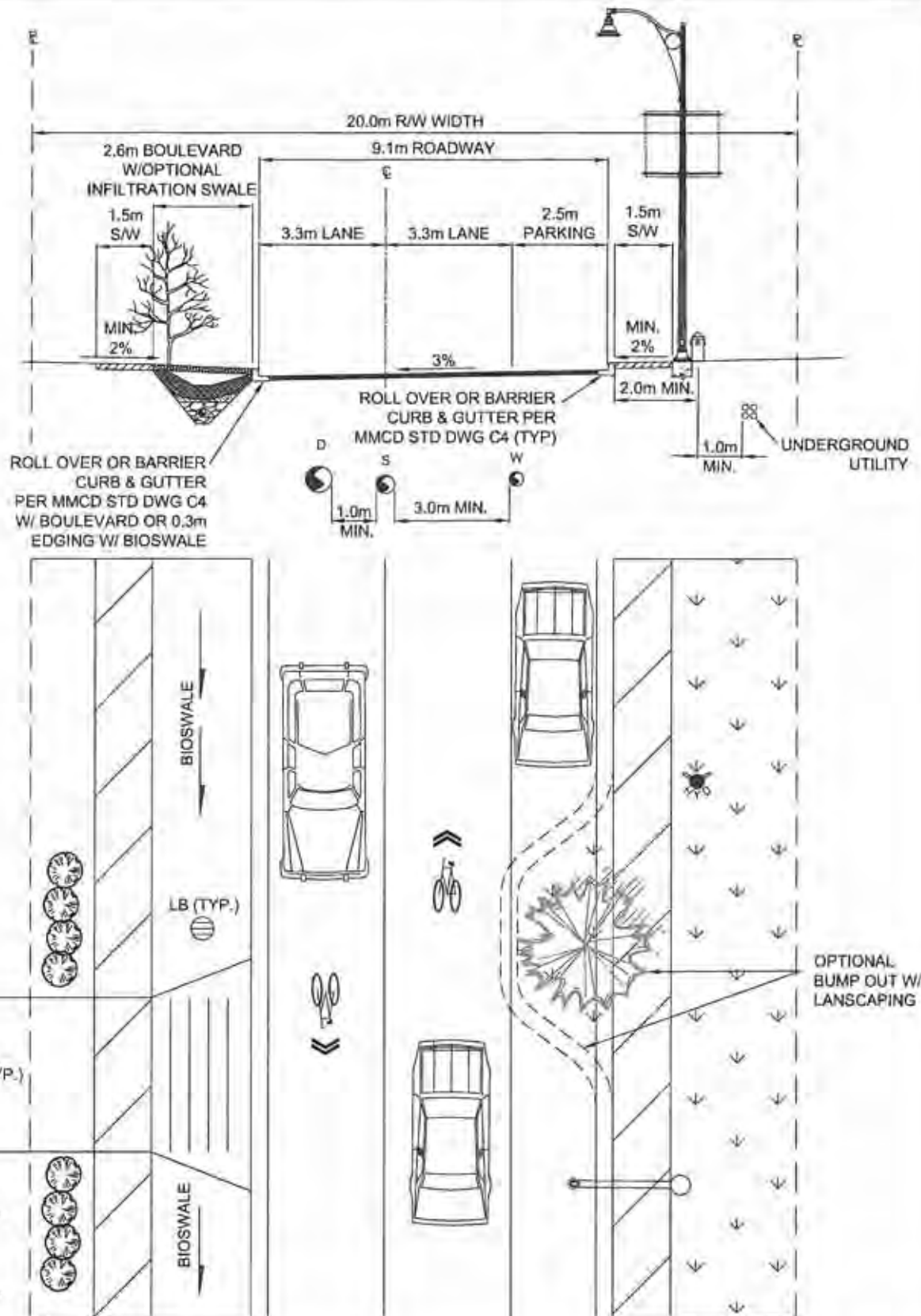


NOTES:
 DEPTH OF SERVICES ARE SCHEMATIC ONLY.
 ALL UTILITIES SHALL BE INSTALLED TO ACCOMMODATE ULTIMATE ROAD AND DRIVEWAY LOCATIONS.
 AT THE DISCRETION OF THE DISTRICT ENGINEER, THE LOCATION OF WORKS MAY BE VARIED WHERE WARRANTED BY TOPOGRAPHY OR PREVIOUS INSTALLATION OF OTHER WORKS.



TITLE:
 MINOR COLLECTOR STREET
 URBAN UNDIVIDED 20m
 RIGHT OF WAY

DISTRICT OF SQUAMISH	
STANDARD ROAD CROSS SECTION	
APPR.	DATE: 2015
SCALE: NTS	DWG. NO: SQ - R02



NOTES:
 DEPTH OF SERVICES ARE SCHEMATIC ONLY.
 ALL UTILITIES SHALL BE INSTALLED TO ACCOMMODATE ULTIMATE ROAD AND DRIVEWAY LOCATIONS.
 AT THE DISCRETION OF THE DISTRICT ENGINEER, THE LOCATION OF WORKS MAY BE VARIED WHERE WARRANTED BY TOPOGRAPHY OR PREVIOUS INSTALLATION OF OTHER WORKS.

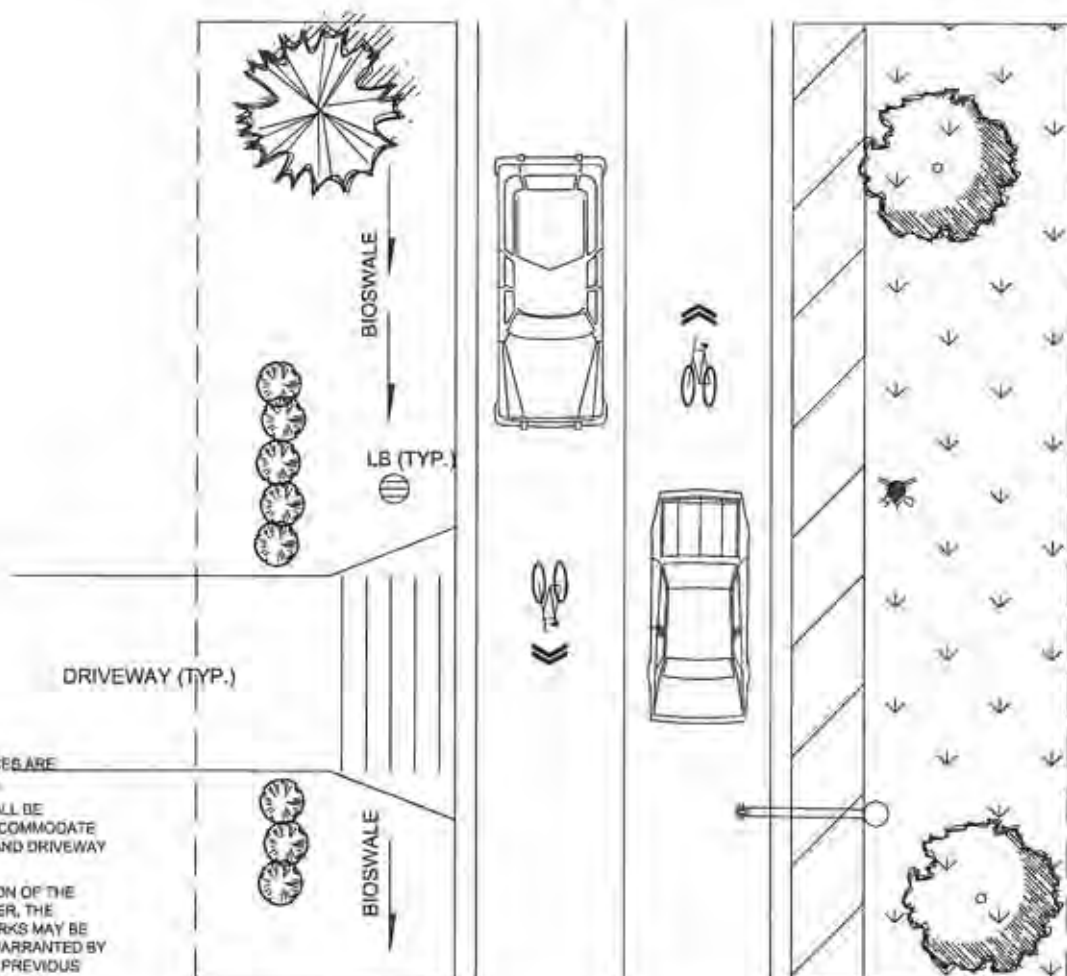
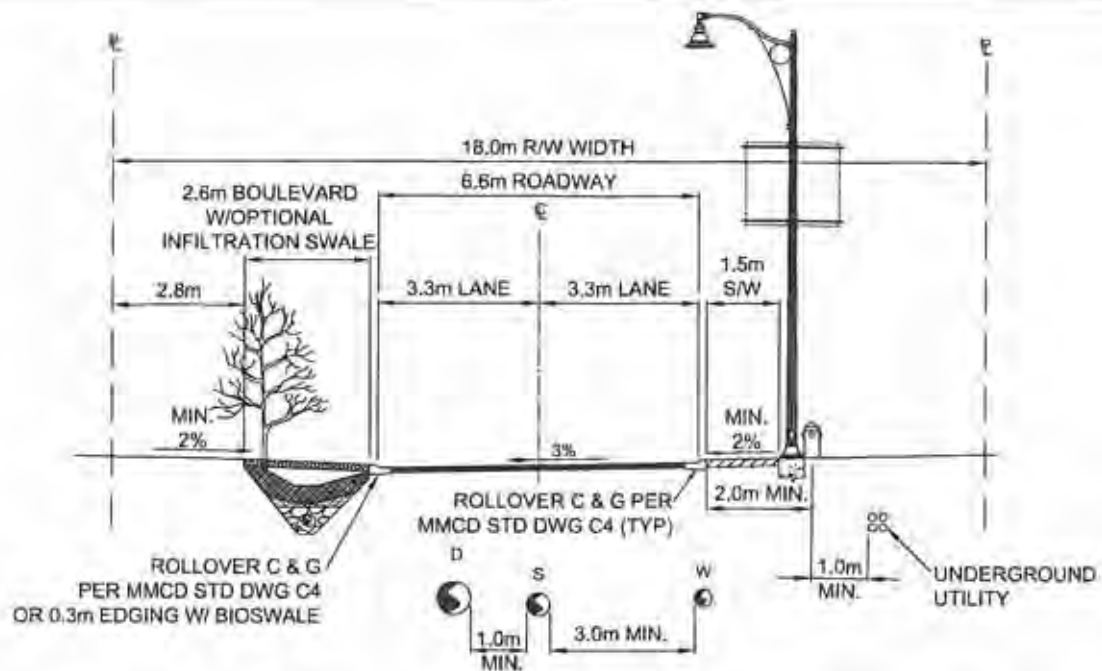


TITLE:

LOCAL STREET
 20m RIGHT OF WAY

DISTRICT OF SQUAMISH
 STANDARD ROAD CROSS SECTION

APPR.	DATE: 2015
SCALE: NTS	DWG. NO: SQ - R03



NOTES:
 DEPTH OF SERVICES ARE SCHEMATIC ONLY.
 ALL UTILITIES SHALL BE INSTALLED TO ACCOMMODATE ULTIMATE ROAD AND DRIVEWAY LOCATIONS.
 AT THE DISCRETION OF THE DISTRICT ENGINEER, THE LOCATION OF WORKS MAY BE VARIED WHERE WARRANTED BY TOPOGRAPHY OR PREVIOUS INSTALLATION OF OTHER WORKS.

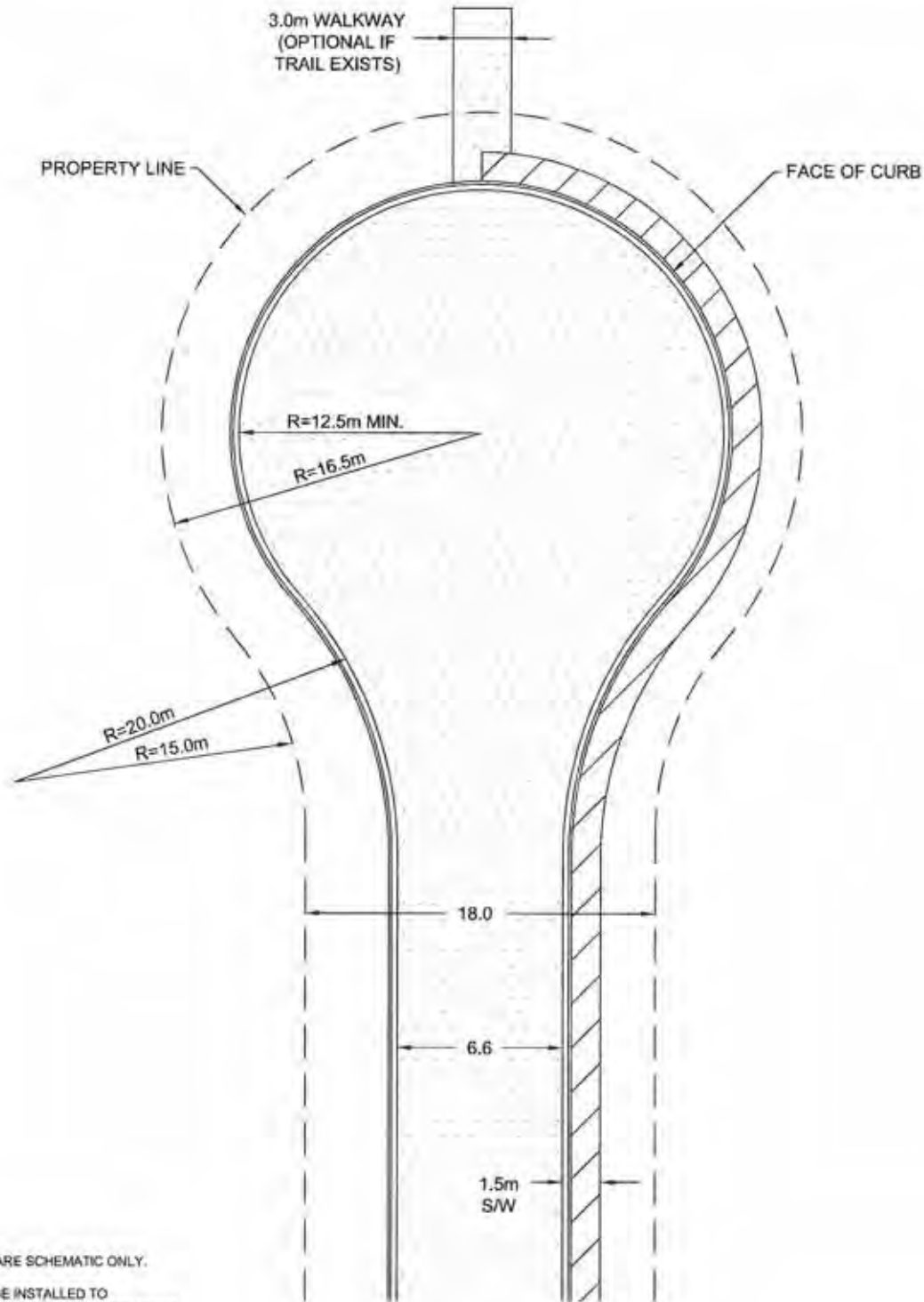


TITLE:

LIMITED LOCAL STREET
 18m RIGHT OF WAY

DISTRICT OF SQUAMISH
 STANDARD ROAD CROSS SECTION

APPR	DATE 2015
SCALE NTS	DWG. NO. SQ - R04



NOTES:

DEPTH OF SERVICES ARE SCHEMATIC ONLY.

ALL UTILITIES SHALL BE INSTALLED TO ACCOMMODATE ULTIMATE ROAD AND DRIVEWAY LOCATIONS.

AT THE DISCRETION OF THE DISTRICT ENGINEER, THE LOCATION OF WORKS MAY BE VARIED WHERE WARRANTED BY TOPOGRAPHY OR PREVIOUS INSTALLATION OF OTHER WORKS.



TITLE:

STANDARD CUL-DE-SAC
URBAN RESIDENTIAL 18m
RIGHT OF WAY

DISTRICT OF SQUAMISH

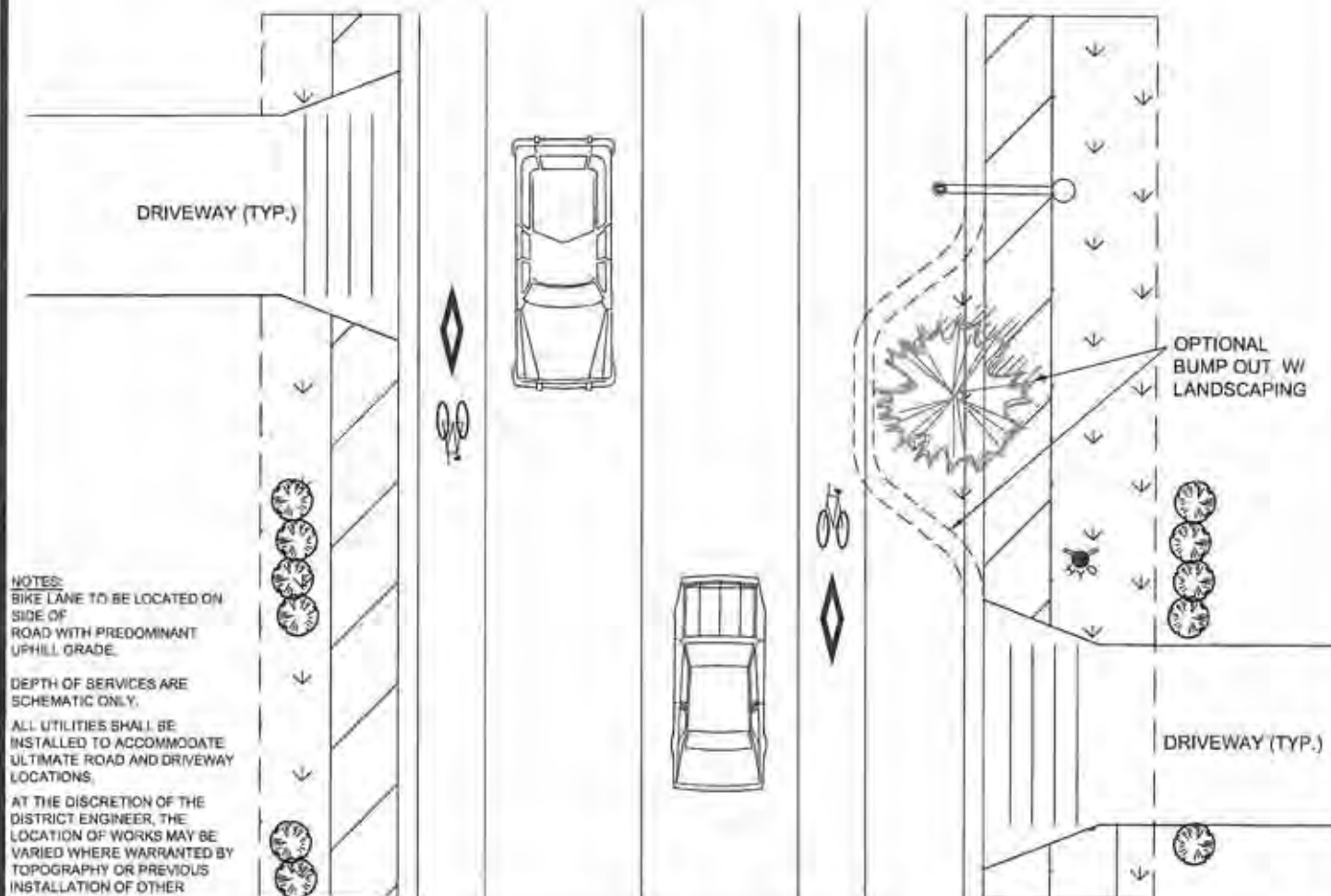
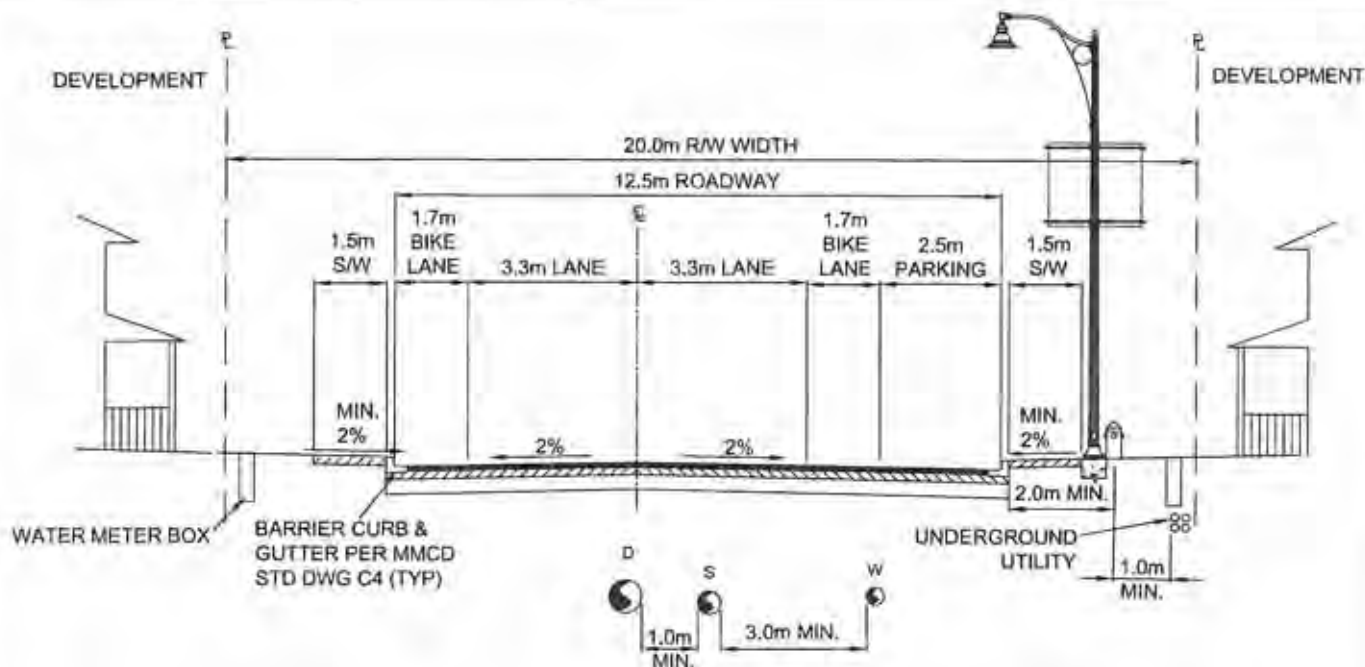
STANDARD ROAD CROSS SECTION

APPR.

DATE: 2015

SCALE: NTS

DWG. NO: SQ - R05



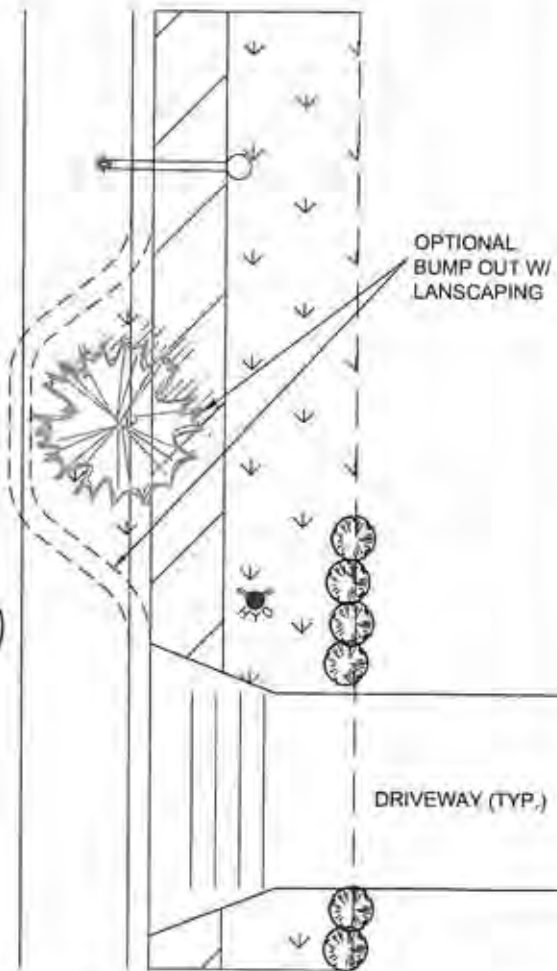
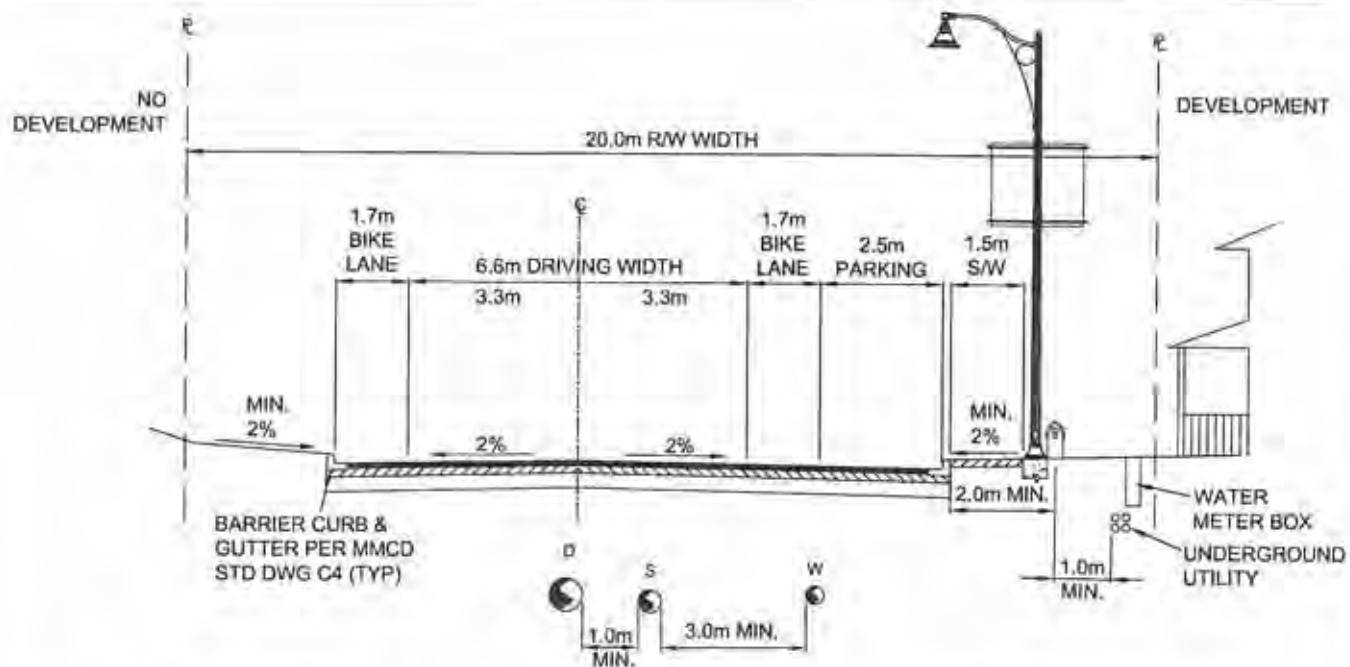
NOTES:
BIKE LANE TO BE LOCATED ON
SIDE OF
ROAD WITH PREDOMINANT
UPHILL GRADE.
DEPTH OF SERVICES ARE
SCHEMATIC ONLY.
ALL UTILITIES SHALL BE
INSTALLED TO ACCOMMODATE
ULTIMATE ROAD AND DRIVEWAY
LOCATIONS.
AT THE DISCRETION OF THE
DISTRICT ENGINEER, THE
LOCATION OF WORKS MAY BE
VARIED WHERE WARRANTED BY
TOPOGRAPHY OR PREVIOUS
INSTALLATION OF OTHER
WORKS.



TITLE:
HILLSIDE STANDARD
(DEVELOPMENT BOTH SIDES)
COLLECTOR STREET 20.0m
RIGHT OF WAY

DISTRICT OF SQUAMISH
STANDARD ROAD CROSS SECTION

APPR.	DATE: 2015
SCALE/ NTS	DWG. NO: SQ - R06

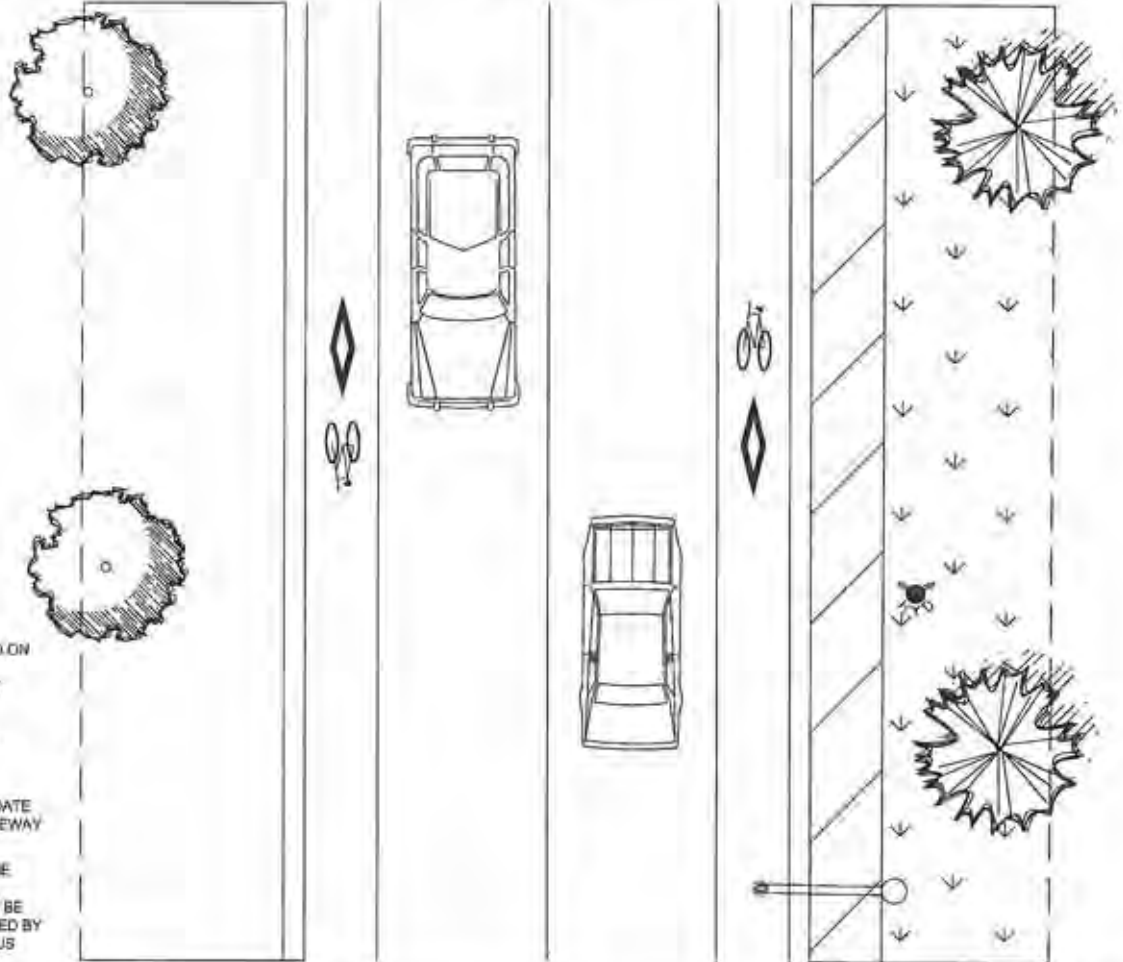
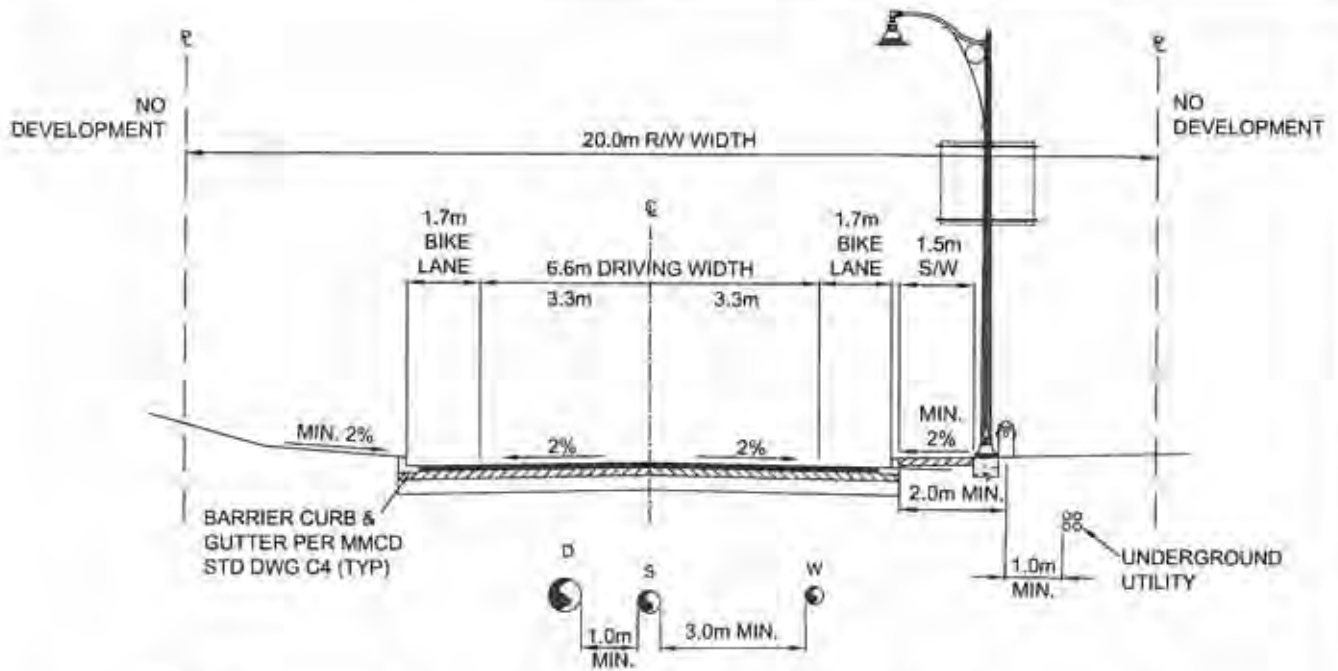


NOTES:
BIKE LANE TO BE LOCATED ON
SIDE OF
ROAD WITH PREDOMINANT
UPHILL GRADE.
DEPTH OF SERVICES ARE
SCHEMATIC ONLY.
ALL UTILITIES SHALL BE
INSTALLED TO ACCOMMODATE
ULTIMATE ROAD AND DRIVEWAY
LOCATIONS.
AT THE DISCRETION OF THE
DISTRICT ENGINEER, THE
LOCATION OF WORKS MAY BE
VARIED WHERE WARRANTED BY
TOPOGRAPHY OR PREVIOUS
INSTALLATION OF OTHER
WORKS.



TITLE:
HILLSIDE STANDARD
(DEVELOPMENT ONE SIDE)
COLLECTOR STREET
20.0m RIGHT OF WAY

DISTRICT OF SQUAMISH	
STANDARD ROAD CROSS SECTION	
APPR.	DATE: 2015
SCALE: NTS	DWG. NO: SQ - R07



NOTES:
BIKE LANE TO BE LOCATED ON
SIDE OF
ROAD WITH PREDOMINANT
UPHILL GRADE.

DEPTH OF SERVICES ARE
SCHEMATIC ONLY.
ALL UTILITIES SHALL BE
INSTALLED TO ACCOMMODATE
ULTIMATE ROAD AND DRIVEWAY
LOCATIONS.

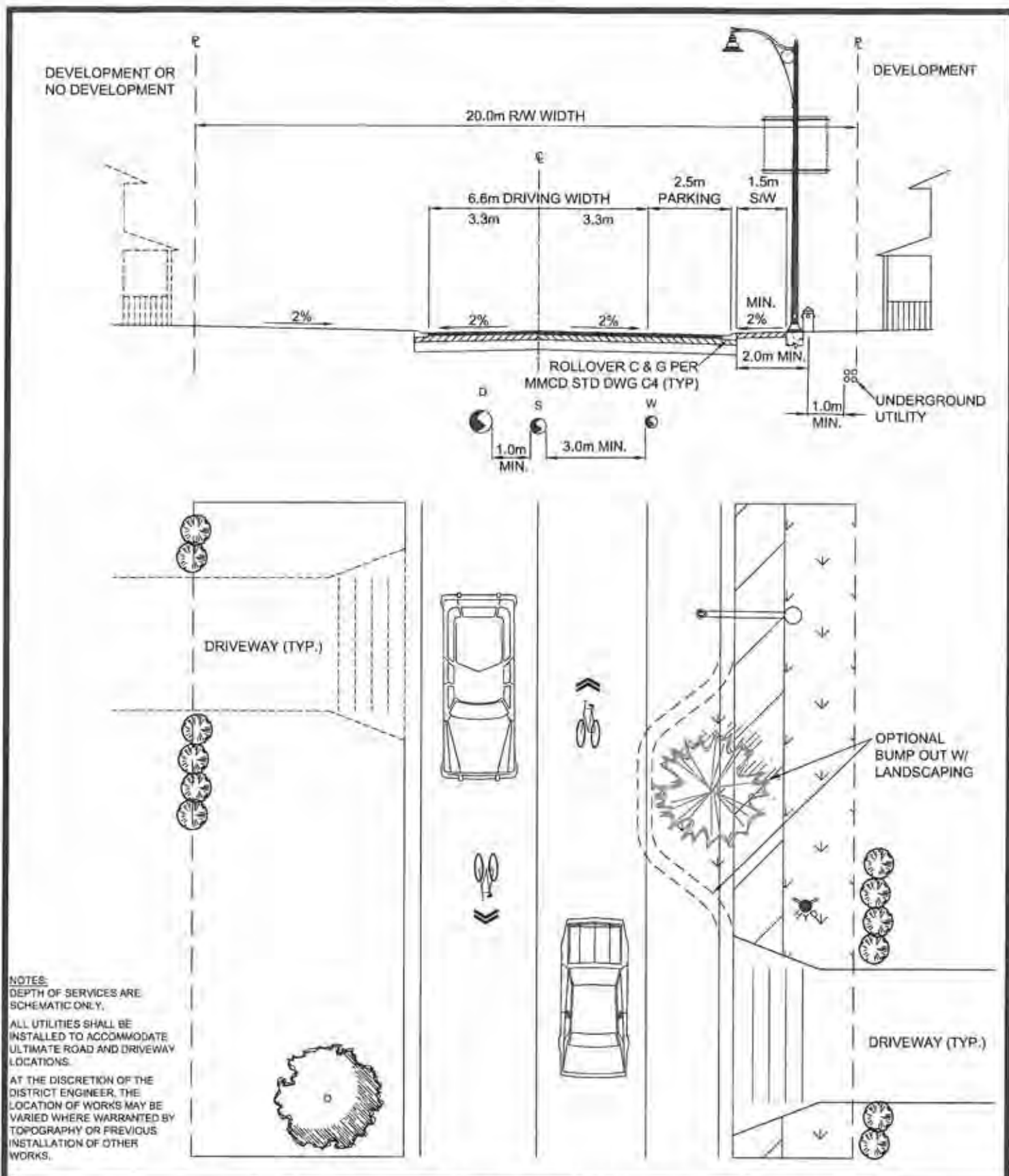
AT THE DISCRETION OF THE
DISTRICT ENGINEER, THE
LOCATION OF WORKS MAY BE
VARIED WHERE WARRANTED BY
TOPOGRAPHY OR PREVIOUS
INSTALLATION OF OTHER
WORKS.


SQUAMISH

TITLE:
**HILLSIDE STANDARD
(NO DEVELOPMENT)
COLLECTOR STREET
20.0m RIGHT OF WAY**

DISTRICT OF SQUAMISH
STANDARD ROAD CROSS SECTION

APPR.	DATE: 2015
SCALE: NT5	DWG. NO: SQ - R08

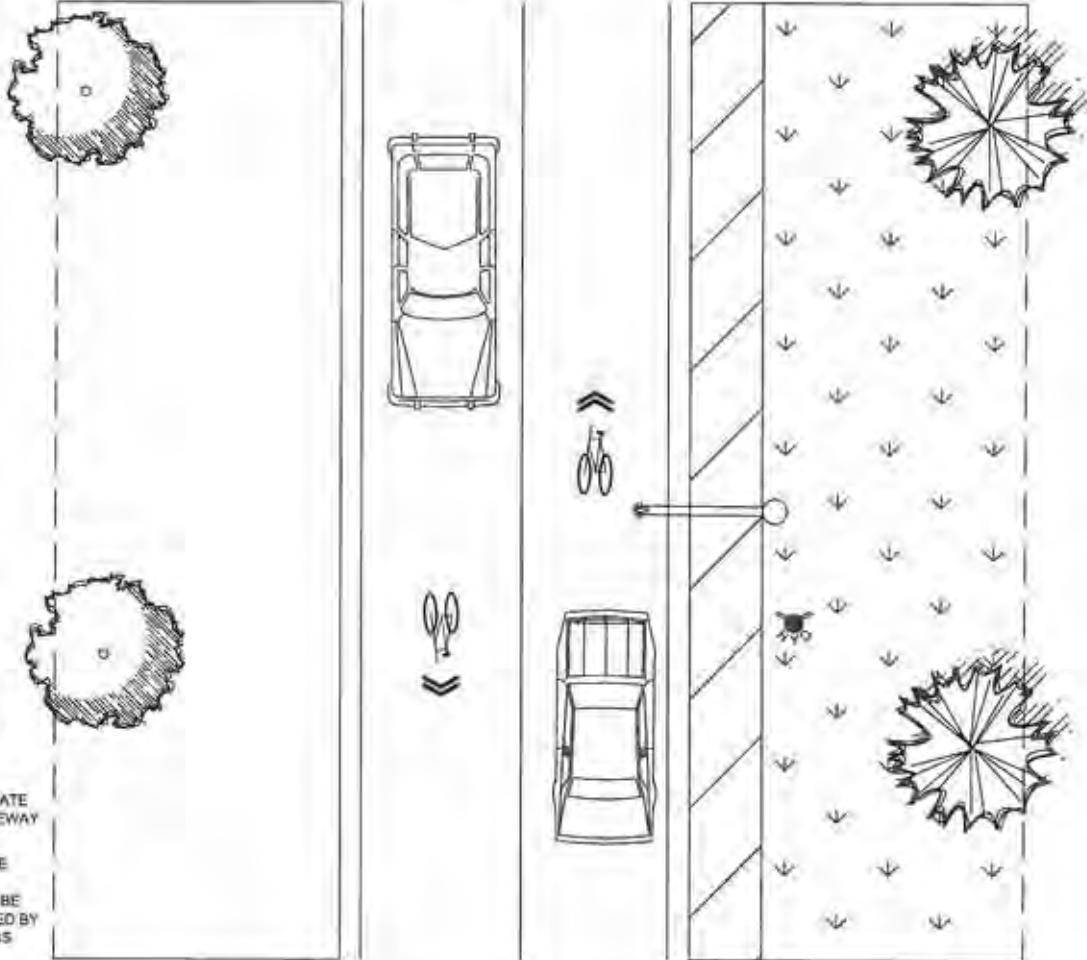
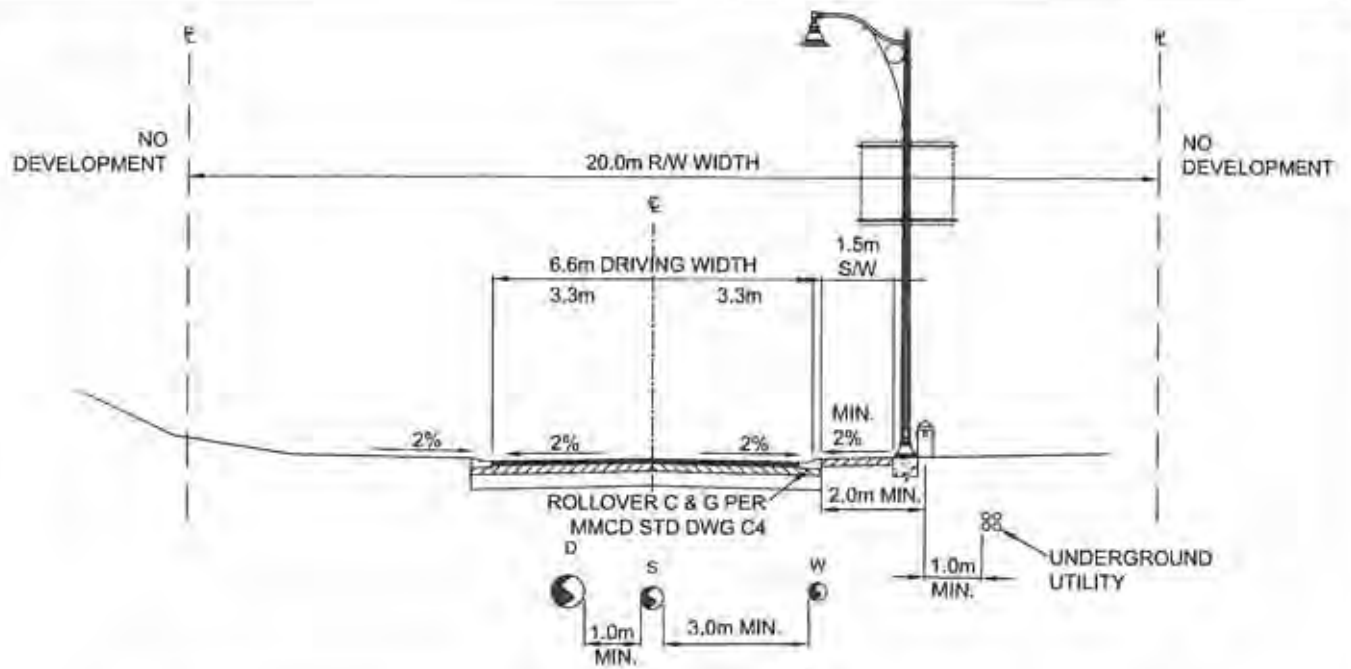



SQUAMISH

TITLE: **HILLSIDE STANDARD
 (DEVELOPMENT ONE
 OR BOTH SIDES)
 LOCAL STREET
 20.0m RIGHT OF WAY**

DISTRICT OF SQUAMISH
STANDARD ROAD CROSS SECTION

APPR.	DATE: 2015
SCALE: NTS	DWG. NO: SQ - R09



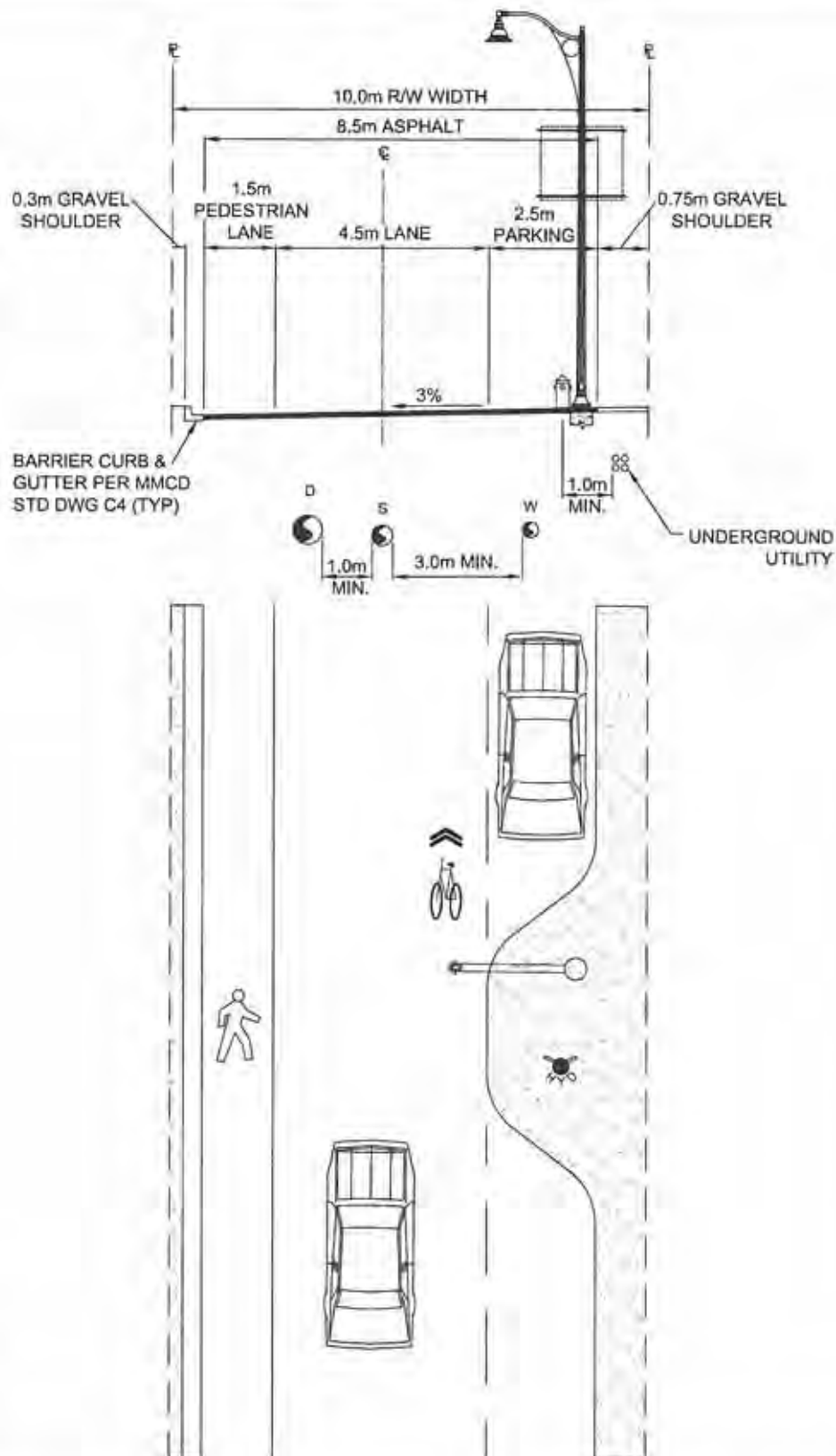
NOTES:
 DEPTH OF SERVICES ARE
 SCHEMATIC ONLY.
 ALL UTILITIES SHALL BE
 INSTALLED TO ACCOMMODATE
 ULTIMATE ROAD AND DRIVEWAY
 LOCATIONS.
 AT THE DISCRETION OF THE
 DISTRICT ENGINEER, THE
 LOCATION OF WORKS MAY BE
 VARIED WHERE WARRANTED BY
 TOPOGRAPHY OR PREVIOUS
 INSTALLATION OF OTHER
 WORKS.



TITLE:
 HILLSIDE STANDARD
 (NO DEVELOPMENT)
 LOCAL STREET
 20.0m RIGHT OF WAY

DISTRICT OF SQUAMISH
 STANDARD ROAD CROSS SECTION

APPR.	DATE: 2015
SCALE: NTS	DWG. NO: SQ - R10



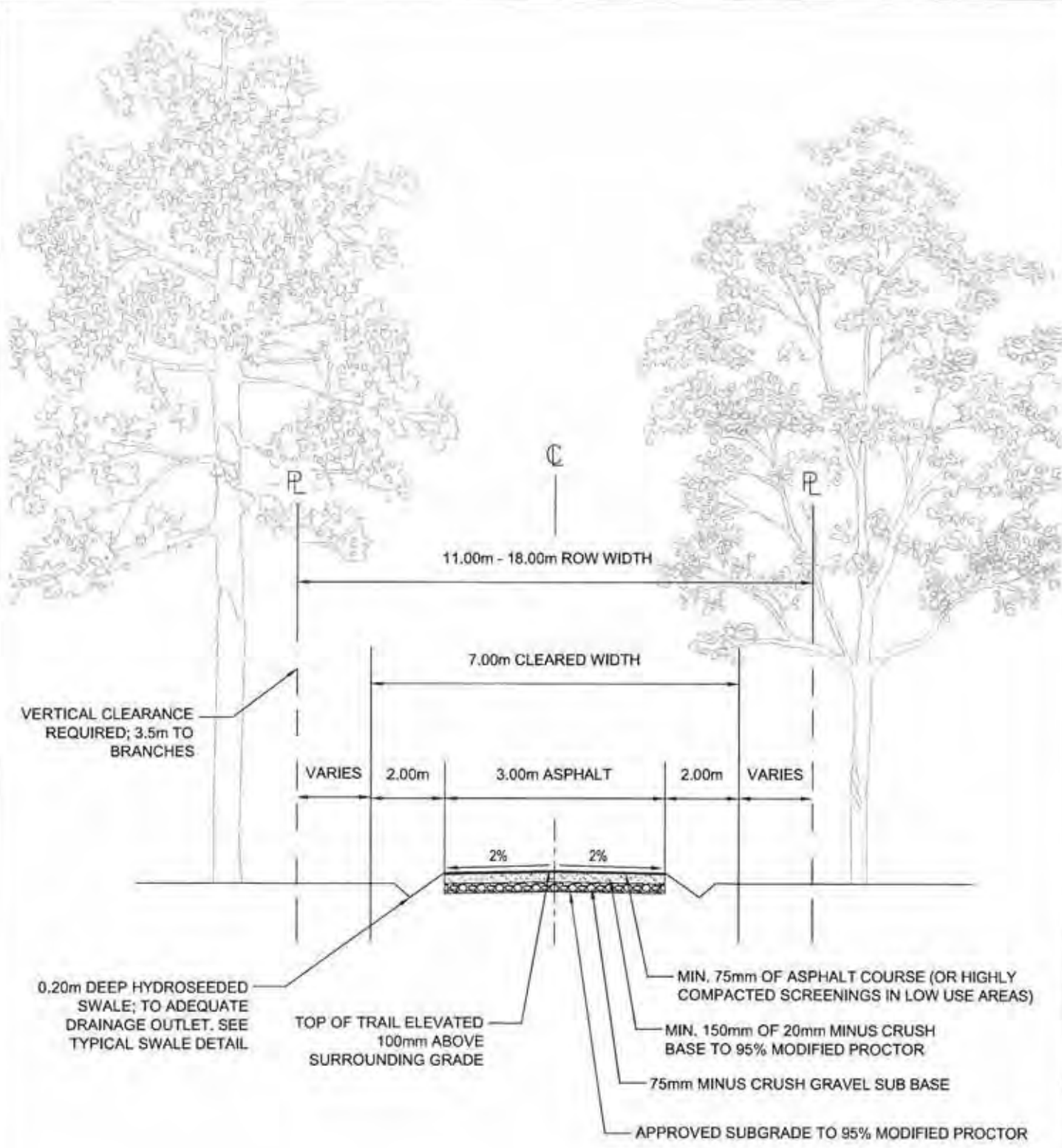
NOTES:
 DEPTH OF SERVICES ARE
 SCHEMATIC ONLY.
 ALL UTILITIES SHALL BE
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 ULTIMATE ROAD AND DRIVEWAY
 LOCATIONS.
 AT THE DISCRETION OF THE
 DISTRICT ENGINEER, THE
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 TOPOGRAPHY OR PREVIOUS
 INSTALLATION OF OTHER
 WORKS.



TITLE:
 ONE-WAY STREET
 10.0m RIGHT OF WAY

DISTRICT OF SQUAMISH
 STANDARD ROAD CROSS SECTION

APPR.	DATE: 2015
SCALE: NTS	DWG. NO: SQ - R11



TITLE:

PRIMARY/CORRIDOR TRAIL TYPICAL SECTION

DISTRICT OF SQUAMISH

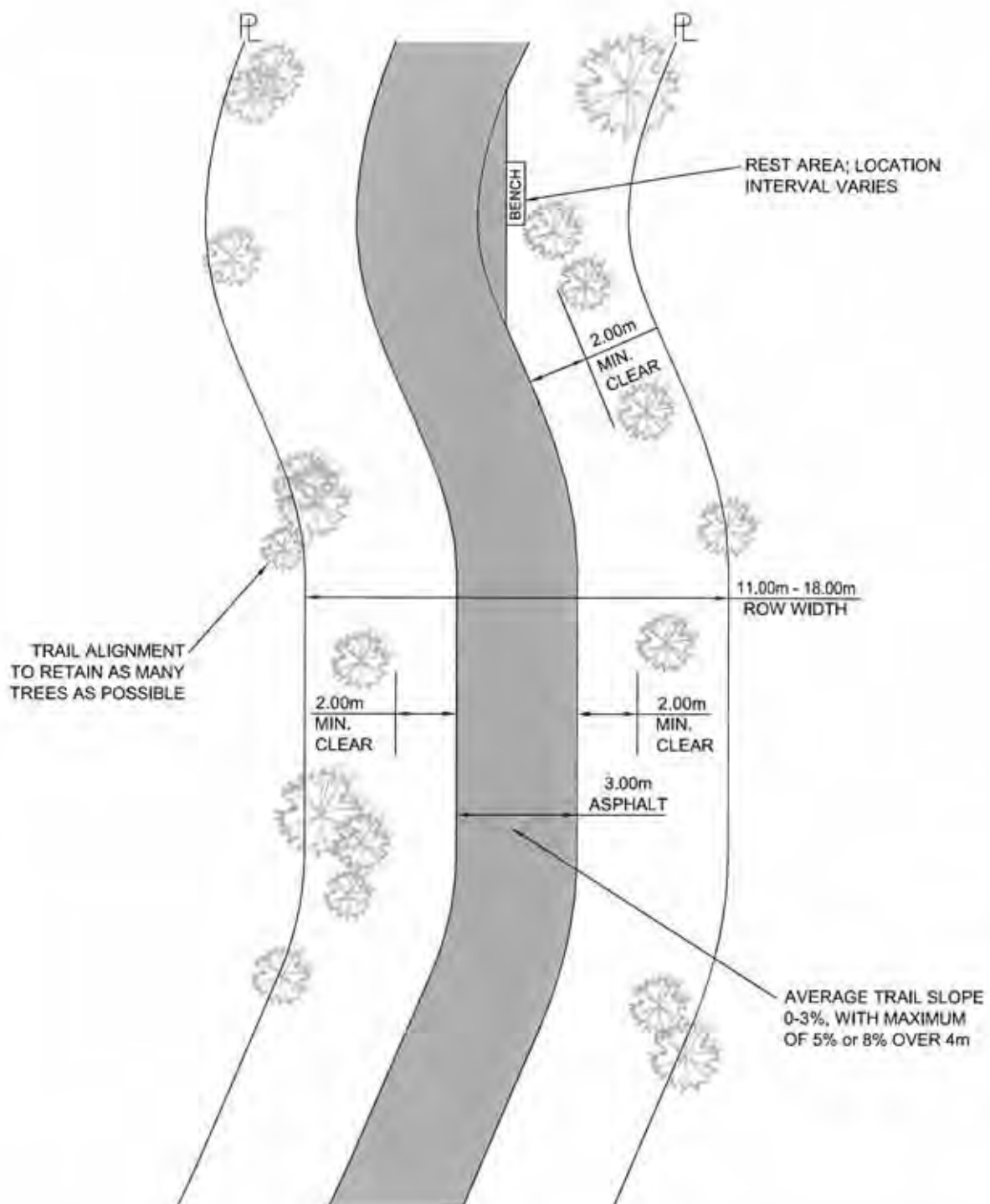
STANDARD TRAIL DETAIL

APPR.

DATE: 2015

SCALE: NTS

DWG. NO: SQ - R12



SQUAMISH

TITLE:

**PRIMARY/CORRIDOR TRAIL
TYPICAL PLAN**

DISTRICT OF SQUAMISH

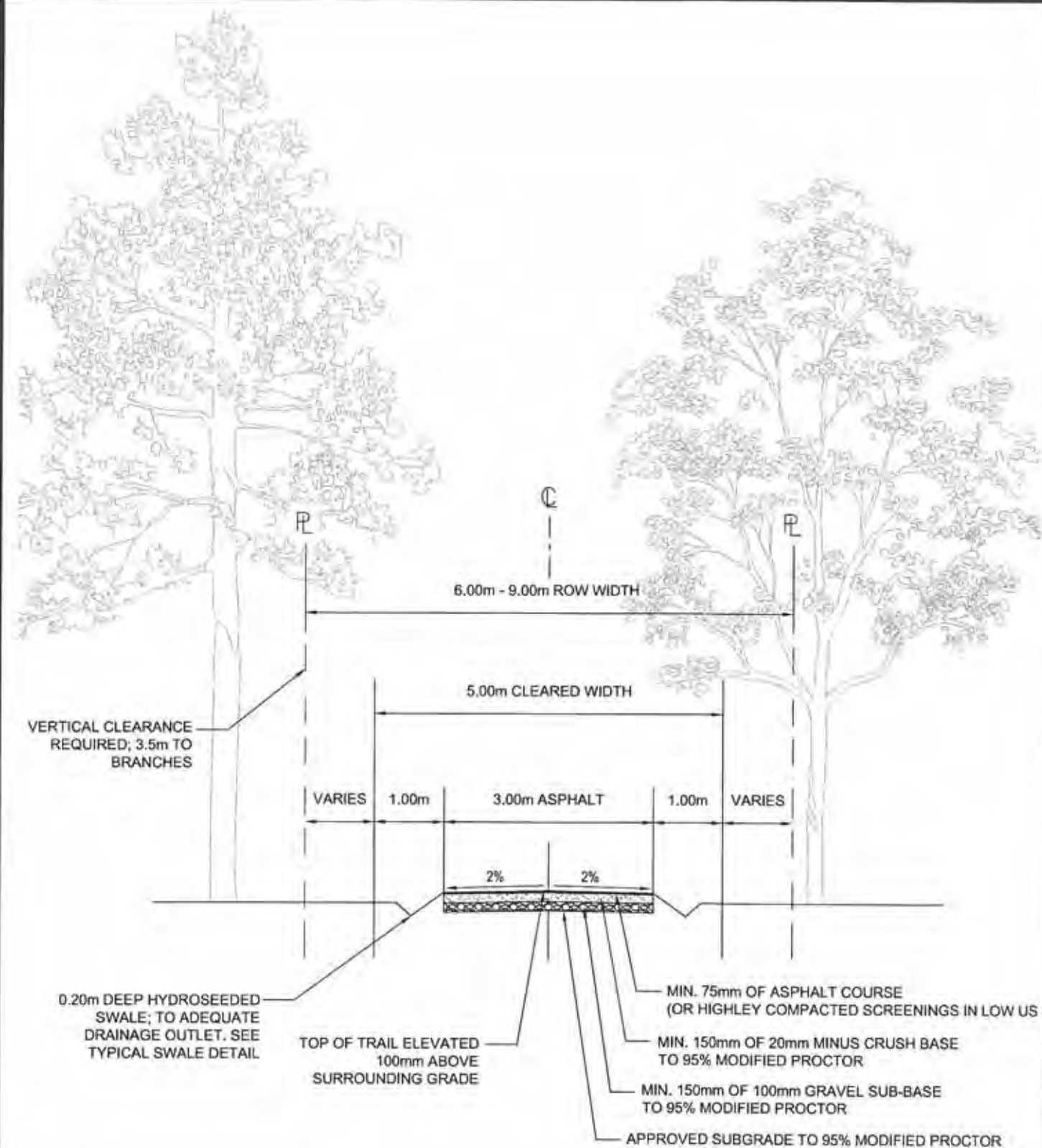
STANDARD TRAIL DETAIL

APPR.

DATE: **2015**

SCALE: NTS

DWG. NO: **SQ - R13**



TITLE:

AREA/COLLECTOR TRAIL
TYPICAL SECTION

DISTRICT OF SQUAMISH

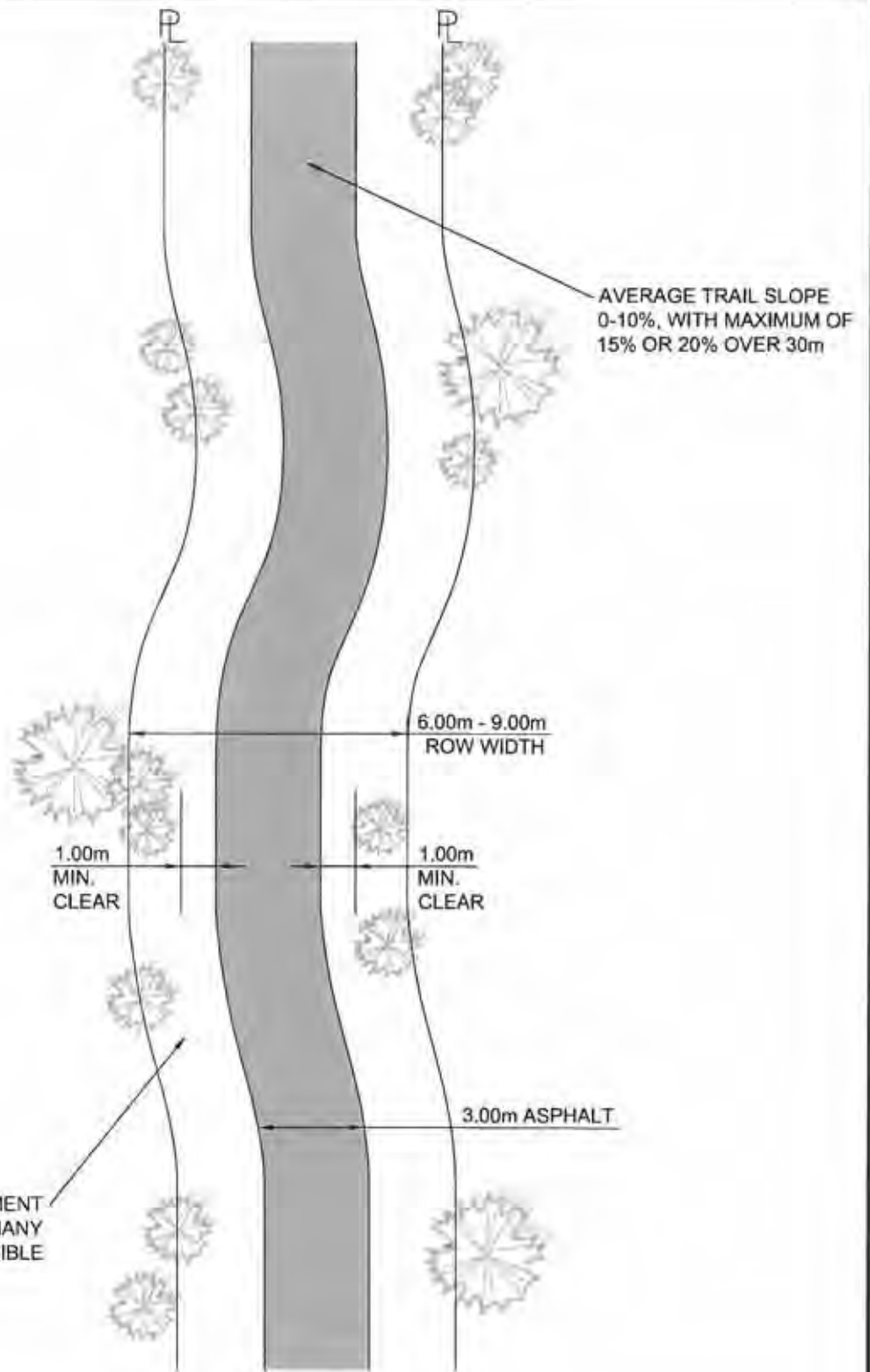
STANDARD TRAIL DETAIL

APPR.

DATE: 2015

SCALE: NTS

DWG. NO: SQ - R14



SQUAMISH

TITLE:

**AREA/COLLECTOR TRAIL
TYPICAL PLAN**

DISTRICT OF SQUAMISH

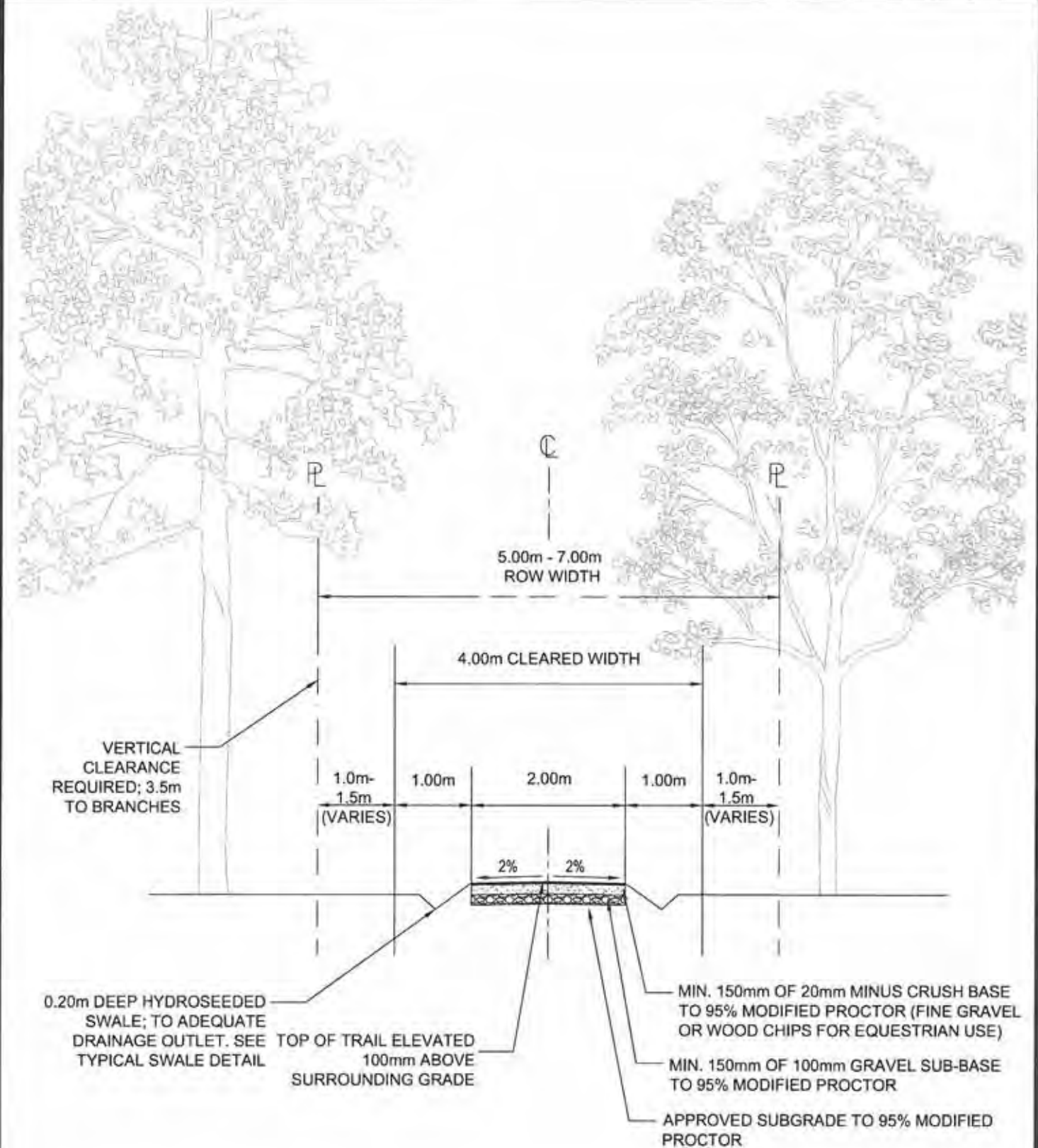
STANDARD TRAIL DETAIL

APPR.

DATE: **2015**

SCALE: NTS

DWG. NO: **SQ - R15**



TITLE:

NEIGHBOURHOOD TRAIL TYPICAL SECTION

DISTRICT OF SQUAMISH

STANDARD TRAIL DETAIL

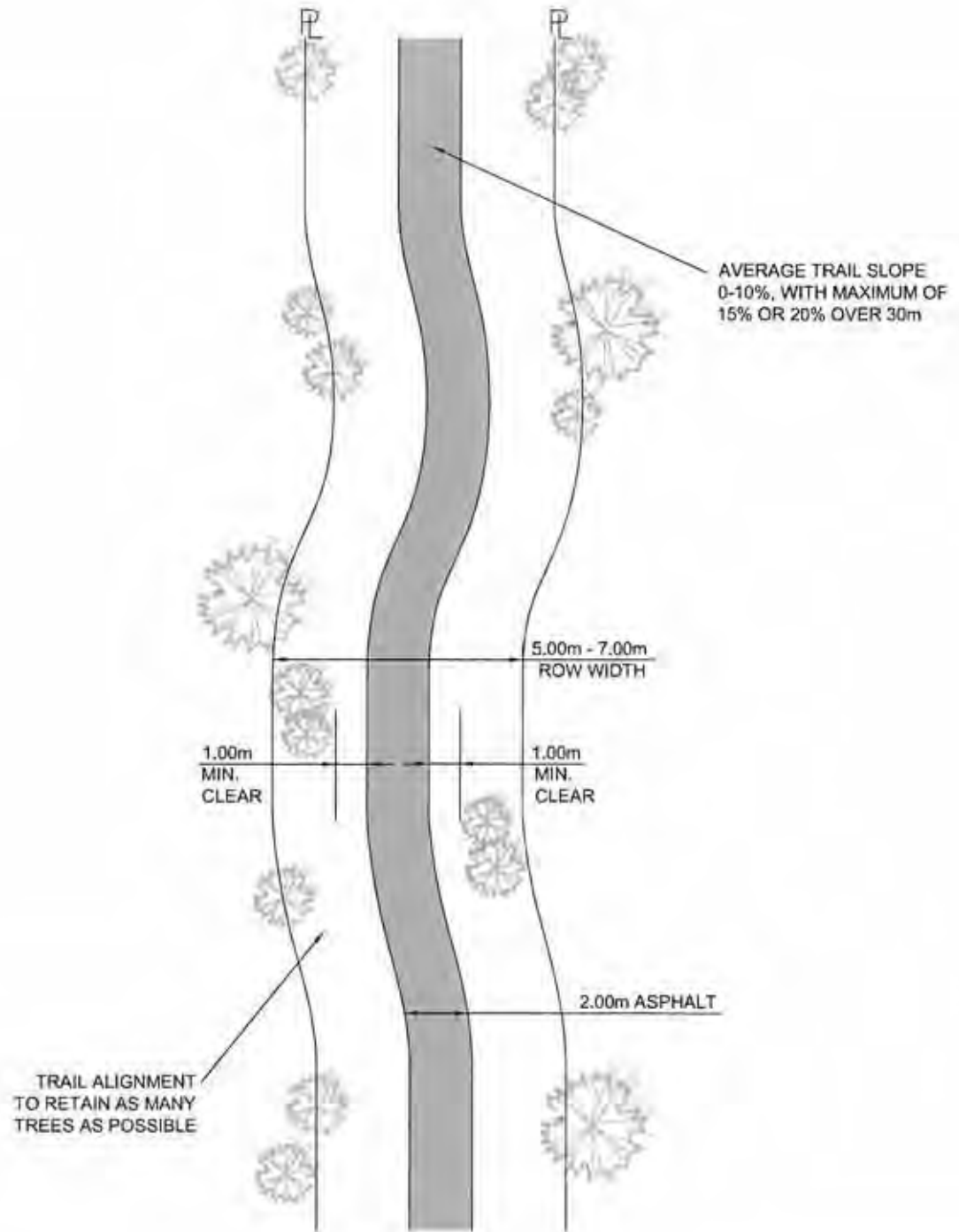
APPR.

DATE: 2015

SCALE: NTS

DWG. NO: SQ - R16

OPEN
JUNCTION
0m



SQUAMISH

TITLE:

NEIGHBOURHOOD TRAIL
TYPICAL PLAN

DISTRICT OF SQUAMISH

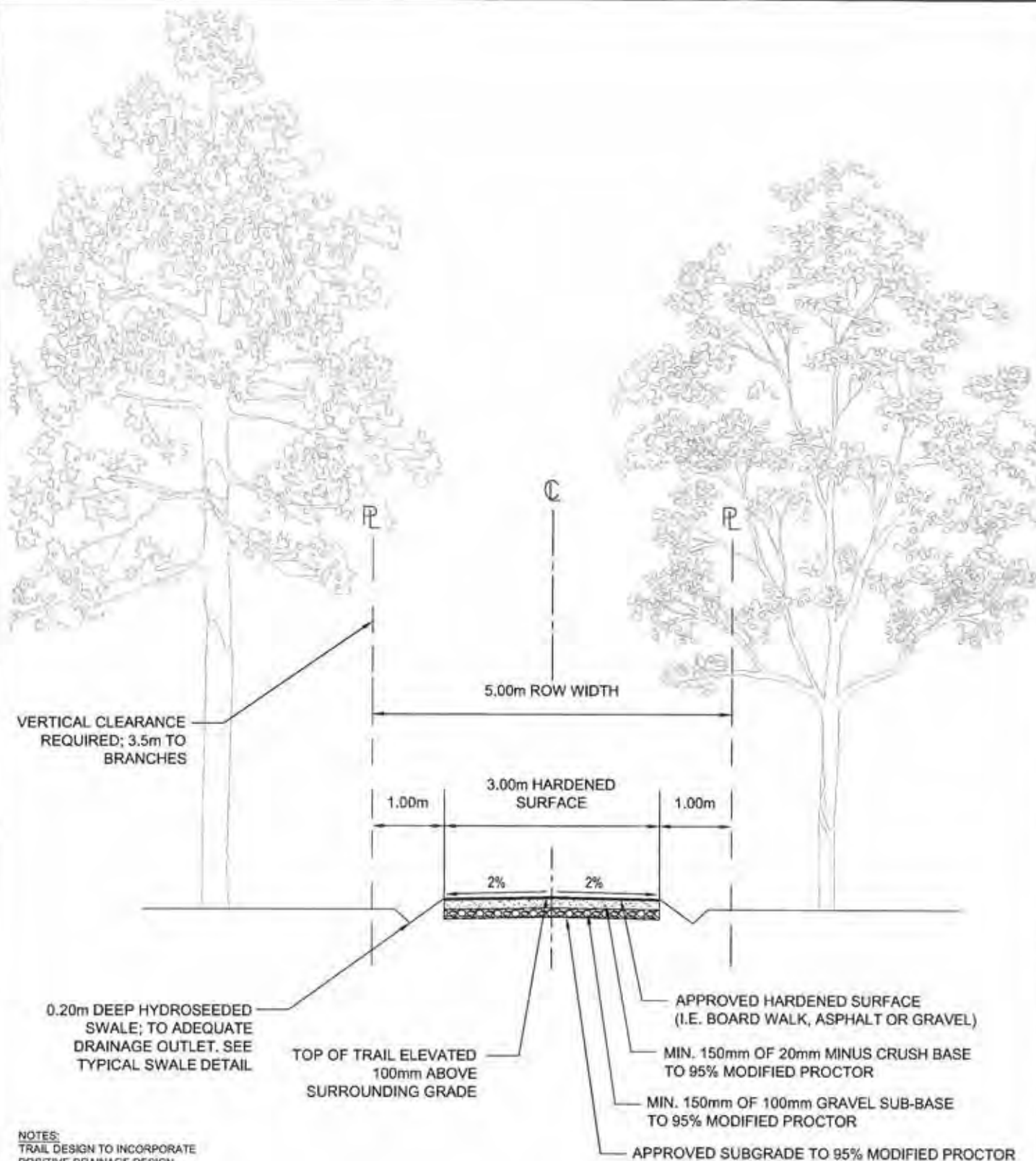
STANDARD TRAIL DETAIL

APPR.

DATE: 2015

SCALE: NTS

DWG. NO: SQ - R17



NOTES:
TRAIL DESIGN TO INCORPORATE
POSITIVE DRAINAGE DESIGN
FEATURES AND STORMWATER
SOURCE CONTROLS PER
SECTION 3.6 OF THIS BYLAW.



TITLE:

ENVIRONMENTALLY
SENSITIVE TRAIL
TYPICAL SECTION

DISTRICT OF SQUAMISH

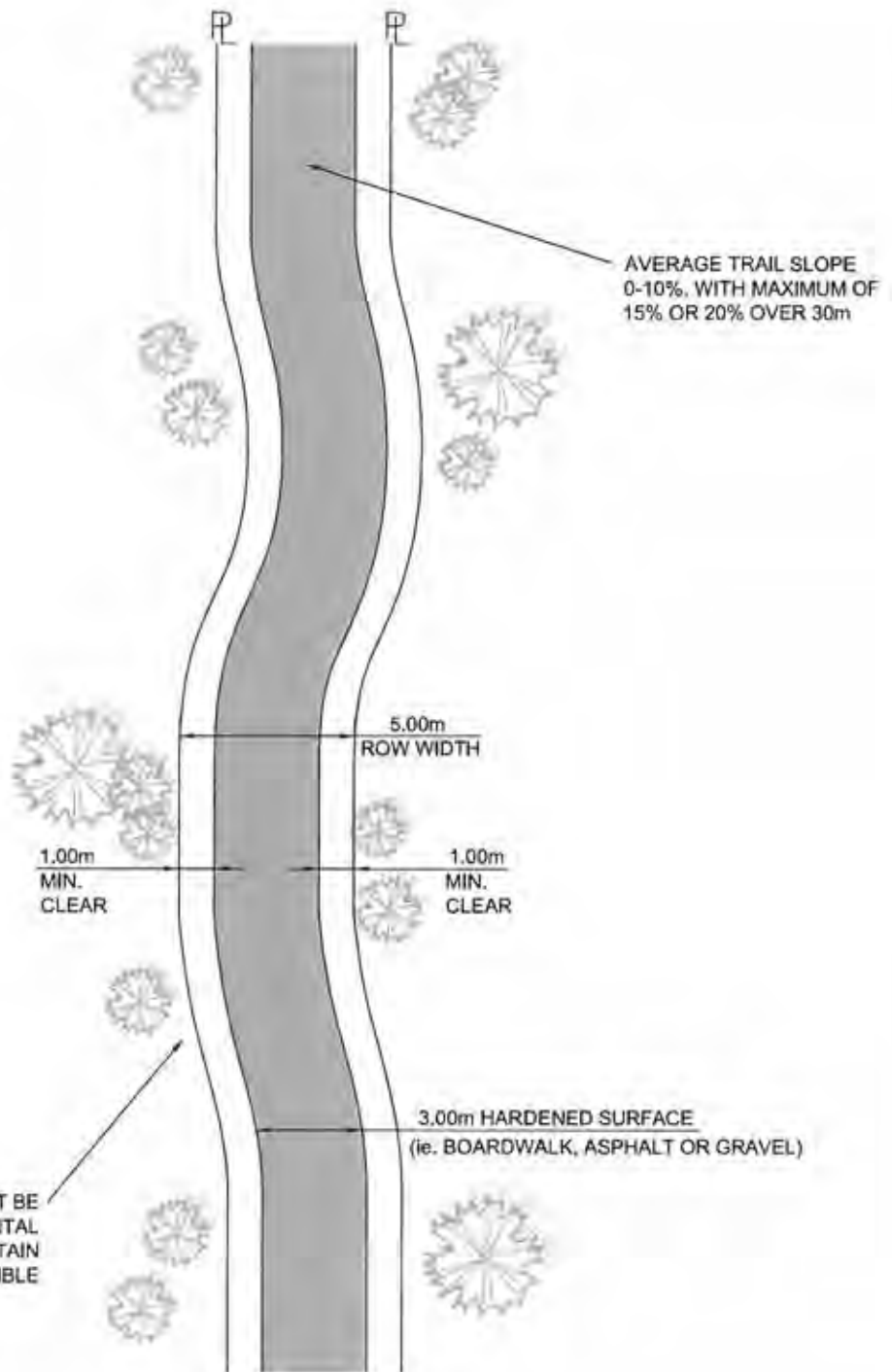
STANDARD TRAIL DETAIL

APPR.

DATE: 2015

SCALE: NTS

DWG. NO: SQ - R18



NOTES:
TRAIL DESIGN TO INCORPORATE
POSITIVE DRAINAGE DESIGN
FEATURES AND STORMWATER
SOURCE CONTROLS PER
SECTION 3.6 OF THIS BYLAW.



TITLE:

ENVIRONMENTALLY
SENSITIVE TRAIL
TYPICAL PLAN VIEW

DISTRICT OF SQUAMISH

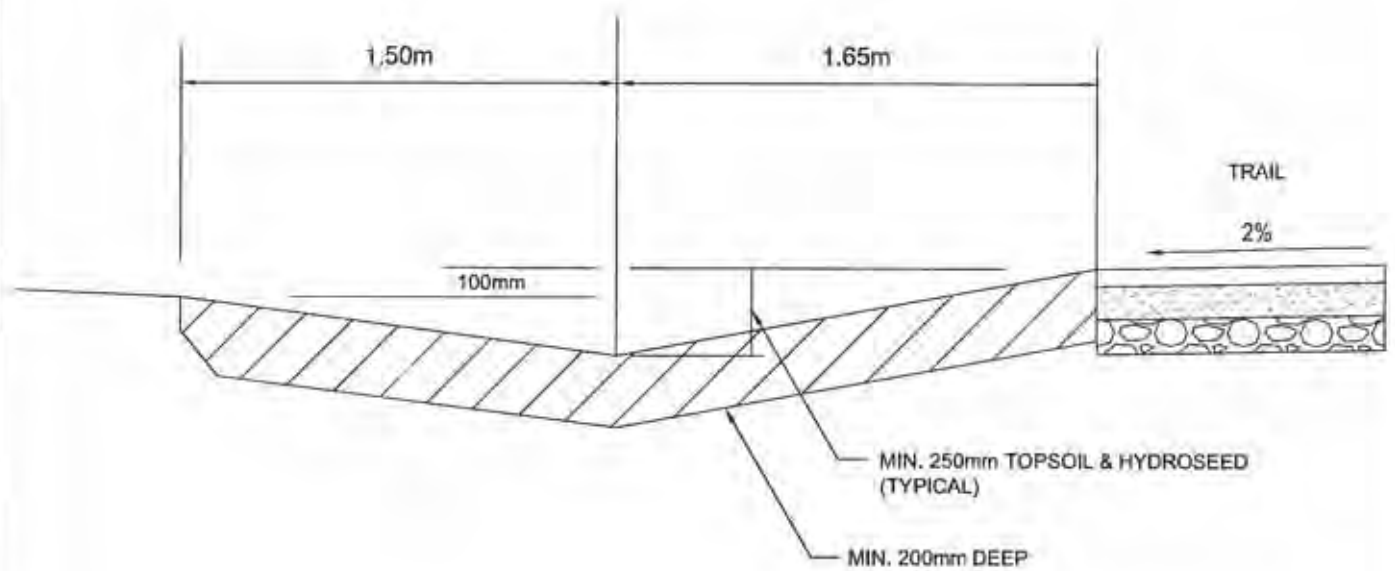
STANDARD TRAIL DETAIL

APPR.

DATE: 2015

SCALE: NTS

DWG. NO: SQ - R19



SQUAMISH

TITLE:

SWALE DETAIL
TYPICAL

DISTRICT OF SQUAMISH

STANDARD TRAIL DETAIL

APPR.

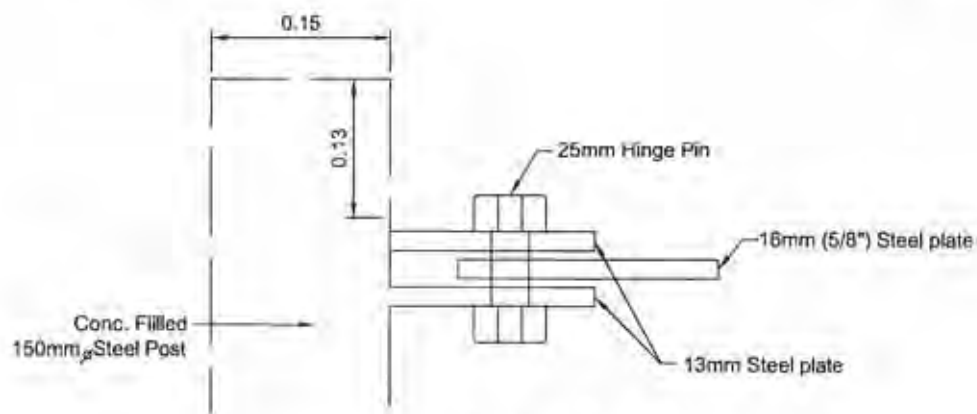
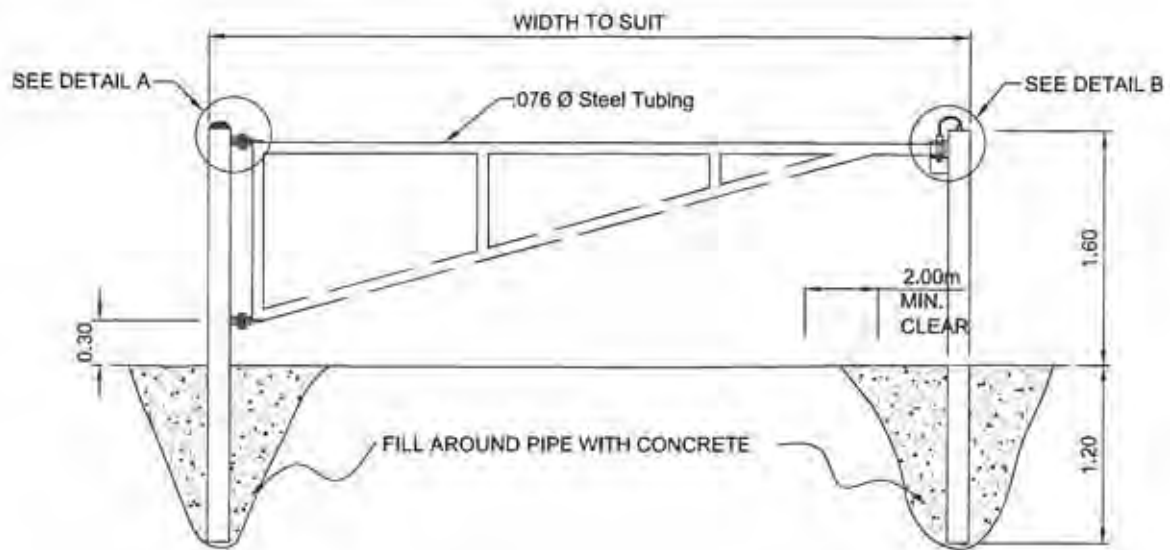
DATE: 2015

SCALE: NTS

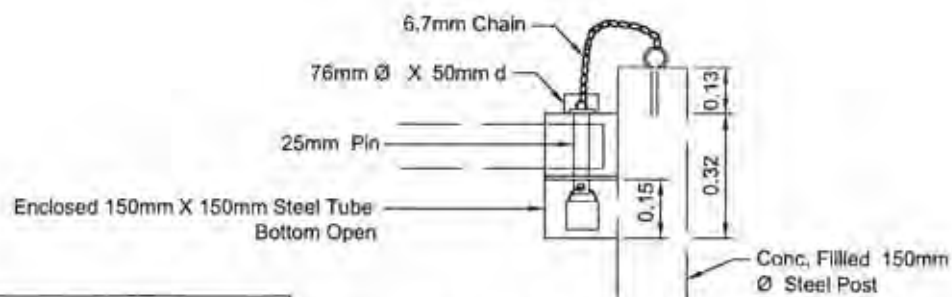
DWG. NO: SQ - R20

NOTE:

PAINT FRAME, POSTS AND ALL ATTACHMENTS WITH YELLOW TREMCLAD RUST PAINT OR APPROVED EQUIVALENT



DETAIL A



DETAIL B

All Dimensions Shown in Millimeters
Unless Otherwise Noted



TITLE

TYPICAL GATE

DISTRICT OF SQUAMISH

STANDARD DETAIL

APPRE

DATE: 2015

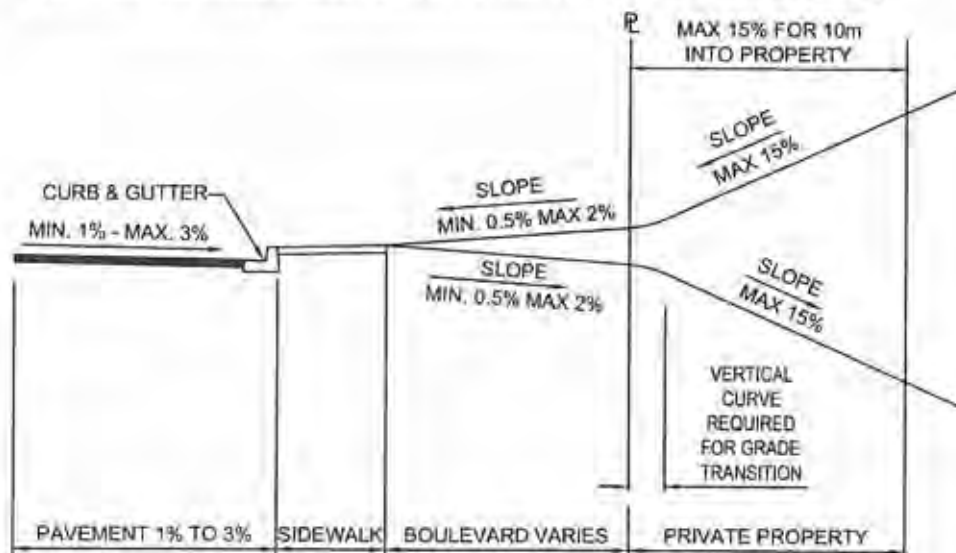
SCALE: MTS

DWC NO: SQ - R21

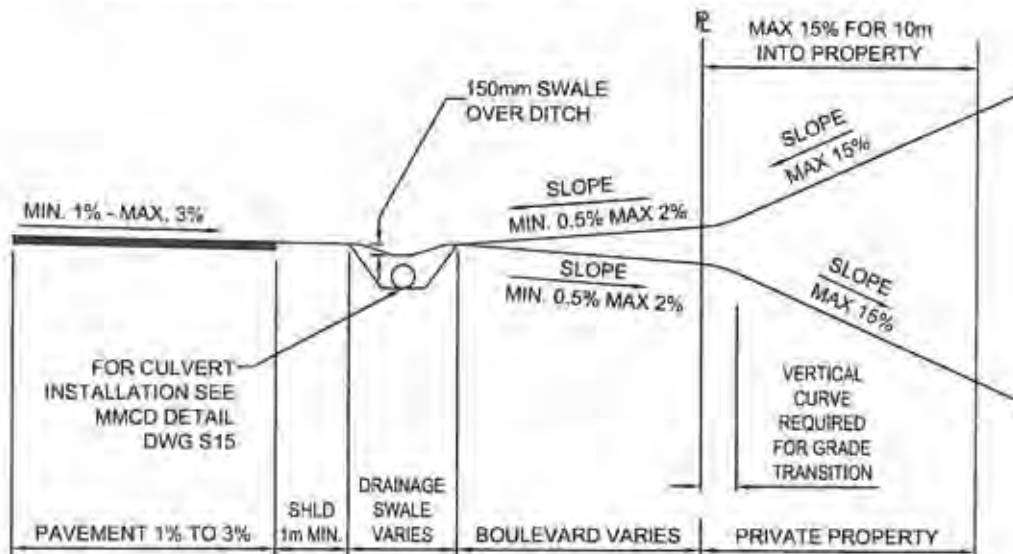
NOTES:

1. ALL DRIVEWAYS OVER 15% MUST BE CONSTRUCTED WITH A HARD SURFACE.
2. WHERE DRIVEWAY IS PAVED, USE A MINIMUM DEPTH OF 50mm ASPHALT OR EQUIVALENT HARD SURFACING.

URBAN DRIVEWAY CROSS SECTION WITH CURB/ GUTTER & SIDEWALK



DRIVEWAY CROSS SECTION WITH CURB/ GUTTER & SIDEWALK



NOTES:
DEPTH OF SERVICES ARE SCHEMATIC
ONLY.

ALL UTILITIES SHALL BE INSTALLED TO
ACCOMMODATE ULTIMATE ROAD AND
DRIVEWAY LOCATIONS.

AT THE DISCRETION OF THE DISTRICT
ENGINEER, THE LOCATION OF WORKS
MAY BE VARIED WHERE WARRANTED
BY TOPOGRAPHY OR PREVIOUS
INSTALLATION OF OTHER WORKS.



TITLE:

TYPICAL DRIVEWAY
CROSS SECTIONS

DISTRICT OF SQUAMISH

STANDARD DETAIL

APPR.

DATE: 2015

SCALE: NTS

DWG. NO: SQ - R22

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SCHEDULE D

SUBDIVISION AND DEVELOPMENT CONTROL BYLAW NO. 2373, 2015

SERVICING AGREEMENT

GENERAL

The appended Servicing Agreement template is typical of the agreement that will be executed between the District and the Developer for the work. The template will be amended from time to time as conditions warrant and will have specific amendments for each individual agreement prepared.

THIS AGREEMENT made this day of , 20xx

BETWEEN: District of Squamish, a District incorporated under the Local Government Act of British Columbia, and having its Municipal offices at PO Box 310, 37955 Second Avenue, Squamish BC V8B 0A3.

(hereinafter called the “District”)

AND:

(hereinafter called the “Developer”)

WHEREAS:

- A. The Developer is the registered Owner of lands within the District of Squamish in the Province of British Columbia, more particularly known and described as follows:

PID:

(hereinafter called the “Lands”)

- B. The Developer desires to subdivide the Lands or develop the Land;
- C. The Developer has requested approval of the building permit or development prior to the construction and installation of the Works and Services in their entirety and is agreeable to entering into this Agreement pursuant to the Local Government Act and the Developer will deposit the Security Deposit specified by this Agreement; and
- D. the Developer has voluntarily agreed to construct and install the Works and Services which are necessary to serve the proposed Development.

NOW THEREFORE THIS AGREEMENT WITNESSES that in consideration of the promises, covenants and agreements hereinafter set forth, the parties hereto covenant, agree, represent and promise as follows:

APPENDICES: 1. The following Appendices are attached to and form part of this Agreement:

- a) Appendix "A" – A list of the Works and Services and the Developer's Professional Engineer's estimate of their respective construction costs;
- b) Appendix "B" – Construction drawings to be used for the construction of the Works and Services;
- c) Appendix "C"- A copy of the subdivision plan of the Lands or of the Building Permit application;
- d) Appendix "D" – List of Section 219 Covenants.

DEVELOPER TO DO WORK:

1. The Developer acknowledges, covenants and agrees with the District:

- a) to construct, install and provide all the Works and Services listed and shown on Appendices A and B hereto, as approved by the District, in accordance with the standards contained in the District's Subdivision and Development Control Bylaw No. 2373, 2015 (hereinafter called the "Bylaw").
- b) that the Developer shall from time to time and at all times so long as it exercises any rights of ownership in the Lands upon the request of the District, and to the satisfaction of the District make, do and execute or cause or procure to be made, done and executed, all such further acts, deeds, rights-of-ways, covenants, easements and assurances in favour of the District as are required for the more effectual carrying out of this Agreement.
- c) that Appendices A and B identify and illustrate both 'On-Site Works and Services' and/or 'Off-Site Works and Services'.
- d) that the Developer relies exclusively on its own Professional Engineer, who shall be registered with the Association of Professional Engineers and Geoscientists of British Columbia (the "Professional Engineer"), contractors and staff, and that the District does not, by its approvals, inspections or acceptance of the Works and Services warrant or represent that the Works and Services are without fault or defect, and that all approvals and inspection

of the Works and Services given or made by the District are for the sole benefit of the District and shall in no way relieve or excuse the Developer from construction and installing the Works and Services in strict compliance with the provisions of this Agreement and the Subdivision Development Control Bylaw No. 2373, 2015.

TRANSFER OF INTEREST IN WORKS AND SERVICES:

2. The Developer covenants and agrees with the District to assign, transfer and convey to the District all of its rights, title and interest in the Works and Services on any and all of the Lands, upon or in which the Works and Services are situated, upon the completion of the Works and Services, (as witnessed by the issuance of a Certificate of Substantial Completion).

PERMISSION TO DO WORK:

3. The District covenants and agrees to permit the Developer to construct the Works and Services, on the terms and conditions herein, and in the manner required by and at the places specified in the Plans and Specifications in Appendix B; provided that nothing in this Agreement shall be construed as to make available the use of or access to the Works and Services for any purpose, and without limiting the foregoing, for the purpose of serving the Lands or any other real property whatsoever either Owner or controlled by the Developer or its associates or otherwise, but rather the District reserves the right in its sole and absolute discretion to make available, operate, alter, use, extend, diminish, discontinue, tear up, sell, rent or otherwise dispose of the Works and Services as its Council from time to time deems fit.

CHANGES TO THE LAW:

4. The Developer covenants and agrees to comply with any changes in subdivision requirements or standards enacted by Bylaw prior to the actual commencement upon the lands of the Works and Services Contemplated by this Agreement.

START OF WORK:

5. The Developer covenants and agrees not to commence work until the District Engineer provides the Developer with written permission to proceed with construction in the form provided in Schedule E of this Bylaw.

COMPLETION TO DO WORK:

6. The Developer shall complete the construction of the Works and Services, specified in Appendices "A" and "B" to the satisfaction of the District, within **one (1) year** from the date of this Agreement.

DEVELOPER TO GRANT RIGHTS OF WAY:

7. The Developer shall grant to the District all necessary road dedications, statutory rights-of-way and easements over the said Lands (in conformity with the District's standard form documents) to accommodate the said Works and Services and, where the said Works and Services are located upon or under privately owned lands other than the Lands, to obtain at the Developer's expense, all necessary road dedications, statutory rights-of-way and easements over such lands, in favour of the District where applicable, to accommodate the Works and Services, and to register the dedications, right of ways and easements in the Land Title Office.

DESIGN:

8. a) The Developer covenants and agrees that all Works and Services required herein shall be designed by a Professional Engineer, and retained by the Developer. Plans and Specifications for the Works and Services shall be prepared by or under the direct supervision of the Professional Engineer and all plans shall bear his professional seal and signature.

b) The Developer covenants and agrees to ensure that the Developer's Professional Engineer maintains professional liability and errors and omissions insurance to a minimum value of one million dollars (\$2,000,000) per occurrence, which insurance shall provide coverage in respect of any claims arising out of the Professional Engineer's services in connection with this Agreement regardless of when the claim is made. The professional liability insurance shall be provided for a duration of two years beyond the

date of substantial completion of the Works and Services. Written proof of coverage will be provided to the District upon request of the General Manager of Development Services and Public Works (the “General Manager”).

INSPECTION:

9. a) The Developer covenants and agrees to retain the Professional Engineer during the construction period for the purpose of on-site inspection to ensure compliance with the approved design and to provide certification of the construction documentation and Record Drawings of the Works and Services.

b) Further, the Developer's Professional Engineer and/or their appointed site inspector(s) shall visit the Place of the Work at intervals appropriate to the progress of construction to remain familiar with the progress and quality of the Works and Services and to determine if the Works and Services are proceeding in general conformance with the plans and specifications. The level of on-site inspection to be provided by the Developer's Professional Engineer shall be a minimum of 60% of the time the Developer's Contractors are carrying out on-site or off-site Works and Services.

c) The District, the Developer's Professional Engineer, their authorized representatives and /or their appointed site inspector(s), shall, at all reasonable times during the performance of the Works and Services, have access to the Works and Services, including any parts of the Works and Services that are in progress at locations other than where the Works and Services are being installed.

d) The District Engineer and the Developer's Professional Engineer and their representatives have the authority to reject Works and Services that, in their opinion, does not conform to the requirements of the Contract Documents (drawings and specifications).

ENGINEERING DRAWINGS:

- 10.a) The Developer covenants and agrees that the intent of this Agreement is that the Developer shall construct fully completed Works and Services, and grant all necessary dedications, rights of way and easements as shown in the

following plans and specifications prepared by the Developer's Professional Engineer:

Under Drawings Numbers:

<u>Drawing Number</u>	<u>Drawing Name</u>	<u>Revision #</u>
-----------------------	---------------------	-------------------

And as received for the purposes of this Agreement by the District on the xx day of, 20xx:

DESIGN CHANGES:

- 11.a) The Approving Officer, the General Manager or District's Engineer may alter the plans because of conditions on site so that the Works and Services function and operate in a manner satisfactory to the Approving Officer or District's Engineer. Should the Works and Services, as provided herein, prove to be in any way defective or should they not operate to the satisfaction of the Approving Officer, the General Manager or District's Engineer, then the Developer shall, at his own expense modify and reconstruct the Works and Services so that the works shall be fully operative and function to the satisfaction of the Approving Officer or District's Engineer.
- b) The Developer covenants and agrees that the Developer's Professional Engineer shall obtain the prior written approval of the General Manager for any changes to the design and specifications of the Works and Services set out in the Construction Drawings.
- c) All changes to the design drawings shall be submitted to the General Manager for review and approval in advance of completing revised Works and Services in the field. Drawings shall be revised and denoted with revision numbers and 'clouded' areas surrounding specific changes or revisions.
- d) In carrying out the Works and Services, the Developer covenants and agrees not to damage any of the District's works, services or property, or remove, alter, or destroy any survey pins, posts or monuments, and in default shall replace, repair and restore any damage of whatsoever nature to the satisfaction of the General Manager.

SUBSTANTIAL PERFORMANCE:

- 12.A Certificate of Substantial Performance shall be provided by the District's Engineer on the completion of the construction listing all the deficiencies. This certificate of Substantial Performance shall not be construed as acceptance of the Works and Services. Substantial Performance is defined by Master Municipal Construction Documents (MMCD).

CONSTRUCTION DOCUMENTATION AND RECORD DRAWING SUBMISSIONS:

- 13.The Developer covenants and agrees to submit to the District final Record Drawings, service connection cards and construction documentation, test results and digital asset management information, as accepted by the District's Engineer as identified in Schedule A, Section 2.7 of the Bylaw prior to issuing a Certificate of Substantial Performance.

MAINTENANCE PERIOD AND RESPONSIBILITY:

- 14.The Developer covenants and agrees to maintain every part of the Works and Services in good order and in complete repair for a period of one (1) year from the date shown on the Certificate of Substantial Performance (the "Maintenance Period").

Should the Developer fail to maintain the Works and Services, then the District's Engineer, at its option, after giving the Developer seven (7) days written notice (emergencies excepted), may do so, and the whole costs, charges and expenses so incurred by the District will be payable by the Developer, as provided for herein. The decision of the District's Engineer will be final with respect to the necessity for repairs, or the adequacy of any work done.

Once any Works and Services covered by this Agreement are connected to the District's infrastructure, only District crews or Contractors under the direct supervision of the District may undertake work on such District infrastructure. As such, District crews or contractors retained by the District may correct any defects, imperfections, settlements and/or re-chlorination and flushing which is deemed by the District's Engineer to be necessary during the one (1) year period from the date shown on the Certificate of Substantial Performance and the whole of such costs, charges and expenses so incurred by the District in

undertaking such work including but not limited to contractor costs will be payable by the Developer as provided for herein.

CERTIFICATES OF SUBSTANTIAL PERFORMANCE AND FINAL ACCEPTANCE:

- 15.a) The General Manager shall provide a Certificate of Substantial Performance to the Developer upon the Substantial Performance of the Works and Services. Substantial Performance shall only be approved when proper inspection of the Works and Services can be carried out, and when all work, as certified to the satisfaction of the District by the Developer's Professional Engineer upon the submission of a Certificate of Inspection and is capable of completion or correction at a cost of not more than:
- i. 3% of the first \$500,000 of the Total Construction Cost;
 - ii. 2% of the next \$500,000 of the Total Construction Cost;
 - iii. 1% of the balance of the Total Construction Cost.
- b) The date of the Certificate of Substantial Performance is the date of commencement of the Maintenance Period under Section 14 of this Agreement.
- c) Within the Maintenance Period the General Manager may provide a Certificate of Total Performance to the Developer provided that all the Works and Services and outstanding deficiencies identified in Sections 12 and 15.a (above) are completed to the satisfaction of the District upon the submission of a Certificate of Inspection by the Developer's Professional Engineer.
- d) The General Manager shall issue a Certificate of Final Acceptance upon the expiry of the Maintenance Period provided that all outstanding deficiencies identified by the General Manager with respect to the Off-Site Works and Services and On-Site Works and Services have been remedied and Record Drawings, service record cards, construction documentation and test results have been provided.
- e) On issuance of the Certificate of Final Acceptance and upon the expiration of the Maintenance Period, the Developer may apply to the District for discharge of this covenant, at their cost, by submitting the appropriate Form. The District will execute the discharge and return the Form to the Developer for deposit with the Registrar.

DEVELOPER INDEMNIFIES DISTRICT:

16. The Developer covenants and agrees to save harmless and effectually indemnify the District, its elected officials, officers and employees, contractors, agents, successors and assigns from and against:
- a) All actions and proceedings, costs, damages, expenses, claims and demands whatsoever and by whomsoever brought by reason of the construction, installation, maintenance or repair of the Works and Services provided by the Developer;
 - b) All expenses and costs which may be incurred by reason of the construction, installation, maintenance or repair of the Works and Services resulting in damage to any property owned in whole or in part by the District for which the District by duty or custom is obliged, directly or indirectly, in any way or to any degrees, to construct, install, maintain or repair;
 - c) All expenses and costs which may be incurred by reason of liens for non-payment of labour or materials, Workers Compensation, Unemployment Insurance Federal or Provincial tax, check-off or encroachments owing to mistakes in survey;
 - d) All expense and costs which may be incurred by the District as a result of faulty workmanship and defective material in any of the Works and Services installed by the Developer.
 - e) The above clauses shall not be construed as to extinguish any rights which the District would have were it not for the inclusion of Clause 16 in this Agreement.

INSURANCE BY DEVELOPER:

17. The Developer will at its sole expense throughout the term of this Agreement until the District has accepted the Works and Services under Clause 15(c) carry Comprehensive Liability Insurance acceptable to the District in the amount of at least Five Million Dollars (5,000,000.00) with insurance companies licensed to carry on business in the Province of British Columbia in partial discharge of its obligation under Clause 16 (a), (b), (c) and (d).

INSURANCE COVERAGE:

18. The Developer covenants and agrees to provide the following insurance coverage, and to provide the District with a copy of the insurance policy prior to the commencement of any construction of the Works and Services:

- a) To protect the Developer and the District against all claims arising out of:
 - i. Death or injury to persons; and
 - ii. Damage to or loss of, any property of third persons, including without limiting the foregoing; the following classes of property; Real property, chattels, land, works, buildings, structures, wires, boilers, and pressure vessels, conduits, pipes, mains, shafts, sewers, tunnels, and apparatus in connection therewith, even when the damage or loss of use is caused by vibration, moving, shoring, underpinning, raising, rebuilding or demolition of any building, structure or support, or by excavation, tunneling or other work below the surface of the ground or water; and
 - iii. damage to or loss of all building, structures, stores, equipment and materials included in or required to the carrying out of the Works and Services.
- b) Every policy of insurance required will:
 - i. Name "The District of Squamish" and its Contracted Employees as an additional insured; and
 - ii. State that the policy applies to each insured in the same manner and to the same extent as if a separate policy had been issued to each insured; and
 - iii. State that the policy cannot be cancelled, lapsed or materially changed without at least thirty (30) days written notice to the District, delivered to the District of Squamish Clerk.

SECURITY DEPOSIT:

19. As security for the due completion of the construction and installation of the Works and Services and the performance of all the covenants and promises contained in this Agreement, the Developer shall concurrently with the execution of this Agreement deposited 120% of estimated cost of the Works and Services, in the amount of \$ xxx.xx as determined by the cost estimate of the Professional Engineer and as attached as Appendix A, in the form of cash or an irrevocable and automatically renewing Letter of Credit acceptable to the District (herein called the "Security Deposit").

FORFEIT OF SECURITY:

20. In the event that the Developer fails to construct and install the Works and Services prescribed herein within the time specified in Clause 6, the Security Deposit will be forfeited to the District.

Should the District agree to an extension of the time required to complete the Works and Services, the District reserves the right to have the value of the Works and Services re-estimated, and the Security Deposit adjusted.

The Developer shall be deemed to be in default of this Agreement if the Developer files a voluntary petition of bankruptcy, or is adjudicated bankrupt or insolvent, or files any petition or answer seeking any reorganization, arrangement, liquidation, dissolution or similar under any enactment respecting bankruptcy, insolvency or other relief for debtors.

USE OF SECURITY DEPOSIT AND MAINTENANCE HOLDBACK:

21. If the Developer is in default of any of its obligations in respect to the construction and installation or maintenance of the Works and Services or any portion thereof, the District may draw down on the Security Deposit or the Maintenance Holdback, as the case may be, to secure completion or maintenance of all or a portion of the Works and Services in compliance with the terms of this Agreement and any payment obligations of the Developer in respect of the Works and Services that remain unpaid including the discharge of any builders' liens, and such monies shall be applied to remedy the default and complete all or any portion of the Works and Services and to satisfy the Developers warranties in respect of same in place and stead of the Developer and ensure compliance with the terms of this Agreement. In addition the District may cash, retain and use the Security Deposit to remedy any emergency condition which, in the sole opinion of the District Engineer, is associated with, arises from or is a result of the Works and Services and requires expedient action. Despite the foregoing, the District may cash, retain or use the Security Deposit or the Maintenance Holdback, as the case may be, to pay, settle or compromise any claim against the District for which the Developer indemnified the District pursuant to Clause 16. If the proceeds from the Security Deposit or the Maintenance Holdback, as the case may be, are not sufficient to pay all costs and expenses incurred by the District in completing or maintaining all or a portion of the Works and Services including the District's normal overhead charges and satisfying the warranties thereof,

curing other default by the Developer, or satisfying any amounts owing to the District pursuant to Clause 16, the Developer shall forthwith pay to the District the difference upon receipt from the District of invoices for the same together with all interest thereon at the commercial prime rate of interest plus two percent from the date of receipt by the Developer of the invoices for the same and continuing until payment in full. The amount required to be paid by the Developer is a debt owing to the District, and may be collected in the same manner as property taxes in arrears.

RELEASE OF SECURITY DEPOSIT, MAINTENANCE HOLDBACK:

22. If the District's Engineer is of the opinion that the Works and Services or any portion thereof have been adequately completed and the Developer's covenants performed in compliance with this Agreement, and if there is no litigation pending by any third party against the District as a result of, or arising from, the construction and installation of the Works and Services, the District's Engineer shall be authorized to return all, or any portion of the Security Deposit to the Developer at such times and in such amounts as he may deem proper but in no case shall be more frequently than once per month, provided that he will retain an amount equal to 10% of any released funds for a total of 10% of the total Security Deposit at the completion of the construction and installation of the Works and Services to secure the performance of the maintenance required for the Developer for the Maintenance Period (hereinafter called the "Maintenance Holdback").

RELEASE OF MAINTENANCE HOLDBACK:

23. Upon expiration of the Maintenance Period outlined in Clause 14 and provided that the District's Engineer is satisfied that the Developer has complied with the covenants contained in this agreement and if there is no litigation pending by any third party against the District as a result of, or arising from, the construction of the Works and Services, the District's Engineer be authorized to return the Maintenance Holdback to the Developer and thereafter the Developer's responsibility for the Works and Services shall cease.

INSPECTION AND ADMINISTRATION FEE:

24. The Developer covenants and agrees to pay to the District an Inspection and Administration non-refundable fee in the amount of \$ **xxx.xx** to cover District administration, inspection and processing costs. This fee is payable prior to the execution of this Agreement by the District and shall be calculated using a summation of the following and relative to the Security Deposit amount and in no case shall be less than \$2,500.00:

\$	% fee
1 to 100,000	5.50%
100,001 to 250,000	5.00%
250,001 to 500,000	4.50%
500,001 to 1,000,000	4.00%
Over 1,000,000	3.75%

NO OTHER REPRESENTATIONS:

25. It is understood and agreed that the District has made no representations, covenants, warranties, guarantees, promises or agreements (verbal or otherwise) with the Developer other than those in this agreement.

NO WAIVER:

26. The Developer covenants and agrees that nothing contained or implied herein shall prejudice or affect the rights and powers of the District in the exercise of its functions under any public and private statutes, bylaws, orders and regulations, of all which may be fully and effectively exercised in relation to the said Lands as if the Agreement had not been executed and delivered by the Developer.

SOLE COST:

27. Every obligation of the Developer under this Agreement shall be performed by the Developer at its sole cost.

TIME OF ESSENCE:

28. Time shall be of the essence of this Agreement.

SEVERABILITY:

29. If any section or portion of this Agreement is declared or held invalid for any reason, such invalidation shall not affect the validity of the remainder of that section or of this Agreement and this Agreement shall continue to be in force and effect and be construed as if it had been executed without the invalid portion.

SUCCESSION:

30. This Agreement shall enure to the benefit of and be binding upon the parties hereto, their successors and assigns.

FORCE MAJEURE:

31. All obligations of the parties shall be suspended so long as the performance of such obligations is prevented or hindered in whole or in part, by reason of labour dispute, fire, act of God, unusual delay by common carriers, earthquake, act of the elements, riot or civil commotion.

DISTRICT'S OPINION:

32. Any opinion which the District is entitled by virtue of this Agreement to form may be formed on behalf of the General Manager, in which event the opinion of the General Manager shall be deemed to be the opinion of the District for the purposes of this Agreement.

REFERENCE TO THE LANDS:

33. Any reference to the Lands shall be deemed to be a reference to each and every parcel comprising the Lands and any reference to the Developer shall be deemed to be a reference to the Developer or Developers of each

of the parcels comprising the Lands, all unless the context or the parties otherwise require.

NOTICE:

34. Any notice or other communication required or contemplated to be given or made by any provision of this Agreement shall be given or made in writing and either mailed by prepaid registered mail in any Canada Post Office in the Province of British Columbia (and if so shall be deemed to be delivered on the fourth business day following such mailing, except that in the event of interruption of mail service notice shall be deemed delivered only when actually received by the party to whom it is addressed), so long as the notice is addressed as follows:

To the Developer at:

To the District at: District of Squamish
PO Box 310, 37955 Second Avenue
Squamish BC V8B 0A3
Attn: General Manager of Corporate Services

or to such other address of which a party hereto from time to time notifies in writing the other party hereto.

As evidence of their agreement to be bound by the above terms, the parties each have executed and delivered this Agreement under seal by executing Part 1 of the Land Title Act Form C to which this Agreement is attached and which forms part of this Agreement.

WHENEVER the words “will” and “shall” are used in this Agreement it will be construed as imperative (mandatory).

WHENEVER the singular or the masculine is used in the Agreement it will be construed as meaning the plural or feminine or body corporate or politic where the context or the parties hereto so require.

THIS CONTRACT shall enure to the benefit of and be binding upon the parties hereto, their respective successors and assigns.

IN WITNESS WHEREOF the parties hereto have executed this contract the day and year first above written.

Please refer to Form C for signatories.

Signatory page if the servicing agreement with FORM C, D, E, is NOT being registered on title:

SIGNED, SEALED AND DELIVERED

DATE (MMM/DD/YYYY)

DEVELOPER / PROPERTY OWNER

LAWYER OR NOTARY

SIGNED, SEALED AND DELIVERED

The Corporate Seal of the District of Squamish was hereunto affixed
In the presence of:

GM OF DEVELOPMENT SERVICES
AND PUBLIC WORKS

DATE (MMM/DD/YYYY)

Appendix “A” – Cost Estimate

Appendix “B” – Site Servicing Design Drawings

<u>Drawing Number</u>	<u>Drawing Name</u>	<u>Revision #</u>
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Appendix “C” – Subdivision Plan

Appendix “D” – Section 219 Covenants to be registered on title

- Off-site storm drainage, including storm sewers, manholes, catch basins and lawn basins, piping and trenches, swales, outlets and erosion protection measures, and raised traffic island, road sightings and signage with asphalt paving included in the approved Construction Drawings;
- Environment area / Riparian zone setbacks.

END OF DOCUMENT

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SCHEDULE E

SUBDIVISION AND DEVELOPMENT CONTROL BYLAW NO. 2373, 2015

STANDARD FORMS

Schedule E-1 Permission to Construct

Schedule E-2 Certificate of Inspection

Schedule E-3 Certificate of Substantial Completion

Schedule E-4 Certificate of Total Performance

Schedule E-5 Final Acceptance Certificate

Schedule E-6 List of Inspections



DISTRICT OF SQUAMISH

PERMISSION TO CONSTRUCT

File No. _____

Authorization to proceed with construction is hereby granted to:

Name of Developer _____

Address _____

For the works described generally as:

Authorized Start Date _____

Completion Date _____

Authorized Hours of Work: From _____ hrs. to _____ hrs. Monday to Saturday inclusive.

Check the following: (all must be completed)

- _____

- Approved plans covering the works are attached.
 - Certificates of insurance are attached.
 - Administration fee has been paid.
 - Security deposit has been paid.
 - A Servicing Agreement has been completed – No. _____

Consultant: _____

Contact: _____

Phone No. _____ bus.

Special Conditions:

District Official's Approval



DISTRICT OF SQUAMISH

CERTIFICATE OF INSPECTION

I hereby certify that all engineering and construction services, required under the Subdivision and Development Control Bylaw of the District of Squamish for the subdivision of:

Legal Description: _____

Project No. _____

which services were designed by:

Name of Firm: _____

Address: _____

and approved for construction on drawing numbers:

drawing number

date

drawing number

date

Have been installed and inspected by or under the direction of:

I further certify that the "Record" drawings hereby submitted represent the works and services as installed for the aforementioned subdivision.

ENGINEER'S SEAL

Consulting Engineer
(signature and name of the Professional Engineer responsible for design)



DISTRICT OF SQUAMISH

CERTIFICATE OF SUBSTANTIAL PERFORMANCE

Developer: _____

Contractor: _____

Project No: _____

Servicing Agreement No: _____

Date: _____

This certificate is issued pursuant to Clause 12 and Clause 14 of Schedule D to the Subdivision and Development Control Bylaw.

The Maintenance Period for the Works will begin on _____

The Maintenance Period for the Works will end on _____

The attached is a List of Deficiencies related to the Works.

The Total Performance Certificate will be issued when all deficiencies have been cleared, the Maintenance Period expired, and the District Official has been satisfied all conditions of the Servicing Agreement have been fulfilled.

This Certificate has been made to the best of the District Official's knowledge, information and belief. It does not constitute acceptance of any Work not in accordance with the requirement of the Subdivision and Development Control Bylaw, and not listed as a deficiency herein, whether or not such defect(s) could have been observed or discovered during construction.

Cc: Contractor

District Official's Approval



DISTRICT OF SQUAMISH

CERTIFICATE OF TOTAL PERFORMANCE

Date: _____

Owner: _____

Consulting Engineer: _____

Dear Sirs:

Re: _____

This is to certify that to the best of our knowledge all works and services in connection with the above noted project were completed as of _____ in accordance with the approved engineering and record drawings including inspections, testing, and acceptance as per Subdivision and Development Control Bylaw.

This does not exempt the Owner from any further requirements or agreement responsibilities which may come to the knowledge of the District during the one year Maintenance Period.

Based on the above Total Performance date, the Maintenance Period shall extend to _____ and the Maintenance Holdback in the amount of \$_____ will be confirmed for release on this date, in compliance with issuance of a Final Acceptance Certificate.

Consulting Engineer

ENGINEER'S SEAL

District Official's Approval



DISTRICT OF SQUAMISH

FINAL ACCEPTANCE CERTIFICATE

Date: _____

Owner: _____

Consulting Engineer: _____

Contractor: _____

Dear Sirs:

Re: _____

This is to certify that to the best of our knowledge all works and services in connection with the above noted project achieved Final Acceptance as of _____.

Based on the above date, it is recommended that the District accept the works and services and release the Maintenance Holdback in the amount of \$ _____.

Consulting Engineer

ENGINEER'S SEAL

District Official's Approval

Schedule E-6



DISTRICT OF SQUAMISH - Inspection List – Sign-Off

Inspection requirements to include:

- Regular and appropriate level of inspection;
- That District staff be permitted to attend the site to independently view and inspect the quality and progression of the works;
- Take samples of all imported granular materials (pipe / zone / bedding, pit run gravels for replacement compacted back fill, sub-base and base course gravels) be sampled, tested and reported by the Engineer or Contractor (and paid for by the Developer) for gradation limits in comparison to MMCD specs and District Engineering and SD&C bylaw standards;
- All materials requiring compaction in the design or as specified in MMCD and District standards shall be tested as arranged by the Engineer or the Contractor or a Geotechnical Engineer (and paid for by the Developer) for compliance to compaction specifications found in the design requirements and/or MMDC specifications;
- Daily engineering inspection reports be compiled by the Professional Engineer and copies be made available to the District Engineer on a weekly basis;
- All QA / QC material and compaction test results be collected and reviewed by the Professional Engineer for completeness and copies be made available to the District Engineer on a weekly basis;
- The watermain is to be flushed, pressure tested and disinfected in accordance with AWWA and MMCD/District standards and specifications before use – all written pressure test results and documentation of bacterial sampling/testing be provided to the District Engineer;
- Conduct final inspections with the participation of District Engineering and Operations rep.

Project Number with Project Location: _____

Date of inspection: _____

Consulting Engineer

ENGINEER'S SEAL

District Official's Approval

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SCHEDULE F

SUBDIVISION AND DEVELOPMENT CONTROL BYLAW NO. 2373, 2015

STREET TREES

District of Squamish

RECOMMENDED STREET TREES

March 25, 2015

Notes:

- 1 *Tree selection should match available space and respond to site constraints. Some species identified below have varieties that are not shown that would be appropriate for narrow boulevards or proximity to utilities.*
- 2 *Other tree species will be accepted upon consideration.*
- 3 *Most conifer trees are not recommended due to sight clearance problems and root system requirements. Exceptions may be made for extremely wide boulevards, parkways or ample root-system spaces.*

	Botanical name	Common name	Suggested varieties	Ht.(m)	Wd.(m)	Tree Form
1	Acer griseum	Paperbark Maple		8	8	oval, rounded
2	Acer platanoides	Norway Maple	Crimson King, Superform, Emerald Queen, Columnar	20	5 - 18 (varies)	rounded, oval, fastigate (varies)
3	Acer rubrum	Red Maple	Red Sunset, Autumn Blaze, Bowhall, October Glory, Scarlet Sentinel, Morgan, Armstrong	18	4 - 15 (varies)	pyramidal, oval, fastigate (varies)
4	Acer truncatum x 'Warrenred'	Pacific Sunset maple		9	8	upright, rounded
5	Carpinus betulus	Hornbeam	Fastigiata, Franz Fontaine	12	12	pyramidal, columnar
6	Cercidiphyllum japonicum	Katsura Tree	Pendulum	18	12	oval, rounded, umbrella
7	Cladrastis lutea	Yellowwood		15	12	rounded, umbrella
8	Cornus kousa	Dogwood	Satomi, Nuttali Eddie's White Wonder	10	6	rounded, umbrella, vase
9	Davidia involucrata	Dove Tree		18	10	oval

District of Squamish
Subdivision and Development Control Bylaw No. 2373

	Botanical name	Common name	Suggested varieties	Ht.(m)	Wd.(m)	Tree Form
10	<i>Fagus sylvatica</i> 'fastigiata'	European Beech	Dawyck Purple, Dawyck Gold	25	20	columnar, fastigate
11	<i>Fraxinus excelsior</i>	European ash		20	15	oval, rounded
12	<i>Ginkgo biloba</i>	Maidenhair tree	Autumn Gold, Princeton Sentry, Fairmount, Saratoga	25	5 - 15 (varies)	pyramidal, columnar
13	<i>Liquidambar styraciflua</i>	Sweetgum	Worplesdon	14	9	pyramidal
14	<i>Liriodendron chinensis</i>	Chinese Tulip Tree		25	12	pyramidal
15	<i>Liriodendron tulipifera</i>	Tulip Tree	Fastigiatum	24	13	oval, fastigate
16	<i>Magnolia</i> x 'Galaxy'	Galaxy magnolia		12	8	pyramidal
17	<i>Magnolia grandiflora</i>	Southern magnolia	Edith Bogue, Victoria	15	7	oval, rounded, umbrella
18	<i>Magnolia kobus</i>	Kobus Magnolia	Wada's Memory	9	6	rounded
19	<i>Magnolia</i> x 'Vulcan'	Vulcan magnolia		7	3	rounded
20	<i>Parrotia persica</i>	Persian ironwood	Vanessa, Ruby Vase	9	9	oval
21	<i>Platanus</i> x <i>acerifolia</i>	London Planetree	Bloodgood, Liberty	15	12	oval, rounded, umbrella
22	<i>Prunus serrulata</i>	Japanese cherry	Kanzan	8	8	umbrella, rounded
23	<i>Prunus</i> x <i>yedoensis</i>	Ornamental cherry	Akebono, Yoshino	7	7	rounded, umbrella, vase
24	<i>Pyrus calleryana</i>	Ornamental pear	Aristocrat, Cleveland Select, Capital, Autumn Blaze	9	6	oval, rounded
25	<i>Quercus coccinea</i>	Scarlet Oak		23	14	oval, rounded, umbrella
26	<i>Quercus palustris</i>	Pin Oak	Crownright	16	12	pyramidal, rounded, umbrella
27	<i>Quercus phellos</i>	Willow Oak		20	12	rounded
28	<i>Quercus robur</i>	Fastigate	Fastigiata	18	8	columnar,

District of Squamish
Subdivision and Development Control Bylaw No. 2373

		English Oak				fastigiated
	Botanical name	Common name	Suggested varieties	Ht.(m)	Wd.(m)	Tree Form
29	Quercus rubra	Red Oak	Aurea	18	16	oval, rounded, umbrella
30	Stewartia pseudocamellia	Japanese Stewartia		12	10	pyramidal
31	Styrax japonica	Japanese snowbell tree		9	9	rounded
32	Syringa reticulata	Japanese tree lilac	Ivory Silk	9	7	oval, rounded
33	Tilia cordata	Littleleaf Linden	Greenspire	15	10	pyramidal, oval, umbrella
34	Tilia tomentosa	Silver Linden		18	12	oval
35	Zelkova serrata	Japanese Zelkova	Green Vase, Village Green	25	18	rounded, umbrella
36	Nyssa Sylvatica	Black Tupelo		35	20	pyramidal

SCHEDULE G

SUBDIVISION AND DEVELOPMENT CONTROL BYLAW NO. 2373, 2015

APPROVED PRODUCTS LIST

1.0 Approval

- .1 This Approved Products List was revised and approved by the District Engineer to supersede all previous oral and written approvals and all lists of an earlier date.
- .2 Subject to the restrictions contained herein, materials and products named in this List are approved for use in the District of Squamish.
- .3 In the context of this Section, a product is approved when the vendor obtains a letter from the District Engineer stating that such product is approved for use in the District of Squamish, and that the name of the product is entered into the Approved Products List.
- .4 Where brand names are specified for a product, any proposal for an alternate product requires the approval of the District Engineer.
- .5 A product is acceptable when it meets all the requirements stipulated in the MMCD. It refers to a “generic” product which may be incorporated into the works without specific approval. Names of “generic” products are not entered into the Approved Products List.

2.0 Exclusions

- .1 This List contains products which are specifically excluded by the District Engineer for use in the District of Squamish, even though such products may be listed as approved in MMCD.
- .2 Unless specifically excluded by the District Engineer, all approved products listed in MMCD are acceptable for use in the District of Squamish subject to the restrictions on use as listed.

3.0 Revisions

- .1 The District Engineer may revise this list at any time without prior notice by adding or removing listed products or by making any other changes to the specifications or restrictions.

4.0 List of Approved Materials and Products

Generic = Acceptable products meeting specifications but not specifically approved by name.

District of Squamish
Subdivision and Development Control Bylaw No. 2373

Product	Specifications MMCD Section	Approved Material Type	Approved Product	Comments
WATERMAIN				
Water Main	33 11 01 2.2	Ductile Iron PVC Steel Welded Steel HDPE	"Generic"	No HDPE
Water Fittings	33 11 01 2.2.4	Cast Iron Ductile Iron Compact Ductile Iron	"Generic"	5 degree PVC C900 Pressure Class 235 approved. No other PVC Fittings for mainline water mains.
Water Service	33 11 01 2.5.1	Polyethylene Class 160, Type K copper	Annealed copper, Municipex	No polybutylene pipe.
Gate Valves	33 11 01 2.3.2		Canada Valve Clow resilient seat Mueller solid wedge and resilient seat Terminal City	All direct bury mainline valves shall be gate valves.
Butterfly Valve	33 11 01 2.3.3		Mueller Pratt	Butterfly valve not to be used unless approved the District Engineer for specific installations only.
Blowoff Valve	33 11 01 2.3.4		To be approved by the District	
Air Valve	33 11 01 2.3.5		Apco GA Valvmatic ARI	Combination air valves only.
Hydrant	33 11 01 2.6		Canada Valve Terminal City C71P Mueller	All hydrants shall be equipped with 100mm quick connect "Storz" Nozzle and cap at pumper outlet.
Corporation Stop	33 11 01 2.7.2	Full port ball valve	Ford McDonald Mueller Cambridge	Up to 50 mm only. Use mainline gate valve for larger sizes.
Curb Stop	33 11 01 2.7.3	Full port ball valve	Ford McDonald Mueller Cambridge	Up to 50 mm only. Use mainline gate valve for larger sizes. No cylinder type.

District of Squamish
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Product	Specifications MMCD Section	Approved Material Type	Approved Product	Comments
Coupling	33 11 01 2.2.3.12	Plain end	CAN-PAC COB Dresser 38 or 162 Robar Romac Hymax	No repair clamp allowed.
		Flanged	Dresser 128 Robar Romac Hymax	
Joint Restrainer	33 11 01 2.2.3.13		Uni-Flange Series 1300, 1350, 1390, 1300C, 1390C	No set-screw type for PVC pipes. Pre-approval required from the District Engineer for specific installations only.
Joint Protection Tape	Bylaw Schedule B Section 3.0	AWWA C214 AWWA C209 AWWA C217-90	Trenton Tec Tape Denso Tape HDPE Shrink wrap	To be used when minimum clearance with a sewer cannot be achieved.
Saddle	33 11 01 2.5.3	For PVC	Canpac SC-2 Robar 2506DS Robar 2706DS Romac	
Saddle	33 11 01 2.5.3	For DI Pipe	Campac 313 Robar 2408	
Test Point	33 11 01 2.7.1		Eclipse #88 Sampling Station	Permanent Test point
Water Valve Box	33 11 01 2.3.6		ACS 0-7 Dobney 0-5 K Casting 1977 Terminal City UIF 85 Mr10	Nelson type. Cover marked "WATER".
Curb Stop Box	33 11 01 2.3.7		Daigle Dobney 0-10 Mueller A-726 Mueller A-728 Terminal City Trojan VSB1, 2	Nelson type. Cover marked "WATER"
Bolt and Nut	33 11 01 2.2.3.9	Zinc plated Cadmium plated	"Generic"	
Tie Rod	33 11 01 2.2.3.10	Zinc plated Cadmium plated	"Generic"	

District of Squamish
Subdivision and Development Control Bylaw No. 2373

Product	Specifications MMCD Section	Approved Material Type	Approved Product	Comments
STORM SEWERS				
Storm Sewer	33 42 13 2.0	Concrete pipe, PVC Pipe DR35, HDPE; PVC Profile Pipe	"Generic" KWH Weholite	
Storm Service Connection	33 40 01 2.6	PVC DR28	"Generic"	
PIPE CULVERTS				
Pipe Culverts -road crossings	33 42 13 2.0	Concrete Pipe, PVC Pipe DR35 HDPE PVC Profile Pipe	"Generic" KWH Weholite	No Corrugated Steel Pipe
Pipe Culverts -driveways	33 42 13 2.0	PVC Pipe DR35 PVC Profile Pipe	"Generic"	No HDPE or Corrugated Steel Pipe
SANITARY SEWERS				
Sanitary Sewer	33 30 01 2.0	Concrete Pipe, PVC Pipe DR35	"Generic"	No PVC profile pipe
Sanitary Force Main	33 34 01 2.0	Pipes, fittings, mainline valves, boxes, couplings, bolts and nuts, and tie-rods same as for water applications	"Generic"	No HDPE Pipe allowed. Valve box cover marked "SANITARY SEWER". Air valves to be specially designed for sewage applications.
Sanitary Service Connection	33 30 01 2.3	PVC DR28	"Generic"	
MANHOLES AND CATCHBASIN				
Manhole Frame and Cover	33 44 01 2.1		ACS C-18 Dobney C-18 K Casting CK18 Sierra Dist SD18 UIF 1AC, UIF, 1LAF Westview TR18	Cover marked "STORM SEWER" or "SANITARY SEWER".

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Product	Specifications MMCD Section	Approved Material Type	Approved Product	Comments
Catch Basin and Other Castings	33 44 01 2.1	CB Frame	ACS B-24 Dobney B-24 Dobney B-39B K Casting BJ24D Sierra Dist SD24 UIF 60CBFD Westview TR24	
		CB Grate	ACS B-23 Dobney B-23 K Casting BJ23 Sierra Dist SD23 UIF 60CBG Westview TR23	
		Lawn Basin Grate	ACS B-22A Dobney B-22A	
Inspection / Valve Chamber			LeRon 70A 4x8 WLP-1	
TRANSPORTATION				
Traffic Signal	34 41 13 2.0	Controller	Econolite Intrex	NEMA
		Primary Head	"Generic"	300 mm diam red, yellow, green
		Signal Head Mount	Astro Brac	4 head unit
		Pedestrian Heads	ICC Model No. 7090	460x450 mm illuminated display c/w 2-crate visor, full silhouette
		Pedestrian Button	Rees Model No. 1371	Mushroom type plunger
		Pre-emption	Opticom	
		Safety Cable	"Generic"	3.5 mm stranded SS aircraft cable secured with C crimps.
LANDSCAPING				
Irrigation		Pipe	Schedule 40	
		Solenoid	TBOS Potted Latching Solenoid	
		Moisture Monitor	TBOS Rain Shutoff Device	

District of Squamish
Subdivision and Development Control Bylaw No. 2373

Product	Specifications MMCD Section	Approved Material Type	Approved Product	Comments
		Valve Controller	Rainbird TBOS – multi station, battery operated	
		Nipples and fittings	Brass is approved	
		Irrigation Heads		Permanent heads
		Quick coupler	#5RC	
		Temporary head		Rotary nozzles
		Valve Box	NDS Model 1324	Drop in stainless steel bolt down cover
		Valve	PGA solenoid	
STREETLIGHTING				
Downtown – Luminaire Arm		Lumca Concept 80 (LED) Post Top	Lumca	
Elsewhere- Luminaire Arm		Kim Lighting RA ERA Series (LED) Kim Lighting HA035-TM1	Kim Lighting	

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SCHEDULE H

SUBDIVISION AND DEVELOPMENT CONTROL BYLAW NO. 2373, 2015

DOWNTOWN STREETSCAPES STANDARDS

ATTACHMENT A

The District of Squamish

Downtown Streetscape Standards

Standards and Specifications Manual

Revised May 2015

A WORKING DOCUMENT



Overview

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Purpose

There is a need to define a clear approach for the Downtown for basic streetscape standards to be included into development application proposals and to assist the Operations Department with necessary maintenance and repairs. A clear set of guidelines and standards are necessary in order to have improvements within the Downtown undertaken in a prescribed and uniform manner.

Streets are maintained by limited municipal resources, so cost effectiveness and sustainable maintenance requirements are key.

Specifying high quality components and thoughtful layout will ensure that public furniture will last.

The standards and specifications are for private developers and municipal public works, as street improvements are required. Over the next ten or more years, the downtown will evolve to have a high quality and consistent look.

Background

The District of Squamish's Downtown Streetscape Standards were developed in-house by the District's Planning Department, through consultation with the Engineering and Operations Departments.

The Downtown Streetscape Standards is intended to be a working document that guides new development downtown as street frontages are improved. It will be updated as design development occurs.

Key Considerations

Streetscape elements should be:

- Meaningful to Squamish;
- High quality, durable and timeless;
- Sustainably made and maintainable;
- Cost effective;
- Locally sourced, and
- Compatible with the existing streetscape to ensure a coordinated look over time as sites are developed one at a time.

Location

DOWNTOWN SQUAMISH

The Downtown Streetscape Standards apply to Cleveland Avenue and 2nd Avenue, and the cross-streets and street corners within. The area includes cross-streets with future water connections, as shown in the map.



Context

Streetscape design should consider the downtown core's unique context. Downtown Squamish stands at the centre of spectacular views, natural edges, existing shops, and changing elements such as wind, light and rain at the head of Howe Sound Inlet.



Streetscape Layout

Streetscape layout is the overall vision that defines how individual components are arranged on each street.

In general, a clear sidewalk area is provided, with an amenity strip between the sidewalk and road. The amenity strip creates a space in the streetscape for a regular pattern of site furnishings, street trees, and seating opportunities.

Issues addressed in streetscape layout include:

- Ensuring sufficient soil volume for healthy growth of street trees;
- Resolving spatial conflicts between street trees, lighting, buildings, and overhead power lines;
- Grouping site furnishings together so that clear areas of paving exist to allow for patio seating; and
- Addressing implementation issues relating to sidewalk widths, street design and installation of continuous systems such as irrigation.

Streetscape layout consists of:

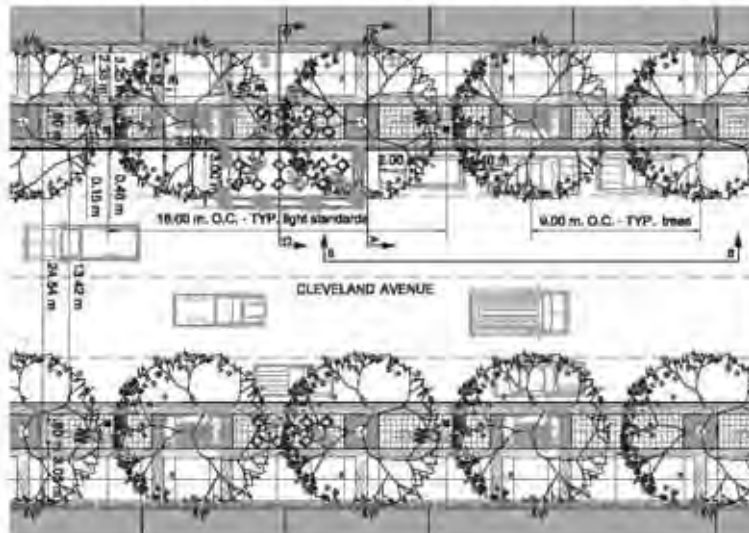
1. Plan, Section, Elevation Views
2. Mid-Block Bump-Outs
3. Patio Seating
4. Rain Gardens
5. Street Corners

Streetscape Layout

Plan View

As the main streets of Downtown Squamish, Cleveland and 2nd Avenues should consist of a rich pedestrian environment with regular seating, street trees, horticultural plantings, café patios and public art.

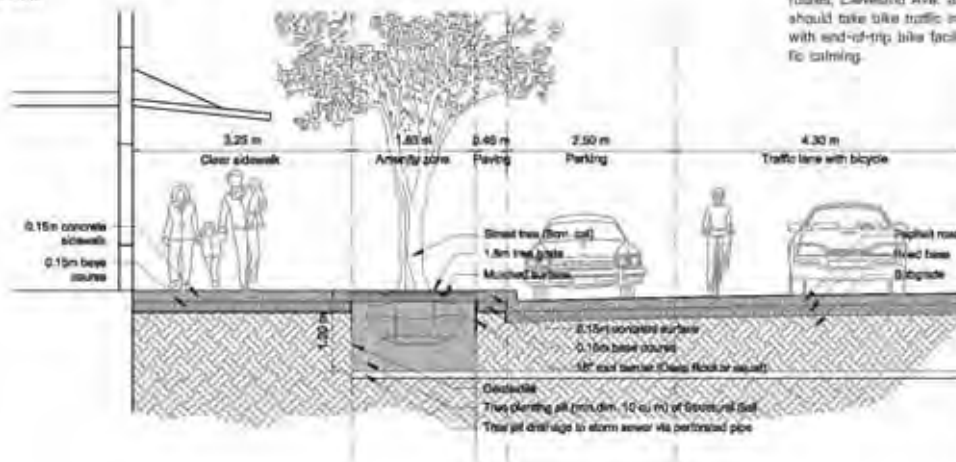
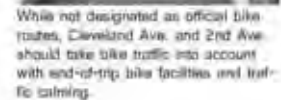
If budgets allow, widen the sidewalks on both Cleveland Avenue and 2nd Avenue in order to create generous sidewalks and planting beds. Bury overhead hydro lines on 2nd Avenue to allow for tree planting.



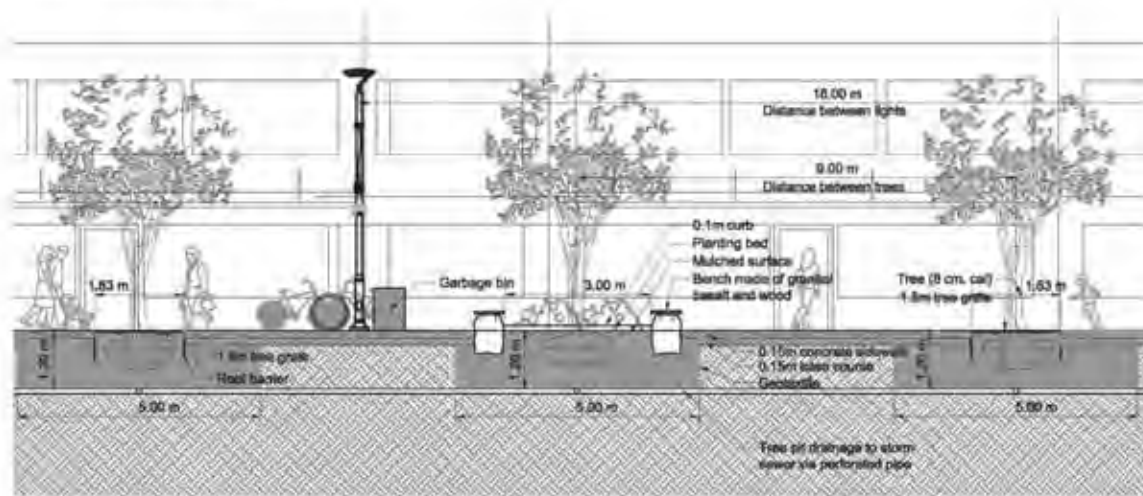
Commercial Street in Nanaimo, BC has generous sidewalks, a narrow roadway, cubed planting beds, custom seating, and unique lighting.

Permeable pavers should be considered for use in parking lanes, to increase stormwater infiltration downtown.

Widths of sidewalks shown are for current condition of Cleveland Avenue. These dimensions will have to be adjusted for current conditions on 2nd Avenue and for possible widening of sidewalks.



Increase the green infrastructure downtown by planting a regular spacing of street trees in a healthy amount of growing medium. A pattern of tree grates and tree planting beds allows for ease of pedestrian access while providing horticultural plantings.

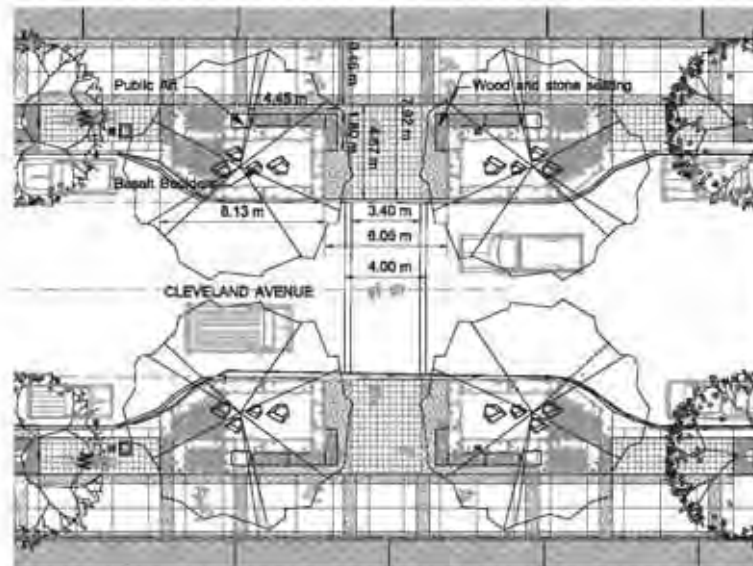


Streetscape Layout

Mid-Block Bump-Outs

The Mid-Block is a good opportunity to create larger planting beds for horticultural displays and seating.

These areas can highlight public art, features such as low basalt columns and a streetscape theme.



Bump-outs can incorporate a range of plant material along with features such as local stone.



Seal-out integral coloured concrete paving field.

Mid-block bump-out considerations:

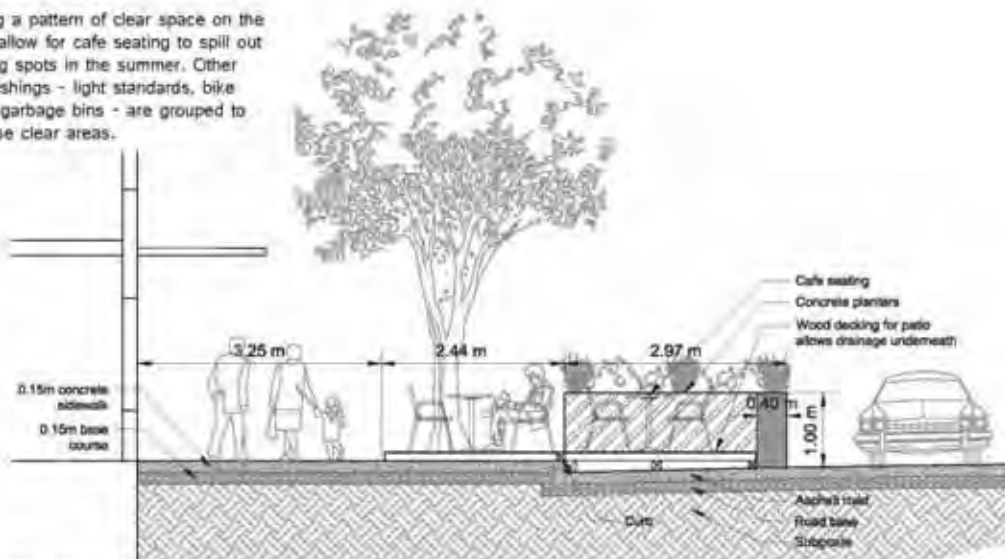
- Clear sightlines for safe pedestrian crossing must be maintained.
- Accessible parking stalls currently located at mid-blocks on Cleveland Avenue need to be reviewed in relation to mid-block planting beds.

Streetscape Layout

Cafe Seating in Parking Zone

Elevation C-C

Maintaining a pattern of clear space on the street will allow for cafe seating to spill out into parking spots in the summer. Other street furnishings - light standards, bike racks and garbage bins - are grouped to create these clear areas.



Note: Plan View shown on page 6.

10.

Streetscape Layout

Cafe Seating in Parking Zone



Wood decking is a useful material for creating temporary patio "rafts".



Temporary concrete planters delineate between the parking/driving zone and patio zone.



A cafe spills out into the road.



In Nelson, BC, summer patios take over certain parking spaces.

Gateway Elements

- Cleveland is the current "gateway" to downtown and as the oceanfront is developed, it will become even more so.
- Gateway elements should be developed to guide streetscape development as it occurs in gateway areas, particularly on Cleveland Ave. between Buckley and Pemberton Ave.



Sketch of a gateway treatment on a boulevard.

Streetscape Layout

Rain Gardens

- On cross-streets Downtown, consider increasing on-site stormwater infiltration by directing water to combined tree planting and infiltration areas, in order to improve air and water quality.
- Surface run-off from street/ sidewalks/ water collection from rooftops can be channelled into planting beds.
- Planting species will need to be able to grow in very wet situations, as well as dry in the summer.
- Create by cutting the curb in locations to allow surface run-off to drain into planter beds, or sink the rain garden lower than the curb.

Considerations that make rain gardens better suited to cross-streets than main streets:

- Need to consider existing drainage systems/ drainage requirements, underground utilities, curbside parking, street trees, utility poles, and foot traffic.
- Plants for rain gardens tend to be native varieties that can stand wet conditions. These plants are great for the environment but not the most colourful aesthetically/ horticulturally for a primary commercial street.

Street Corners

Design considerations for Downtown street corners include:

- Pedestrian crossings: Curb let-downs should be lined up with crosswalks (currently there is at least one let-down that aligns with neither crosswalk)
- Street corner improvements: can incorporate the entire intersection (eg. with a special paving pattern or other treatment).



An example of a street corner in downtown Squamish that could have a special treatment

Celebration Corners

Certain corners in the downtown are already used for temporary celebrations. These corners can be further highlighted in the redevelopment of the streetscape with more permanent design feature additions.

Plant a conifer tree (i.e. fir or spruce) behind the Rotary clock at the corner of Cleveland Ave and Winnipeg St as the community Christmas Tree. Over time, it will grow to a large size. This will eliminate the need to cut down a large tree and raise it in this location for Christmas, while providing substantial greenery at this intersection year-round. Determining whether planting a tree in this location is feasible will depend on discussions with land-owners.



Streetscape Components

Streetscape components were reviewed in terms of material choices, maintenance requirements, initial and ongoing costs, environmental considerations, and suitability to Squamish's climate and culture.

Streetscape Components consists of:

1. Street Trees
2. Paving
3. Lighting
4. Themes, Features and Public Art
5. Seating
6. Bike Facilities
7. Signage, Litter and Recycling

Street Trees

Healthy Streets

Considerations for street trees:

- Benefits are many: environmental, economic and social: Trees bring the scale of the street to the pedestrian level and slow traffic speeds. Tree-lined streets are known to be attractive to shoppers – a benefit for downtown merchants;
- Street trees are a critical piece of the urban infrastructure: Utilities should be located in concert with the trees' best location;
- Relate tree size with street width (volume) – canopy increases as street width increases;
- Succession: Ensure continuity in the canopy over time and avoid large-scale monoculture planting;
- Allow for long-term survival of trees with sufficient growing medium volume, and
- Consider shop signs/ utility poles/ street lights when siting trees.

Tree Species Selection

Species selected have been chosen based on the following traits:

- Hardy to Squamish's climate;
- Drought resistant/ limited need for wet roots;
- Disease resistant;
- Small leaf size = less debris;
- Few berries or fruit to attract bears;
- Upright form to allow room for pedestrians/ cars below and to not crowd buildings;
- Fall colour and bark interest, and
- Root structure (shallow roots avoided).

Designating one tree species per street in the downtown core will:

- Provide a sense of organization and consistency to each street;
- Assist in wayfinding downtown, and
- Ensure that if a disease attacks one species, that it will only affect one street.

Cleveland Avenue

Acer Rubrum 'Red Sunset' – Red Sunset Maple



For mid-block bump outs:

Magnolia 'Vulcan',
OR 'Akebono' Yoshino – ornamental cherry.



Street Trees

2nd Avenue

Tilia cordata 'greenspire' - Greenspire Little-leaf Linden



Loggers Lane

Zelkova serrata 'Green Vase' - Green Vase Zelkova



Cross streets

Pemberton St: *Fraxinus excelsior* - Golden Desert Ash



Winnipeg St: *Parrotia persica* 'Vanessa' - Vanessa Parrotia



Victoria St: *Cercidiphyllum japonicum* - Katsura Tree



Main St: *Fagus sylvatica* 'fastigiata' dawyck purple - Dawyck Purple Beech



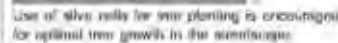
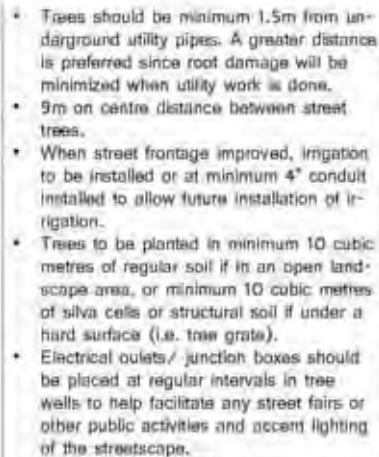
Vancouver St: *Nyssa sylvatica* - Black Tupelo



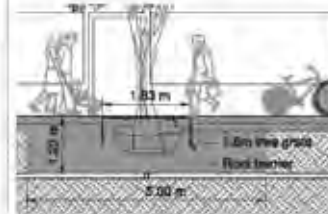
Other Feature Trees

Tree species to be considered in consultation with District of Squamish staff.

* Tree size: 8 cm. calliper (will have 96 cm. rootball) with 1.8 metre clear stem at installation. Tree pits need to accommodate size of 8cm. cal rootball.



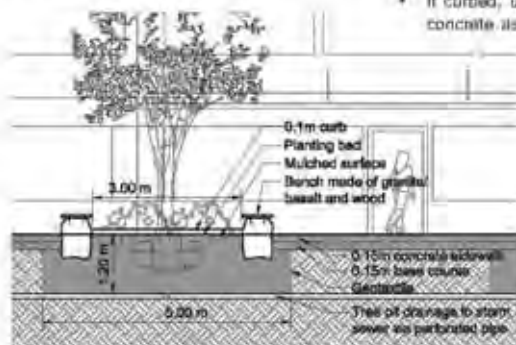
- Dobney Foundry (local - Surrey)
- Model: SCT, in a 1.2m square or 1.8m dimension. Size of tree grates should be reviewed in light of space on sidewalk. Paving may need to be adjusted to suit tree grate dimension.
- Finish: wrinkle powder coating semi gloss black.



Planting Beds

Planting Beds

- Planting beds increase pedestrian safety with a buffer between cars, reduce surface runoff by allowing water to infiltrate, and benefits tree health.
- Provide the greatest degree of permeability immediately around each tree (ideally 10 square metres) - as an open, planted surface area.
- Moving from the above-grade planter boxes in the Downtown to at-grade planting beds will allow more soil volume for tree and shrub health.
- 1.8m width planting beds.



- Planting beds should be planted with ornamental drought-resistant low (max. 0.6 – 0.7m) shrubs and groundcovers to create separation from vehicular traffic and pedestrians.
- Water conservation is a high priority in streetscape design. Assess use of curb to delineate planting beds. Low 0.1m (4") curbs would deter people and dogs from entering planting areas, however it would reduce water infiltration, be costly, and could look unnecessary.
- If curbed, consider use of breaks in the curb or casting pvc pipe within the curb to allow stormwater to infiltrate into beds.
- If curbed, use of stone is preferred over concrete as a curbing material.



Planting bed on Commercial Street, Nanaimo.



Curbed planting bed in North Vancouver, BC that allows rainwater to infiltrate through curb cuts.



Use of stone as a curbing material is preferred over concrete.

Lighting

Enhance Use, Mood and Safety

Considerations - Light standards should:

- Enhance the visual quality of the streets;
- Incorporate street lighting and pedestrian lighting;
- Not shine into second/ third storey residential windows;
- Respect Squamish Dark Skies guidelines and generally respect Squamish's location in the mountains with a desire to minimize unneeded light levels;
- Be wind-resistant;
- Accommodate seasonal banners at a 26" x 50" size (and potentially banners to string right across a street);
- Accommodate internal irrigation and hanging basket hangers;
- Incorporate a duplex receptacle on the pole for seasonal lighting, and
- Be of a style that will work with low-level pedestrian bollard lighting in the downtown.

Luminaire

- LED luminaire / pole / accessories per Engineering standard. Contact District of Squamish Engineering Department.
- Casts no up-light.
- Depending on location, may require a house side cutoff option.
- Contact Engineering for on centre spacing.
- Luminaire to provide internal irrigation and a duplex receptacle for festival lighting.



Lighting layout showing light distribution on Cleveland Ave.

Banners and Hanging Baskets

Banners

- Banners must handle the Squamish wind.
- The banners currently being used are working fairly well. Current banner size: 26" x 60". Banners are currently driven by the Squamish Arts Council.
- Other banner options include banners with slits for wind movement designed into them, or alternating fabric banners on light standards with a cut steel panel. Steel would have cost considerations, but minimal maintenance.
- The role of the banners requires further exploration, whether they are public art or event advertising.
- Advertising for non-profit events should be considered.
- Need standards and program "policy" for banners, including timeframe and cost offset. Costs should include putting up the banners and removing them.
- Contact the District of Squamish Operations Department for further information regarding banners.

Hanging Baskets

- Light poles must have internal irrigation system for hanging baskets.
- Hanging baskets also require fertilizer, so some hands-on attention will likely be required by staff even if drip irrigation is hooked up.
- Implementation of hanging basket irrigation is unresolved if sites develop one at a time.



Light poles need to accommodate banners, hanging basket holders and irrigation

Paving

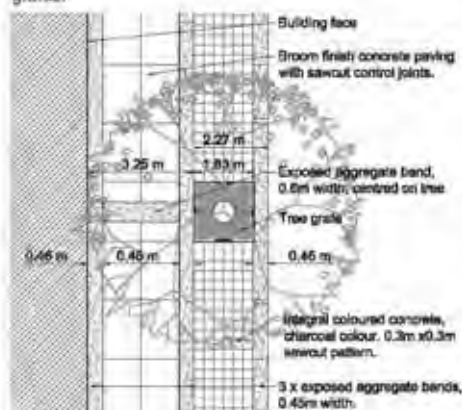
Consistent Ground Plane

Considerations - Paving should:

- Consist of a straightforward design that will allow one clean look despite potential long-term installation timeframe by many different projects;
- Address ongoing maintenance demands of pavers settling, weeds establishing, and limited District resources to maintain;
- Be cost-effective;
- Be even so that vehicles with motion sensors (for disabled) can park adjacent to paving fields;
- Have minimal grooving to reduce vibration, and
- Have visually contrasting colours for visually impaired.

Paving Standard

- The standard paving for streets in downtown Squamish will be three consistent 0.45m exposed aggregate bands that align with back of curb, building face, and fronts of planters/ tree grates. An integral coloured concrete field of charcoal colour will fill the space between, with 0.3m x 0.3m squares saw-cut into cobble. Therefore, spacing of bands may need adjustment to match tree grates.



Concrete Paving

- Concrete paving shall be broom finish, regular colour, have sawcut control joints, and expansion joints where required.
- Sawcut joints should be made before concrete cures in order to ensure there is no chipping.
- Stamped concrete is not recommended.



Paving

Exposed Aggregate

- Exposed aggregate banding is an effective, consistent and easy-to-maintain paving material. Bands should align with features in the landscape: the edges of benches or centres of tree grates.
- Exposed aggregate banding can be used to separate different paving fields.
- A good dimension of banding ranges between 0.35m to 0.6m width. Recommended widths are shown in the paving detail to the left.



Exposed aggregate bands align with planting beds

Integral Colour Concrete

- Coloured concrete is desired to create interest. Coloured concrete must be integral colour, not applied to the surface of the concrete. Sandblast finish.
- Recommended integral colour: charcoal.
- Saw-cut coloured concrete with variety and interest in saw-cut spacing is desired, such as 0.3m x 0.3m squares.



Integral colour concrete in charcoal colour

Pavers

- While pavers are not recommended as a primary paving material in the downtown streetscape, pavers can be used at building entries or other feature areas.
- Research is needed in best installation options regarding concerns of differential settlement and ongoing maintenance requirements (e.g. sand set/ set on plastic spacers/ set on concrete).
- Paving detail and colour, and paver type, need to be determined.



Feature Paving Areas

- Feature paving can be a pattern of concrete slabs that highlight local themes such as the railroad, industry, logging and outdoor recreation with a custom stamped pattern. History is a particularly relevant theme to Squamish Downtown.
- Paving can be kept abstract.
- In small components, special paving can be a discovery for people; like kids finding a few smaller footprints - should not be too heavily used.
- Consider developing feature paving as part of a public art approach.



Feature paving areas in Vancouver, BC.

Themes, Features and Public Art

Celebrate Squamish Culture

- Squamish culture should be celebrated in the streetscape through use of theme(s), features such as basalt columns and public art.
- Sidewalks should not be overpopulated with themes, features or public art. Sightlines at pedestrian intersections must be maintained for pedestrian safety.
- Use of water features should be carefully considered for impact and ongoing maintenance. With real water (the ocean, the Mamquam Blind Channel, the estuary) surrounding the downtown, water features should not seem contrived.



Precedent: Entrance to downtown Squamish at Hwy 99

Basalt Columns

- Basalt is a strong rock used as simple blocks.
- Consider continued use of basalt columns in Downtown Squamish. Existing precedents: large columns at intersection with Hwy 99, small columns at renovated Bank of Montreal.
- Basalt columns by themselves are not strong enough to be the single unifying "theme" in the downtown streetscape. Should function in a supporting role.
- Columns of varying sizes can be placed within planting beds along Cleveland Ave.- they are especially suited as features at ends and mid-blocks.
- Columns will look better if they are grouped together in natural-looking clusters rather than as tombstone blocks with a regular distance between columns.
- Consider carved columns that will convey a sense of craftsmanship.
- Use columns in a functional way, such as on their sides as tables in the streetscape; consider mixing with other materials such as wood as a table-top (similar to benches).

Public Art

Public art will:

- Highlight local culture and artists;
- Introduce delight and curiosity in the street;
- Reinforce Squamish's identity and celebrate civic pride and achievement;
- Be made of robust materials that are easy to maintain, and
- Only be installed when the responsibility and resources for maintenance are clear.

Public art will be considered and recommended through a formal joined process. A formal public art policy is being developed in conjunction with the Downtown Streetscape Standards in 2011.



Squamish Arts Council and the Business Improvement Association (BIA) will be included in the development of a public art policy.

Themes, Features and Public Art

A regular pattern of pedestals/ designated locations should be incorporated into the streetscape standards to make public art come together as one unifying concept, even if each piece is completely original. Some locations are shown in the mid-block bump-out plan on page 9.



Public art can make functional objects like bike racks have symbolic meaning and beauty. Cleveland Ave, Squamish



Public art in Victoria, BC. Victoria has a strong public art policy.

First Nations Art

- Downtown Squamish is an appropriate location to incorporate local First Nations artists' outdoor art where possible.
- The District of Squamish should work with local First Nations in determining suitable locations and art forms.



First Nations totems animate downtown Victoria, BC by creating a gateway to a public space.

Themes

- A theme in the streetscape can be told like a story to animate the pedestrian environment.
- A strong theme will create a sense of place in downtown Squamish.
- The theme(s) should be open and fresh.
- A theme can incorporate artistic and cultural heritage features into public infrastructure, or strengthen public knowledge of Squamish's history. Historical elements can be incorporated into the streetscape, such as historic photos or historic forms into paving.
- If an industry theme is used, consider making it abstract or subtle - be mindful of how it would play out on the ground.



An insight that shows how a theme can play out along a street - from intersections to mid-block bump-outs

Seating

Local Rock and Wood

Seating considerations:

- Seating is one opportunity to really highlight a local and individual look in the streetscape;
- Custom manufactured benches should be made of local materials such as wood and stone;
- Can be physically made in Squamish;
- Rock covered with wood is more comfortable than rock alone;
- Consider adding arms and backs, varying heights to accommodate people with injuries;
- One solid wood piece is a strong look, but an option would be wood slats;
- Maintenance: wood can be replaced if needed by municipal forces. Wood benches can be sanded down. If wood slats are used for benches, single slats can be replaced;
- Skateboards need consideration in design, such as use of wood notches on flat benches.

Standard Benches

- Standard benches along the streetscape downtown will be custom-made with rock and wood, rather than manufactured out-of-a-catalogue bench.
- Standard: a basalt or granite linear boulder (or two boulders side-by-side) with a solid piece of wood bolted to the top as a seat.
- Custom bench can be combination of local stone supplier and local woodworker.
- Consider adding back to bench, and arms.
- Local precedents: Seniors Centre basalt seating (but need to add wood to it), Smoke Bluffs Park stone/ wood benches.



Civic Centre, Squamish



Bench on Commercial Street, Nanaimo



Smoke Bluffs Park, Squamish

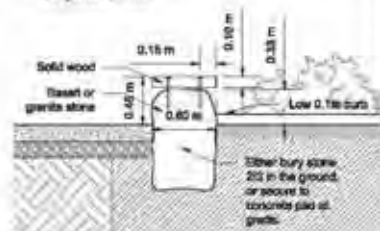


Seniors Centre, Squamish

Seating

Standard Bench Detail

- The detail below is a conceptual design for the standard bench, showing preferred dimensions. Developers installing a streetscape should prepare a detailed design for the bench and have the District of Squamish Operations Department review for long-term maintenance requirements.



Standard bench detail, section.



Standard bench detail, elevation.

Feature Seating

Location:

- Feature benches to be located in plazas, parks and commercial areas off of the typical sidewalk section.
- Feature seating can incorporate the District's Memorial Bench Program.

Design:

- Feature benches can be natural or sleek;
- Must be durable;
- Custom-made benches can be created by local artisans. Local precedents: Squamish River dike custom wood benches and custom wood bench in Smoke Bluffs Park, and
- Fun can be taken with feature seating, such as oversize chairs.



Feature seating benches by local resident Warren Brubacher of Coastal Cedar Creations



Oversized adirondack chairs have been a success in George Wainburn Park, Vancouver

Bike Facilities

Active Transportation

Bike facility considerations:

- The placement of easily accessible bike racks will encourage people to ride their bikes Downtown;
- Aesthetics and functionality;
- Range of sizes to meet specific locations;
- Care needs to be taken when placing bike racks in relation to all the other elements on the street. Bike rack placement must take into account the added distance that bikes will project into the sidewalk or street, and
- Consider families who tow trailers and provide space if possible to avoid parking the trailers on the street.
- See siting of bike racks under "Streetscape Layout" section of Streetscape Standards.



Preferred Bike Rack

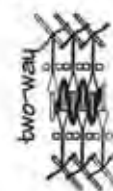
- Manufacturer: Dobra Design (local to Vancouver)
- Model: "The Boa-4" in the 4-bike option
- Stainless steel for better durability and to reduce ongoing maintenance concerns.
- Precedent: Currently at Senior's Centre, Squamish
- Note: Other styles of bike racks may be considered, upon District review.



The 4-bike option is shown on the left.



Stainless steel is the standard.



An image of the Boa, but in a larger size than is specified for the Downtown streetscape in Squamish.

Bike Rack Bollard

- Bike rack bollards can be considered where space is limited.
- Bike rack bollards double in use as a barrier to traffic, and also as bike parking.
- Simple, clean look.



Signage, Litter and Recycling

High quality site furnishings

- Site furnishings should be made and installed with high quality materials that will stand the test of time and create a sense of permanence in the streetscape.

Signage

A signage program can be developed for wayfinding, identification, and non-profit event advertising signage for downtown Squamish. Signage should:

- Follow a high standard of architectural design, materials and finishes.
- Take into account other site furnishing and streetscape standards.
- Point to landmarks or assist visitors with locating Squamish's amenities from the downtown area.

Bear Smart

- Incorporate Bear Smart criteria into litter receptacle specification.

Litter

- Secure bear-proof bins are required.
- Black bear bins have recently been located on streets in the downtown - for the time being, this is the standard litter receptacle.
- A new bear-proof bin may be considered in the future, with care taken to ensure that the bins self-latch properly and have an accessible latch design for all abilities of people to use.
- See siting of litter receptacles under 'Streetscape Layout' section of

Recycling

- Providing recycling bins Downtown would require additional District Staff time and additional funding. Recycling collection from public areas is not currently an option for Squamish.
- When resources allow, recycling options should be provided alongside litter bins.
- Recycling will also have to be in bear-proof containers.



Black bear-proof bins in downtown Squamish



While stainless steel is not a preferred litter receptacle material in Squamish, this image from Whistler, BC shows recycling and litter in one unit.

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END OF DOCUMENT

SCHEDULE G

FORM FOR AGREEMENT TO BYLAW CHANGES

This AGREEMENT dated for reference the ____ day of _____, _____

BETWEEN:

(the “Developer”)

AND:

DISTRICT OF SQUAMISH

37955 Second Avenue
Squamish, BC V8B 0A3

(the “District”)

WHEREAS:

- A. The District has entered into a Phased Development Agreement authorized by Bylaw No. _____ dated the ____ day of _____, _____ (the “PDA”);
- B. The Developer is the registered owner of the lands described below, being all or part of the lands that are the subject of the PDA:
- [set out legal description] (the “Lands”);
- C. The District has, pursuant to Bylaw No. _____, _____ amended the provisions of its Zoning Bylaw or Subdivision Bylaw as set out below:
- [set out the amendments that the District and the Developer agree apply to the Lands]
- (the “Amended Provisions”)
- D. The Developer and the District wish to agree that the Amended Provisions apply to the Lands;

NOW THEREFORE THIS AGREEMENT WITNESSES THAT:

1. The Developer and the District hereby agree, further to section 905.1(5) of the *Local Government Act*, that the Amended Provisions apply to the development of the Lands.

2. Apart from the amendment of the Amended Provisions, the agreement of the District and the Developer hereunder is not intended to, and does not, in any way:
 - (a) limit or otherwise alter the rights and responsibilities of the Developer and the District under the PDA, which shall continue in full force and effect, and be enforceable by both parties, notwithstanding section 1; or
 - (b) impact lands that may be the subject of the PDA other than the Lands.
3. Without limiting the generality of section 1, the District and the Developer, noting that neither the definition of Specified Bylaw Provisions in the PDA, nor the provisions of the PDA relating to the Specified Bylaw Provisions, have been amended, agree and confirm that:
 - (a) the foregoing agreement in respect of the Amended Provisions does not imply, and shall not be construed as implying, that the Developer has waived the protection that the PDA provides to it in respect of the Specified Bylaw Provisions, apart from the application of the Amended Provisions; and
 - (b) any further or subsequent changes to the District's Zoning Bylaw or Subdivision Bylaw made by the District that fall within the definition of Specified Bylaw Provisions in the PDA, other than the Amended Provisions, shall not apply to the development of the Lands unless the Developer agrees in writing that they apply on the basis set out at sections 2 and 3 of this Agreement.

IN WITNESS WHEREOF the Parties have executed this Agreement as of the date first written above.

THE DEVELOPER by its authorized signatory

Per: Authorized Signatory

THE DISTRICT OF SQUAMISH by its authorized signatories

Per: Authorized Signatory

Per: Authorized Signatory

SCHEDULE "H"

LICENCE OF OCCUPATION

THIS AGREEMENT dated for reference the day of _____, 20 .

BETWEEN:

DISTRICT OF SQUAMISH

37955 2nd Avenue

Squamish, BC V8B 0A3

(the "**District**")

AND

0983016 BC LTD.

401 – 37989 Cleveland Avenue

PO Box 1068

Squamish, BC V8B 0A7

(the "**Developer**")

GIVEN THAT:

- A. The District is the owner of those certain lands situate, lying and being in the District of Squamish, in the Province of British Columbia and shown dedicated as "Oceanfront Park" on the Site Plan attached as Appendix "1" (the "**Licence Area**");
- B. The Developer is the registered owner in fee simple of those lands adjacent to the Lands, being in the District of Squamish, in the Province of British Columbia, and shown as Lots 1 through 9 on the Site Plan (the "**Developer's Property**");
- C. The Developer and the District have entered into a Phased Development Agreement (the "**Phased Development Agreement**") dated the _____ date of _____, _____, section 4(b) of which contemplates the District providing a Licence of Occupation to the Developer, with various of the Developer's obligations under the Phased Development Agreement being contingent thereon;
- D. The District acquired the Licence Area from the Developer further to the subdivision that created Lots 1 through 9, as provided for in the Phased Development Agreement;
- E. The Developer wishes to occupy and use the Licence Area to, inter alia, construct and develop park amenities, increase the land area of the park, remediate and deposit soil for the purposes of park development, and, if and when it so desires, construct access to a cruise ship facility or pier;

- F. The District has agreed that the Developer may use and occupy the Licence Area for the purposes and on the terms and conditions herein set forth.

NOW THEREFORE THIS AGREEMENT WITNESSES that in consideration of the premises and covenants contained herein and sum of \$10.00 now paid by the Developer to the District, and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the parties agree as follows:

1. **Grant of Licence** – The District, on the terms and conditions set forth herein, grants to the Developer the right and licence (the “Licence”) to occupy, enter onto and use the Licence Area for the purposes of constructing and developing park amenities, increasing the land area of the park, remediating and depositing soil for the purposes of park development, constructing an access to a cruise ship facility or pier, staging development of the Developer’s Property, and otherwise as contemplated by the Phased Development Agreement, for the Developer and its permitted assigns and their servants, agents and invitees. This Licence is does not create any interest in property and is exclusively for the benefit of the Developer.
2. **Term and Renewal** – This Licence shall commence on the _____ day of _____, 2015 (the “**Commencement Date**”), being the date that the Phased Development Agreement is entered into by the parties, and shall terminate on the day the District’s acknowledges in writing the completion of the development of the park provided for by the Phased Development Agreement, unless this Licence is terminated on an earlier date by the District or by the Developer under section 3.
3. **Termination**
 - (a) The Licence may be cancelled or terminated by the District in accordance with any of the following provisions:
 - (i) if the Developer is convicted of an offence under the Criminal Code in relation to the Licence Area;
 - (ii) if the Developer is convicted of a summary conviction offence under a provincial enactment in relation to the Licence Area, unless the Developer cures or rectifies the act or omission that gave rise to the conviction within 90 days after written notice from the District; or
 - (iii) the District will be entitled to terminate this Licence at its sole discretion, for any or no reason and at any time upon giving 5 years’ written notice to the Developer.
 - (b) the Developer will be entitled to terminate this Licence for any or no reason at any time after:
 - (i) the District’s Council acknowledges in writing the completion of the development of the park area as contemplated by section 2 hereof; and
 - (ii) the District dedicates the land area for a road providing access to the pier or cruise ship facility, which the District will do after the road is constructed by the

Developer at the Developer's sole cost (it being agreed that the Developer shall not be required to pay the District for the market value of the land area being dedicated); and

- (c) All of the Developer's obligations under this Licence that are outstanding on the date that this Licence is terminated will survive the termination of this Agreement. For certainty, the Developer's obligations under the Phased Development Agreement, and to release and indemnify the District under this Licence Agreement, shall survive the termination of this Agreement. The District expressly acknowledges and agrees, however, that all of the Developer's obligations under the Phased Development Agreement that cannot reasonably be performed without access to the Licence Area will be terminated upon the termination of this Licence, in which event:
 - (i) the Developer will have no further obligations under the Phased Development Agreement in connection with the Oceanfront Park, and
 - (ii) all of the obligations of the Developer in connection with the Oceanfront Park under the Phased Development Agreement will be deemed to be satisfied.
- 4. **Powers** – For the purposes of the Licence herein, the Developer and its servants, agents and invitees shall have the right to:
 - (a) use the Licence Area;
 - (b) have unobstructed access to and from the Licence Area at any and all times;
 - (c) bring onto and take through the Licence Area all materials, vehicles and equipment that it reasonably requires be transported through the Licence Area; and
 - (d) do all other things on the Licence Area as may be reasonably necessary, desirable and incidental to the use of the Licence Area.
- 5. **District May Access and May Undertake Work** – The District shall have free access to enter and to pass and repass over all parts of the Licence Area for municipal purposes. The District is not required to give any notice to enter Licence Area, except for such areas as may be secured by the Developer for safety or security purposes, with at least two business days' notice being required of the District for access to same.
- 6. **Improvements On and Use of Licence Area**– The Developer, for the purposes of the development of the Oceanfront Park as described in the Phased Development Agreement, may construct, install, affix, place or store or permit the construction, installation, affixing, placing or storage of any buildings, structures, works, improvements, fencing, material or chattels including, without limitation, the parking or storage of vehicles on any part of the Licence Area.
- 7. **Use** – The Licence Area will be used by the Developer for the following purposes only:
 - (a) to enter on and use the Licence Area for the purposes of constructing and developing park amenities, increasing the land area of the park, remediating and depositing soil for the purposes of park development, constructing an access to a cruise ship facility or pier, and such other purposes as are required for the performance of the Phased

Development Agreement, including to pass and repass over and through the Licence Area, on foot or by vehicle for access to the Developer's Property;

- (b) Despite subsection (a), but subject to section 5 hereof, the District will at all times have a right to enter any portion of the Licence Area, without notice, in order to access other portions of the Lands, or the Developer's property, or to carry out any public service or responsibility that requires use of or access to the Licence Area.

The Developer acknowledges and agrees that, by granting this Agreement, the District is not accepting any responsibility for the Developer's use of the Licence Area.

- 8. **Site Clean-up** – Upon termination of this Licence, the Developer will leave the Licence Area in a tidy condition, and the Developer, if required by the District in its sole discretion, shall remove all personal property belonging to the Developer within 60 days after termination of this Agreement. Any personal property not removed by the Developer shall become the absolute property of the District free of all encumbrances, without payment of compensation to the Developer.
- 9. **No Waste or Nuisance** – The Developer will not commit or allow any wilful or voluntary waste or destruction of the Licence Area, or do anything that may become a nuisance or annoyance to other occupiers of the land or adjoining lands. The Developer will not burn any materials on the Licence Area.
- 10. **Compliance with Laws** – The Developer will at all times during the currency of this Licence use the Licence Area in compliance with all applicable statutes, laws, regulations and orders of any authority having jurisdiction and, without limiting the generality of the foregoing, all federal, provincial, or local government laws or statutes or bylaws relating to environmental matters, including all the rules, regulations, policies, guidelines, criteria or the like made under or pursuant to any such laws.
- 11. **Assignment** – Except as expressly set out herein, the rights granted to the Developer under this Agreement may not be sublicensed, assigned, or otherwise transferred. The Developer may assign its interest under this Licence with the prior written consent of the District, such consent not to be unreasonably withheld or delayed.
- 12. **Risk** – The Developer accepts the Licence Area on an as-is basis and agrees that it will use the Licence Area at its own risk, and that the District will not be liable in respect of any loss of life, personal injury, damage to property or loss of property suffered by the Developer, its servants, agents, or invitees arising out of this Agreement or its or their use and occupation of the Licence Area.
- 13. **Builders Lien Act and WorkSafe BC** – If any claim of lien over the Licence Area is made under the *Builders Lien Act* for work performed on or materials supplied to the Licence Area at the Developer's request, on the Developer's behalf, or with the Developer's permission, the Developer will immediately take all steps necessary to have the lien discharged, unless the claim of lien is being contested in good faith by the Developer and the Developer has taken the steps necessary to ensure that the claim of lien will not subject the Licence Area or any interest of the District's under this Agreement to sale or forfeiture. For the purposes of the WorkSafe BC enactments, the Developer is the owner of the Licence Area during the term of this Licence

Agreement.

14. **Indemnity** – The Developer hereby indemnifies and saves harmless the District, its officers, elected officials, employees and agents from and against any and all losses, claims, costs, expenses, damages and liabilities, causes of action, suits and judgments including all costs of defending or denying the same, and all costs of investigation, monitoring, remedial response, removal, restoration or permit acquisition and including all solicitor's fees and disbursements in connection therewith which at any time may be paid or incurred by or claimed against the District, its officers, directors, elected officials, employees, agents and invitees arising, directly or indirectly, out of:
- (a) the uses of the Developer under this Licence;
 - (b) a breach by the Developer of any of the covenants contained in this Licence;
 - (c) any wrongful act or neglect of the Developer on or about the Licence Area;
 - (d) any damage to property related to the Developer's use and occupancy of the Licence Area;
 - (e) the death of or injury to any person arising out of or in any way connected with, directly or indirectly, the Developer's use and occupancy of the Licence Area.

This section does not apply to liabilities, damages, costs, claims, suits or actions arising out of the gross negligence or wilful misconduct of the District, its agents, servants, employees or contractors.

15. **Insurance** – The Developer shall obtain and keep in force throughout the existence of the Licence insurance naming the District as an additional insured and protecting the District and the Developer (without any rights of cross-claim or subrogation against the District) against claims by any person, including any member of the public using the Lands, for personal injury, death, property loss or damage, and third party liability or public liability claims arising from any accident or occurrence on the Lands or other loss relating to the Developer's use of the Lands to an amount of not less than Five Million (\$5,000,000.00) Dollars per occurrence (the "Insurance Policy").
- (a) The Insurance Policy shall provide that it is not terminable or alterable without the giving of 30 days' written notice to the District.
 - (b) At the time of execution of this Licence, the Developer shall deliver to the District a copy of the Insurance Policy or an insurance binder or note evidencing that the Developer has obtained the Insurance Policy on the terms set out herein.
 - (c) At any time during the Term of this Licence the District may require the Developer to provide evidence to it that the Insurance Policy is valid and in full effect.

16. Environmental Clauses

- (a) For the purpose of this Part:
 - (i) "*Environmental Law*" means all federal, provincial, municipal or local laws, statutes or ordinances relating to environmental matters, including all rules, regulations, policies, guidelines, criteria or the like promulgated under or pursuant to any such laws;
 - (ii) "*Hazardous Substance*" means a contaminant, pollutant, dangerous good, waste, toxic substance, special waste or other such hazardous substance as defined in or pursuant to any Environmental Law;
 - (iii) "*Notice*" means any citation, directive, order, claim, litigation, investigation, proceedings, judgment, letter or other communication, written or oral, actual or threatened, from any person, including any governmental agency;
 - (iv) "*Permit*" means any authorization, permit licence, approval or administrative consent issued pursuant to Environmental Law.
- (b) The Developer will conduct its business and operation on the Licence Area in compliance with all Environmental Laws and all Permits.
- (c) The Developer will forthwith notify the District of the occurrence of any of the following and will provide the District with copies of all relevant documentation in connection therewith:
 - (i) a release of a Hazardous Substance on the Licence Area, except as is authorized under Environmental Law;
 - (ii) the receipt by the Developer of a Notice from any governmental agency of non-compliance pursuant to any Environmental Law related to a Hazardous Substance, including a Notice of non-compliance respecting a Permit in connection with the Licence Area;
 - (iii) the receipt by the Developer of a notice of a claim by a third party relating to environmental concerns in connection with the Licence Area; or
 - (iv) the receipt by the Developer of information that indicates that Hazardous Substances are present in or on the Licence Area.
- (d) The Developer will not permit the storage, treatment or disposal of Hazardous Substances on the Licence Area except as authorized by the Province of British Columbia.
- (e) The Developer will conduct such investigations, searches, testing, drilling and sampling ("Investigations") as may at any time be required by the District where any reasonable evidence exists that the Developer's use or occupation of the Licence Area pursuant to this Licence may be introducing or increasing the existence of any Hazardous Substance

on the Licence Area contrary to provincial enactments. If the Developer does not complete the Investigations to the satisfaction of the District, the District may take any actions necessary to complete the Investigations, the cost of which actions will be borne by the Developer.

- (f) If Hazardous Substances are present on or in the Licence Area contrary to provincial enactments as a result of the Developer's use or occupation of the Licence Area pursuant to this Licence, the Developer will take all necessary action, at the cost of the Developer to remediate the Licence Area to a level acceptable to governmental authorities having jurisdiction.
- (g) Prior to the termination of this Licence, the Developer will conduct all Investigations required by the District where any reasonable evidence exists that the Developer's use or occupation of the Licence Area pursuant to this Licence has introduced or increased the existence of any Hazardous Substance on or in the Licence Area. The Developer will provide the result of the Investigations to the District. Where any Hazardous Substance is found on or in the Licence Area contrary to provincial enactments as a result of the Developer's use or occupation of the Licence Area pursuant to this Licence, the Developer will take all necessary action, at the cost of the Developer, to remediate the Licence Area to a level acceptable to governmental authorities having jurisdiction.
- (h) The Developer will provide to the District satisfactory documentary evidence that all Permits related to Hazardous Substances are valid and in good standing as requested by the District from time to time.
- (i) The Developer will indemnify and save harmless the District, its elected officials, officers, employees, agents and others from and against any and all losses, claims, costs, expenses, damages and liabilities, including all costs of defending or denying the same, and all costs of investigation, monitoring, remedial response, removal, restoration or permit acquisition and including all solicitor's fees and disbursements in connection therewith which at any time may be paid or incurred by or claimed against the District, its elected officials, officers, employees, agents and others arising, directly or indirectly, out of:
 - (i) the Developer's use or occupancy of the Licence Area which results in the presence, release or increase of any Hazardous Substance contrary to provincial enactments on or off-site of the Licence Area;
 - (ii) any reasonable action taken by the District with respect to the existence of or remediation for any such Hazardous Substance contrary to provincial enactments on or off-site of the Licence Area; or
 - (iii) any reasonable action taken by the District in compliance with any Notice of any governmental authority with respect to the existence of any such Hazardous Substance contrary to provincial enactments on or off-site of the Licence Area.
- (j) Despite anything else in this Licence, the Developer shall have no liability relating to contamination resulting from the District's use of the Licence Area nor shall the

Developer be required to remediate any environmental concerns which may result from the District's use of the Licence Area.

17. **Notices** – Any notice or other writing required or permitted to be given to any party shall be sufficiently given if delivered by hand, or if sent by prepaid courier or if transmitted by facsimile to such party:

in the case of a notice to the Developer, at:

0983016 B.C. Ltd.
401 - 37989 Cleveland Avenue
P.O. Box 1068
Squamish, BC V8B 0A7
Attention: Michael Hutchison
mhutchison@bethelcorp.ca

in the case of a notice to the District, at:

DISTRICT OF SQUAMISH
37955 2nd Avenue
Squamish, BC V8B 0A3
Attention: Neil Plumb, Manager of Real Estate
Facsimile: 604-892-1083
Email: nplumb@squamish.ca

or at such other address or addresses as the party to whom such notice or other writing is to be given shall have last notified the party giving the notice in the manner provided in this section. Any notice or other writing sent in compliance with this section shall be deemed to have been given and received on the day it is so delivered unless that day is not a business day, in which case the notice shall be deemed to have been given and received on the next day that is a business day.

18. **Breach** – In the event that the Developer breaches any term, condition, or provision of this Agreement, the Developer shall remedy the breach within 30 days of receipt of a notice from the District and if the breach is not remedied within that time period, all rights accruing to the Developer under this Agreement shall cease without further notice to the Developer, unless the District, in its sole discretion, decides otherwise.
19. **District May Take Action** – If the Developer fails to do any matter required of them under this Agreement, the District is entitled to take all such actions on the Developer's behalf and at the Developer's cost as are reasonably necessary to rectify the Developer's failure, but the District is in no circumstance liable for not taking such action or its manner of doing so, provided that the District acts reasonably. The Developer shall pay to the District the costs the District incurs pursuant to this provision forthwith upon receipt of an invoice.
20. **General**
- (a) This Agreement will enure to the benefit of and be binding upon the Developer and its successors, administrators and approved assigns and upon the District and its

successors, administrators and assigns.

- (b) Every reference to each party is deemed to include the heirs, executors, administrators, corporate successors, servants, employees, agents, contractors, officers, licensees and invitees of such party, wherever the context so requires or permits.
- (c) Wherever the singular or masculine or neuter is used in this Agreement, the same shall be construed as meaning the plural, the feminine or body corporate where the context or the parties thereto so require.
- (d) The Schedules attached to this Agreement form part of this Agreement.
- (e) This Agreement constitutes the entire agreement between the parties and no understanding or agreement, oral or otherwise, exists between the parties with respect to the subject matter of this Agreement except as expressly set out in this Agreement, and this Agreement may not be modified except by subsequent agreement in writing between the parties.
- (f) Time is of the essence of this Agreement.
- (g) The section headings have been inserted for reference only and do not define, limit, alter or enlarge the meaning of any provision of this Agreement.
- (h) The Developer's use of the Licence Area will under all circumstances be viewed as a licence only and will not create nor be deemed to create any property interest in favour of the Developer in the Licence Area.
- (i) If any section, subsection, sentence, clause or phrase in this Agreement is for any reason held to be invalid by the decision of a court of competent jurisdiction, the invalid portion is to be severed and the decision that it is invalid does not affect the validity of the remainder of this Agreement, the parties hereby agreeing that they would have entered into the Agreement without the severed portion.
- (j) The parties hereto shall execute and do all such further deeds, acts, things and assurances that may be reasonably required to carry out the intent of this Agreement.
- (k) This Agreement shall be governed by and construed in accordance with the laws of the Province of British Columbia.

IN WITNESS WHEREOF the parties have executed this Agreement as of the date first above written.

DISTRICT OF SQUAMISH,)
by its authorized signatories:)
)
)
_____)
Mayor)
)
)
_____)
Corporate Administrator)
)

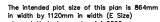
The corporate seal of **0983016 B.C. Ltd.**)
was affixed in the presence of its authorized)
signatories:)
)
)
_____)
Authorized Signatory)
)
_____)
Authorized Signatory)
)

c/s

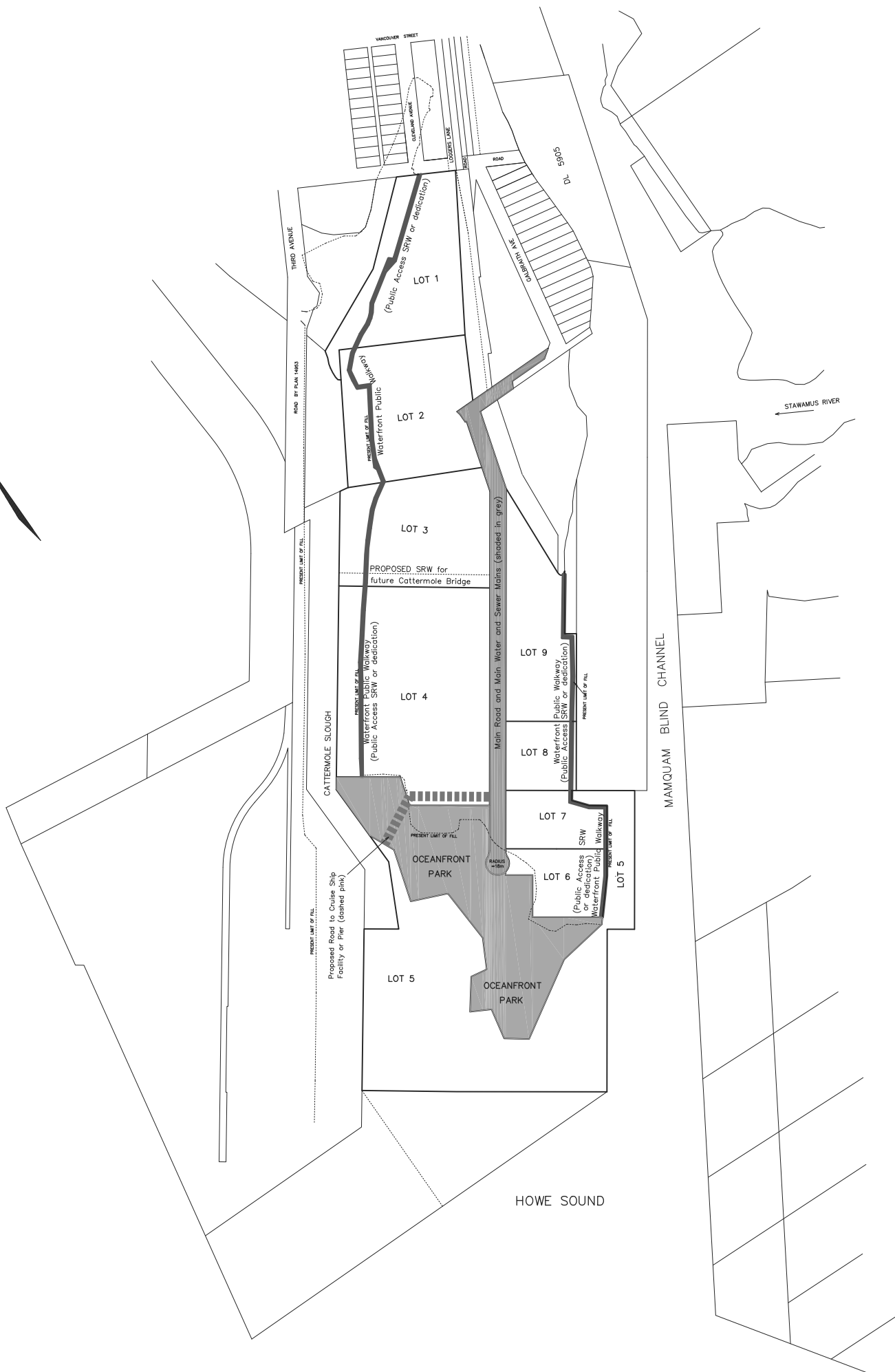
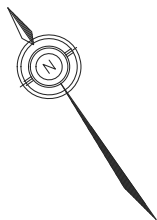
APPENDIX "1"

SITE PLAN

[Shows location of Lots 1 to 9, the Oceanfront Park, and
the access road to the cruise ship facility or pier]



All distances shown are horizontal ground-level distances in metres and decimals thereof, unless otherwise noted.



SCHEDULE I
FLOODPROOFING COVENANT

This Covenant dated for reference the _____ day of _____, 20____

BETWEEN:

DISTRICT OF SQUAMISH
37955 2nd Avenue
Squamish, BC V8B 0A3

(the “**District**”)

AND

0983016 BC LTD.
401 – 37989 Cleveland Avenue
PO Box 1068
Squamish, BC V8B 0A7

(the “**Developer**”)

WHEREAS:

- A. The Developer is the registered owner of those certain lands situated, lying and being in the District of Squamish, in the Province of British Columbia, described in Item 2 of Form C to which these Terms of Instrument are attached (the “**Development Land**”)
- B. The Owner and the District have entered into a Phased Development Agreement (“**Phased Development Agreement**”) dated the _____ day of _____, _____, section 6(d) of which provides that the Developer agrees to apply to register this Covenant under section 219 of the *Land Title Act* in favour of the District against the Development Land;
- C. The Covenant reflects that, further to section 6(d) of the Phased Development Agreement, the Developer’s Qualified Professional prepared a coastal flood hazard assessment to the District (a copy of which is attached as Appendix 1 hereto for background information, but not to qualify or condition any of the provisions of this covenant), which the District’s Qualified Professional subsequently approved as establishing the flood construction level that is to be applicable to all development on the Squamish Oceanfront Lands defined in the Phased Development Agreement, being the Development Land that is the subject of this Covenant;
- D. Section 219 of the *Land Title Act* provides that the Owner may grant a Covenant to the District of a negative or positive nature respecting the use of land; and
- E. The Developer desires to grant this Covenant to restrict the use of the Development Land on the terms and conditions set forth herein;

NOW THEREFORE THIS AGREEMENT WITNESSES that pursuant to Section 219 of the *Land Title Act*, and in consideration of the sum of \$10 of lawful money of Canada and other good and valuable consideration, the receipt of which is hereby acknowledged, the Developer does hereby covenant and agree with the District as follows:

1. Acknowledgement. The Developer is aware of and, on behalf of himself or herself and his or her heirs, executors, administrators, successors and assigns, hereby acknowledges that there is a potential flood danger to the Development Land.
2. Elevation. The Developer, on behalf of himself or herself and his or her heirs, executors, administrators, successors and assigns, hereby covenant and agrees with the District, as a covenant in favour of the District pursuant to section 219 of the *Land Title Act*, it being the intention and agreement of the Developer that the provisions hereof be annexed to and run with and be a charge on the Development Land, that from and after the date hereof no area used for habitation, business or storage of goods damageable by floodwaters shall be located within any building or structure constructed after the date of this Agreement at an elevation such that the underside of the floor system is less than the following levels Geodetic Survey of Canada, for each of the following parcels:

Precinct Parcel #	Applicable Flood Construction Level
1	5.2 m
2	5.2 m
3	5.3 m
4	5.3 m
6	5.5 m
7	5.4 m
8	5.4 m
9	5.3 m

3. Fill. Where landfill is used to raise the natural ground elevation, the required elevation may be achieved by structural elevation of the said habitable, business or storage area or by adequately compacted landfill on which any building or structure is to be constructed or located, or by a combination of both structural elevation and landfill, provided that no area below the required elevation shall be used for the installation of furnaces or other fixed equipment damageable by floodwater.
4. Indemnity and Release. The Developer, on behalf of himself or herself and his or her heirs, executors, administrators, successors and assigns, acknowledges that the District does not represent to the Developer, nor to any other person, that any building, improvement, chattel or other structure, including the contents of any of them, built, constructed, or placed on the Development Land will not be damaged by flooding or erosion, and the Developer, on behalf of himself or herself and his or her heirs, executors, administrators, successors and assigns, with full knowledge of the potential flood or erosion danger hereby
 - (a) agrees to indemnify and to save harmless the District and the District's employees, servants, or agents from all loss, damages, costs, actions, suits debts, accounts, claims and demands which the District or any of the District's employees, servants, or agents

may suffer or incur or be put to arising out of or in connection with any breach of any covenant or agreement on the part of the Developer or his or her heirs, executors, administrators, successors and assigns contained in this Agreement or arising out of or in connection with any personal injury, death, loss or damage to the Development Land, or to any building, improvement, chattel or other structure, including the contents of any of them, built, constructed or placed on the Development Land caused by flooding, erosion or some such similar cause; and

- (b) does remise, release and forever discharge the District and the District's employees, servants, or agents from all manner of actions, causes of action, suits debts, accounts, claims and demands which the Developer or any of his or her heirs, executors, administrators, successors and assigns may have against the District and the District's employees, servants, or for and by reason of any personal injury, death, loss or damage to the Development Land, or to any building, improvement, chattel or other structure, including the contents of any of them, built, constructed or placed on the Development Land caused by flooding, erosion or some such similar cause.
- 5. Run with Lands. This Covenant is granted voluntarily by the Developer to the District pursuant to Section 219 of the *Land Title Act* of the Province of British Columbia and shall run with the Lands.
 - 6. Binding Effect. This Covenant shall enure to the benefit of and be binding upon the parties hereto, their respective successors and permitted assigns, provided however that nothing herein obliges the District to enforce this Agreement.
 - 7. Further Acts. The Developer and the District shall do all further acts as may be necessary for carrying out this Covenant, including without limitation execution of all required documents and any alteration required to achieve registration at the Land Title Office. The Developer agrees to do everything reasonably necessary, at the Developer's expense, to ensure that this Agreement is registered against title to the Land with priority over all financial charges, liens and encumbrances registered, or the registration of which is pending, at the time of application for registration of this Agreement.
 - 8. Severability. If any part of this Agreement is held to be invalid, illegal or unenforceable by a court having the jurisdiction to do so, that part is to be considered to have been severed from the rest of this Agreement and the rest of this Agreement remains in force unaffected by that holding or by the severance of that part.
 - 9. Interpretation. In this Covenant:
 - (b) the headings and captions are for convenience only and do not form a part of this Covenant and will not be used to interpret, define or limit the scope, extent or intent of this Covenant or any of its provisions;
 - (c) the word "including" when following any general term or statement is not to be construed as limiting the general term or statement to the specific items or matters set forth or to similar terms or matters but rather as permitting it to refer to other items or matters that could reasonably fall within its scope;

- (d) a reference to a statute includes every regulation made pursuant thereto, all amendments to the statute or to any such regulation in force from time to time and any statute or regulation that supplements or supersedes such statute or any such regulation;
- (e) a word importing the masculine gender includes the feminine or neuter, and a word importing the singular includes the plural and vice versa; and
- (f) every reference to each party hereto shall be deemed to include the officers, employees, elected officials, agents, servants, successors and assigns of that party.

IN WITNESS WHEREOF the Developer and the District have duly executed this Covenant as of the day, month and year first above written by executing the Form C attached hereto.

APPENDIX "1"

COASTAL FLOOD HARARD ASSESSMENT

[attach report prepared by Tetra Tech EBA Consulting Engineers, dated May 29, 2015]

SCHEDULE J
ENVIRONMENTAL CONTAMINATION COVENANT
(SECTION 219 COVENANT)

THIS AGREEMENT is dated for reference the _____ day of _____, 20____

BETWEEN:

DISTRICT OF SQUAMISH
37955 2nd Avenue
Squamish, BC V8B 0A3

(the "District")

AND:

0983016 BC LTD.
401 – 37989 Cleveland Avenue
PO Box 1068/
Squamish, BC V8B 0A7

(the "Owner")

WHEREAS:

- A. The Owner is the registered owner of those lands and premises situated, lying and being in the District of Squamish, in the Province of British Columbia, described in Item 2 of Form C to which this Terms of Instrument is attached (the "Lands");
- B. Section 219 of the *Land Title Act*, R.S.B.C. 1996, c. 250 and amendments thereto (the "*Land Title Act*"), state that a covenant in favour of a District, may be registered as a charge against the title to the land and is enforceable against the covenantor and its successors in title even if the covenant is not annexed to land owned by the District; and
- C. The Owner wishes to subdivide the Lands, and the Owner has agreed to grant this Section 219 Covenant against the Lands in connection therewith.

NOW, THEREFORE, pursuant to Section 219 of the *Land Title Act* and in consideration of \$1.00 now paid by the District to the Owner, the receipt and sufficiency of which is hereby acknowledged, and of the premises herein contained, the parties covenant and agree as follows:

1. **Owner's Covenant.**

The Owner covenants and agrees with the District that:

- (a) the Owner will only build on the Lands in keeping with the lawful requirements of the

Provincial Ministry of Environment related to contaminated sites and remediation; and

- (b) the Owner will, at the sole expense of the Owner, do or cause to be done all acts reasonably necessary to grant priority to this Agreement over all financial charges and encumbrances which are registered against the title to the Lands in the Lower Mainland Land Title Office, which for greater certainty does not include charges or encumbrances in favour of the District or other governmental authority or those specifically approved in writing by the District.

2. **Indemnity.**

The Owner hereby agrees to indemnify and save harmless the District, and its elected and appointed officials, officers, employees, and agents from and against any loss, damage, debts, claims, liabilities, obligations, costs or causes of action which the District and its elected and appointed officials, officers, employees and agents, or any of them, may suffer, incur, or be put:

- (a) related to the presence of contaminated soils on the Lands or a portion thereof; or
- (b) arising, whether directly or indirectly, out of a breach of any covenant or condition of this Agreement by the Owner or its directors, officers, employees, or agents, or any other person for whom it is legally responsible.

3. **Other.**

It is further understood and agreed between the parties hereto that:

- (a) Covenants run with the Lands: The covenants contained in this Agreement charge the Lands pursuant to Section 219 of the *Land Title Act* and are covenants the burden of which run with the Lands. It is expressly agreed that the benefit of all covenants made by the Owner in this Agreement will accrue solely to the District and this Agreement may only be modified or discharged by agreement of the District, pursuant to the provisions of Section 219(9) of the *Land Title Act*;
- (b) Liability During Currency of Ownership: Notwithstanding anything contained in this Agreement, the Owner will not be liable under any of the covenants contained in this Agreement where such liability arises after the Owner ceases to have any further interest in the Lands;
- (c) Subdivision of Lands: This Agreement burdens and charges any parcel into which the Lands are subdivided by any means and upon which any portion of the Covenant Area is located;
- (d) Notice: Whenever it is required or desired that either party shall deliver or serve a notice on the other, delivery or service shall be deemed to be satisfactory if, and deemed to have occurred when:
 - (i) the Owner or the Corporate Officer of the District has been served personally, on the date of service; or
 - (ii) mailed by prepaid registered mail, on the date received or on the sixth day after

receipt of mailing by any Canada post office, whichever is earlier (except that in the event of interruption of mail service, notice shall be deemed to be delivered only when actually received by the party to whom it is addressed), so long as the notice is mailed to the party at the most recent address shown on title to lands in the records of the Lower Mainland Land Title Office for the party, or to whatever address the parties may from time to time advise in writing;

- (e) No Derogation of Power: Nothing contained or implied herein will prejudice or affect the rights and powers of the District in the exercise of its functions under any public and private statutes, bylaws, orders and regulations, all of which may be fully and effectively exercised in relation to the Lands as if this Agreement had not been executed and delivered by the Owner;
- (f) Applicable Law: This Agreement shall be governed by and construed in accordance with the laws of the Province of British Columbia;
- (g) Number and Gender: Wherever the singular or masculine is used in this Agreement, the same will be construed as meaning the plural, feminine or body corporate or politic where the context of the parties so require;
- (h) Amendments only in Writing: It is expressly agreed that the benefit of all covenants made by the Owner herein shall accrue to the District and that this Agreement may only be modified or discharged by agreement of the District and the Owner witnessed in writing;
- (i) No Duty to Enforce: The Owner hereby covenants and agrees with the District that the District is under no obligation in law or equity to prosecute or enforce the terms of this Agreement in any way;
- (j) Further Documents: The parties will do and cause to be done all things and execute and cause to be executed all documents which may be necessary to give proper effect to the intention of this Agreement; and
- (k) Severance: If any section, subsection, sentence, clause or phrase in this Agreement is for any reason held to be invalid by the decision of a court of competent jurisdiction, the invalid portion will be severed and the provision that is invalid will not affect the validity of the remainder of the Agreement.

IN WITNESS WHEREOF the parties have executed this Agreement on Forms C and D to which this Agreement is attached and which form part of this Agreement, effective as of the date first above written.

SCHEDULE K1
INDUSTRY COVENANT – PRECINCT LOT 4
(SECTION 219 COVENANT)

THIS AGREEMENT dated for reference the ____ day of _____, 20__

BETWEEN:

DISTRICT OF SQUAMISH
37955 2nd Avenue
Squamish, BC V8B 0A3

(the “**District**”)

AND

0983016 BC LTD.
401 – 37989 Cleveland Avenue
PO Box 1068
Squamish, BC V8B 0A7

(the “**Owner**”)

AND:

**HER MAJESTY THE QUEEN IN RIGHT OF THE PROVINCE OF BRITISH COLUMBIA, as
represented by Her Minister of Transportation**
PO BOX 9055
STN PROV GOVT
VICTORIA, BC
V8W 9E2

(the “**Minister**”)

WHEREAS:

- A. The Owner is the registered owner of those certain Lands zoned Marine Centre Flex Zone in the District of Squamish Zoning Bylaw (being those Lands hereinafter defined);
- B. The proximity of the Lands to one or more major industries is such that noise, vibration, light, dust, odours and other disturbances may be generated at significant levels every day at all hours which can adversely affect owners and occupiers; and
- C. Section 219 of the *Land Title Act* permits registration of a covenant in favour of the Province and a municipality in respect of the use of land or the use of a building on or to be erected on land and that land is or is not to be built on except in accordance with the covenant.

Consideration

In consideration of the payment of Ten Dollars (\$10.00), and other good and valuable consideration (the receipt and sufficiency of which is hereby acknowledged and agreed to by the parties), the Owner covenants and agrees with the District and the Minister as follows:

1. **Definitions.** The terms defined in this Section 1 for all purposes of this Agreement, unless otherwise specifically provided herein, shall have the meanings hereinafter specified. The defined terms are:
 - (a) **"Building"** means:
 - (i) any new building, improvement or structure constructed or to be constructed on the Lands; and/or
 - (ii) the conversion or use of an existing building or structure on the Lands for any new use,

that is the subject of an application for a Building Permit following the execution of this Agreement;
 - (b) **"Building Permit"** means a building permit issued by the District applicable to any Building containing residential dwellings;
 - (c) **"Land Title Act"** means the *Land Title Act*, R.S.B.C. 1996, c. 250, and all amendments thereto and re-enactments thereof;
 - (d) **"Lands"** means those lands and premises zoned "Marine Centre Flex Zone" and legally described in Item 2 of the Form C General Instrument Part 1 to which these Terms of Instrument are attached [*Note to Document: This Covenant will be registered against title to Precinct Lot 4*];
 - (e) **"LTO"** means the land title office for the jurisdiction in which the Lands are situate;
 - (f) **"Registered Professional"** means a person specializing in acoustics who meets the definition of "Registered Professional" as defined in the current edition of the British Columbia Building Code, who is selected by the District's General Manager of Development Services and Public Works from a list of three persons proposed by the Owner;
 - (g) **"Report"** has the meaning ascribed thereto in section 2(a).
2. **Section 219 Covenant.** The Owner hereby covenants and agrees with the District and Minister, as a covenant in favour of the District and Minister pursuant to Section 219 of the *Land Title Act*, it being the intention and agreement of the Owner that the provisions hereof be annexed to, run with and be a charge on title to the Lands, and be binding on successors in title, that the Lands shall be used and built on only in compliance with the terms and conditions of this Agreement, and more particularly that:

- (a) no application for a Building Permit shall be submitted in connection with a Building containing or designed to contain residential occupancy until the Owner, at the Owner's cost, has delivered to the District
 - (i) an acoustic report (the "Report"), prepared by a Registered Professional, setting out site-specific industrial noise mitigation measures with regard to residential living spaces in the Building including, as appropriate, both active and passive measures; and
 - (ii) a statement setting out how such measures have been incorporated into the Building as applied for,

and it is acknowledged by the Owner that the restrictions set forth in this section 2(a) are in addition to and not in substitution for any restrictions set out in the bylaws of the District (subject to the grandparenting provided for in any applicable Phased Development Agreement);

- (b) no residential living space in any Building constructed or renovated on the Lands shall be occupied or used for any purpose and the Owner shall not take any action, directly or indirectly, to compel the issuance of a Final Inspection Notice or Occupancy Permit in respect of any such residential living space constructed or renovated on the Lands, and the District shall be under no obligation to issue any Final Inspection Notice or Occupancy Permit in respect of any such residential living space constructed or renovated on the Lands, unless and until the Owner has, at the Owner's cost, provided to the District certification from the Registered Professional that prepared the Report, or such other Registered Professional as the District's General Manager of Development Services and Public Works may approve, that such residential living space has been constructed or renovated in accordance with the measures set out in the Report;
- (c) the Owner shall include in every disclosure statement, every purchase and sale agreement for a residential dwelling unit, and every lease of a residential dwelling unit to a tenant having a term of more than one year, an accurate summary of this Agreement and incorporate in any such purchase and sale agreement and any such lease an explicit acknowledgement that the purchaser or tenant, as applicable, has read and understood such summary;
- (d) the Owner acknowledges and agrees that the proximity of the Lands to major industry is such that noise, vibration, light, dust, odours and other disturbances may be generated at significant levels every day at all hours which can adversely affect owners and occupiers and that such noise and other disturbances may occur at volumes which might not otherwise occur in other neighborhoods and which some owners and occupiers may find disruptive;
- (e) as an integral part of this Section 219 covenant, the Owner agrees to waive, remise, release, indemnify and save harmless the District, Minister and the District and Ministerial Personnel (including elected officials, officers, employees, agents and contractors) from and against all losses, damages, costs (including, without limitation, legal costs), expenses, actions, suits, debts, accounts, claims and demands, including,

without limitation, any and all claims of third parties, which the District or Minister may suffer, incur or be put to arising out of or in any way related to or in connection with, directly or indirectly, or that would not or could not have occurred but for any of the following:

- (i) this Agreement;
- (ii) any breach by the Owner of any covenant contained in this Agreement; or
- (iii) any personal injury, death or damage occurring in or on the Lands, or any damage to any Building, including, without limitation, the contents of any Building built, constructed, renovated or placed on the Lands, caused by noise, vibration, light, dust, odours or other nuisances or disturbances resulting from industry.

The indemnity and release set out in section 2(d) of this Agreement shall be an integral part of the Section 219 Covenant granted hereby and shall survive the discharge or termination of this Agreement

3. **Notices.** Any notice given under this Agreement shall be in writing and may be given by delivering such notice, approval or request to a representative of the party for whom it is intended, either by personal delivery or by facsimile transmission, or by mailing such notice, approval or request by prepaid registered mail from any post office in British Columbia as follows:

- (a) in the case of the Owner, to the address as set out on the title for the Lands; and
- (b) in the case of the District addressed to it at:

District of Squamish
37955 2nd Avenue , Squamish, BC V8B 0A3

Attention: General Manager of Development Services and Public
Works Fax No.: (604-892-1083),

- (c) in the case of the Minister, to:

1500 Woolridge Street #310, Coquitlam, BC V3K 0B8

or to such other address as the parties may from time to time advise by notice in writing. Any such notice, approval or request shall be deemed to have been received on the date of delivery of such notice, approval or request, on the first business day following a receipted facsimile transmission if sent by facsimile, or, on the third business day next following the date of such mailing if mailed as aforesaid, provided that if mailed should there be, between mailing and the actual receipt of such notice, approval or request, a mail strike, slowdown or other labour dispute which might affect the delivery of such notice, approval or request, such notice, approval or request shall only be effective if actually delivered.

4. **Miscellaneous.**

- (a) The Owner agrees to cause the registrable interest in land expressly agreed to be granted pursuant to this Agreement to be registered as a first registered charge against the Lands, save only for any reservations, liens, charges or encumbrances:
 - (i) contained in any grant from Her Majesty the Queen in Right of the Province of British Columbia respecting the Lands.
 - (ii) registered against title to the Lands at the instance of the District, whether in favour of the District or otherwise.
- (b) The parties agree that neither the Owner, nor any successor in title to the Lands, or portions thereof, will be liable for breaches of or non-observance or non-performance of covenants contained in this Agreement occurring after the date that the Owner or its successor in title, as the case may be, ceases to be the registered or beneficial owner of the Lands; provided however, the Owner or its successors in title, as the case may be, shall remain liable after ceasing to be the registered or beneficial owner of the Lands for all breaches of and non-observance and non-performance of covenants in this Agreement if the breach, non-observance or non-performance occurred prior to the Owner or any successor in title, as the case may be, ceasing to be the registered or beneficial owner of the Lands.
- (c) Nothing contained or implied in this Agreement shall fetter in any way the discretion of the District or the Council of the District. Further, but subject to any Phased Development Agreement registered against title, nothing contained or implied in this Agreement shall derogate from the obligations of the Owner under any other agreement with the District or, if the District so elects, prejudice or affect the District's rights, powers, duties or obligations in the exercise of its functions pursuant to the *Community Charter* or the *Local Government Act*, as amended from time to time and the rights, powers, duties and obligations of the District under all public and private statutes, by-laws, orders and regulations, which may be, if the District so elects, as fully and effectively exercised in relation to the Lands as if this Agreement had not been executed and delivered by the Owner and the District.
- (d) The Owner represents and warrants to and covenants and agrees with the District and Minister that:
 - (i) it has the full and complete power and authority to enter into, execute and deliver this Agreement;
 - (ii) this Agreement shall be fully and completely binding upon the Owner in accordance with the terms hereof and the Owner shall perform all of its obligations under this Agreement in accordance with the terms hereof; and
 - (iii) the foregoing representations, warranties, covenants and agreements shall have force and effect notwithstanding any knowledge on the part of the District whether actual or constructive concerning the status of the Owner with regard to the Lands or any other matter whatsoever.

- (e) In any action to enforce this Agreement in which any Court determines that the position of the District or Minister shall prevail, the District or Minister, as applicable, shall be entitled to court costs on a solicitor/client basis.
- (f) The following provisions shall apply to this Agreement:
 - (i) the laws of British Columbia are to govern its interpretation and enforcement;
 - (ii) each of the parties accepts the jurisdiction of the courts of British Columbia;
 - (iii) if a Court finds any provision invalid, illegal, or unenforceable, and severs it from the remainder of this Agreement, the remaining provisions are to remain in force and effect;
 - (iv) time shall be of the essence, and if a party expressly or impliedly waives that requirement, the party may reinstate it by delivering notice to the other;
 - (v) waiver of a default by a party or failure or delay by a party in exercising a right or remedy does not mean that the party waives any other default or that the party has waived its right to exercise such right or remedy;
 - (vi) no amendment is to have any force or effect unless the District, Minister and the Owner have signed it;
 - (vii) this Agreement represents the entire agreement between the District, Minister and the Owner regarding the matters set out in this Agreement, and supersedes all prior agreements, letters of intent, or understandings about those matters;
 - (viii) any reference to a statute is to the statute and its regulations in force on the date the Owner signs the Form C, and to subsequent amendments to or replacements of the statute or regulations;
 - (ix) the exercise of any particular remedy by the District or the Owner under this Agreement or at law or at equity shall not prejudice or preclude that party from invoking or exercising any other remedy, and no remedy shall be exclusive, and each of the District, Minister or the Owner may exercise all of its remedies independently or in combination and, in particular, the Owner acknowledges that specific performance, injunctive relief (mandatory or otherwise), or other equitable relief may be the only adequate remedy for a default by the Owner under this Agreement;
 - (x) the Owner shall execute and deliver to the District and Minister, on request by the District or Minister from time to time, such further assurances and instruments as the District or Minister may require to give full force and effect to the Owner's grants and agreements under this Agreement; and

- (xi) if the Owner consists of more than one person, firm, or corporation, the Owner's obligations under this Agreement shall be joint and several.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement on the General Instrument – Part 1, which is a part hereof.

PRIORITY AGREEMENT

_____ (the "Chargeholder") is the holder of a mortgage and assignment of rents encumbering the Lands which mortgage and assignment of rents were registered in the LTO under number _____, ("the Bank Charge").

The Chargeholder, being the holder of the Bank Charge, by signing the Form C General Instrument attached hereto as Part I, in consideration of the payment of Ten Dollars (\$10.00) and other good and valuable consideration (the receipt and sufficiency of which is hereby acknowledged and agreed to by the Chargeholder) hereby consents to the granting of this Section 219 Covenant and hereby covenants that this Section 219 Covenant shall bind the Bank Charge in the Lands and shall rank in priority upon the Lands over the Bank Charge as if the Section 219 Covenant had been registered prior to the Bank Charge and prior to the advance of any monies pursuant to the Bank Charge. The grant of priority is irrevocable, unqualified and without reservation or limitation.

END OF DOCUMENT

SCHEDULE K2

**INDUSTRY COVENANT – OTHER PRECINCT PARCELS
(SECTION 219 COVENANT)**

THIS AGREEMENT dated for reference the ____ day of _____, 20

BETWEEN:

DISTRICT OF SQUAMISH

37955 2nd Avenue
Squamish, BC V8B 0A3

(the “**District**”)

AND

0983016 BC LTD.

401 – 37989 Cleveland Avenue
PO Box 1068
Squamish, BC V8B 0A7

(the “**Owner**”)

AND:

**HER MAJESTY THE QUEEN IN RIGHT OF THE PROVINCE OF BRITISH COLUMBIA, as
represented by Her Minister of Transportation**

PO BOX 9055
STN PROV GOVT
VICTORIA, BC
V8W 9E2

(the “**Minister**”)

WHEREAS:

- A. The Owner is the registered owner of those certain Lands in the District of Squamish (being those Lands hereinafter defined);
- B. Section 219 of the *Land Title Act* permits registration of a covenant in favour of the Province and a municipality in respect of the use of land or the use of a building on or to be erected on land and that land is or is not to be built on except in accordance with the covenant.

Consideration

In consideration of the payment of Ten Dollars (\$10.00), and other good and valuable consideration (the receipt and sufficiency of which is hereby acknowledged and agreed to by the parties), the Owner covenants and agrees with the District and Minister as follows:

1. **Definitions.** The terms defined in this Section 1 for all purposes of this Agreement, unless otherwise specifically provided herein, shall have the meanings hereinafter specified. The defined terms are:
 - (a) **"Building"** means:
 - (i) any new building, improvement or structure constructed or to be constructed on the Lands; and/or
 - (ii) the conversion or use of an existing building or structure on the Lands for any new use,

that is the subject of a building permit application following the execution of this Agreement;
 - (b) **"Land Title Act"** means the *Land Title Act*, R.S.B.C. 1996, c. 250, and all amendments thereto and re-enactments thereof;
 - (c) **"Lands"** means those lands and premises legally described in Item 2 of the Form C General Instrument Part 1 to which these Terms of Instrument are attached; and
 - (d) **"LTO"** means the land title office for the jurisdiction in which the Lands are situate.
2. **Section 219 Covenant.** The Owner hereby covenants and agrees with the District and Minister, as a covenant in favor of the District and Minister pursuant to Section 219 of the *Land Title Act*, it being the intention and agreement of the Owner that the provisions hereof be annexed to, run with and be a charge on title to the Lands, and be binding on successors in title, that the Lands shall be used and built on only in compliance with the terms and conditions of this Agreement, and more particularly that:
 - (a) the Lands and any Building on or to be erected on the Lands shall not be used for any of the following purposes:
 - (i) casino;
 - (ii) shooting range;
 - (iii) medical marihuana grow operation;
 - (iv) gasoline service station for sale or distribution of inflammable fuel oils, except for marine purposes;
 - (v) propane transfer facilities;

and it is acknowledged by the Owner that the restrictions set forth in this section 2(a) may be in addition to and not in substitution for any restrictions set out in the bylaws of the District (subject to the grandparenting provided for in any applicable Phased Development Agreement) or the laws of the Province of British Columbia;

- (b) the Owner shall include in every disclosure statement, every purchase and sale agreement for a residential dwelling unit, and every lease of a residential dwelling unit to a tenant having a term of more than one year, an accurate summary of this Agreement and incorporate in any such purchase and sale agreement and any such lease an explicit acknowledgement that the purchaser or tenant, as applicable, has read and understood such summary;
- (c) the Owner acknowledges and agrees that the proximity of the Lands to major industry is such that noise, vibration, light, dust, odours and other disturbances may be generated at significant levels every day at all hours which can adversely affect owners and occupiers and that such noise and other disturbances may occur at volumes which might not otherwise occur in other neighborhoods and which some owners and occupiers may find disruptive;
- (d) as an integral part of this Section 219 covenant, the Owner agrees to waive, remise, release, indemnify and save harmless the District and Minister and the District and Ministerial Personnel (including elected officials, officers, employees, agents and contractors) from and against all losses, damages, costs (including, without limitation, legal costs), expenses, actions, suits, debts, accounts, claims and demands, including, without limitation, any and all claims of third parties, which the District or Minister may suffer, incur or be put to arising out of or in any way related to or in connection with, directly or indirectly, or that would not or could not have occurred but for any of the following:
 - (i) the prohibition of the uses described in section 2(a) on the Lands or in a Building on or to be erected on the Lands;
 - (ii) this Agreement;
 - (iii) any breach by the Owner of any covenant contained in this Agreement; or
 - (iv) any personal injury, death or damage occurring in or on the Lands, or any damage to any Building, including, without limitation, the contents of any Building built, constructed, renovated or placed on the Lands, caused by noise, vibration, light, dust, odours or other nuisances or disturbances resulting from industry.

The indemnity and release set out in section 2(d) of this Agreement shall be an integral part of the Section 219 Covenant granted hereby and shall survive the discharge or termination of this Agreement

3. **Notices.** Any notice given under this Agreement shall be in writing and may be given by delivering such notice, approval or request to a representative of the party for whom it is intended, either by personal delivery or by facsimile transmission, or by mailing such

notice, approval or request by prepaid registered mail from any post office in British Columbia as follows:

- (a) in the case of the Owner, to the address as set out on the title for the Lands; and
- (b) in the case of the District addressed to it at:

District of Squamish
37955 2nd Avenue, Squamish, BC V8B 0A3

Attention: General Manager of Development Services and Public
Works Fax No.: (604-892-1083),

- (c) in the case of the Minister, to:

1500 Woolridge Street #310, Coquitlam, BC V3K 0B8

or to such other address as the parties may from time to time advise by notice in writing. Any such notice, approval or request shall be deemed to have been received on the date of delivery of such notice, approval or request, on the first business day following a receipted facsimile transmission if sent by facsimile, or, on the third business day next following the date of such mailing if mailed as aforesaid, provided that if mailed should there be, between mailing and the actual receipt of such notice, approval or request, a mail strike, slowdown or other labour dispute which might affect the delivery of such notice, approval or request, such notice, approval or request shall only be effective if actually delivered.

4. **Miscellaneous.**

- (a) The Owner agrees to cause the registrable interest in land expressly agreed to be granted pursuant to this Agreement to be registered as a first registered charge against the Lands, save only for any reservations, liens, charges or encumbrances:
 - (i) contained in any grant from Her Majesty the Queen in Right of the Province of British Columbia respecting the Lands.
 - (ii) registered against title to the Lands at the instance of the District, whether in favour of the District or otherwise.
- (b) The parties agree that neither the Owner, nor any successor in title to the Lands, or portions thereof, will be liable for breaches of or non-observance or non-performance of covenants contained in this Agreement occurring after the date that the Owner or its successor in title, as the case may be, ceases to be the registered or beneficial owner of the Lands; provided however, the Owner or its successors in title, as the case may be, shall remain liable after ceasing to be the registered or beneficial owner of the Lands for all breaches of and non-observance and non-performance of covenants in this Agreement if the breach, non-observance or non-performance occurred prior to the Owner or any successor in title, as the case may be, ceasing to be the registered or beneficial

owner of the Lands.

- (c) Nothing contained or implied in this Agreement shall fetter in any way the discretion of the District or the Council of the District. Further, but subject to any Phased Development Agreement registered against title, nothing contained or implied in this Agreement shall derogate from the obligations of the Owner under any other agreement with the District or, if the District so elects, prejudice or affect the District's rights, powers, duties or obligations in the exercise of its functions pursuant to the *Community Charter* or the *Local Government Act*, as amended from time to time and the rights, powers, duties and obligations of the District under all public and private statutes, by-laws, orders and regulations, which may be, if the District so elects, as fully and effectively exercised in relation to the Lands as if this Agreement had not been executed and delivered by the Owner and the District.
- (d) The Owner represents and warrants to and covenants and agrees with the District and Minister that:
 - (i) it has the full and complete power and authority to enter into, execute and deliver this Agreement;
 - (ii) this Agreement shall be fully and completely binding upon the Owner in accordance with the terms hereof and the Owner shall perform all of its obligations under this Agreement in accordance with the terms hereof; and
 - (iii) the foregoing representations, warranties, covenants and agreements shall have force and effect notwithstanding any knowledge on the part of the District whether actual or constructive concerning the status of the Owner with regard to the Lands or any other matter whatsoever.
- (e) In any action to enforce this Agreement in which any Court determines that the position of the District or Minister shall prevail, the District or Minister, as applicable, shall be entitled to court costs on a solicitor/client basis.
- (f) The following provisions shall apply to this Agreement:
 - (i) the laws of British Columbia are to govern its interpretation and enforcement;
 - (ii) each party accepts the jurisdiction of the courts of British Columbia;
 - (iii) if a Court finds any provision invalid, illegal, or unenforceable, and severs it from the remainder of this Agreement, the remaining provisions are to remain in force and effect;
 - (iv) time shall be of the essence, and if a party expressly or impliedly waives that requirement, the party may reinstate it by delivering notice to the other;
 - (v) waiver of a default by a party or failure or delay by a party in exercising a right or remedy does not mean that the party waives any other default or that the party has waived its right to exercise such right or remedy;

- (vi) no amendment is to have any force or effect unless the parties have signed it;
- (vii) this Agreement represents the entire agreement between the parties regarding the matters set out in this Agreement, and supersedes all prior agreements, letters of intent, or understandings about those matters;
- (viii) any reference to a statute is to the statute and its regulations in force on the date the Owner signs the Form C, and to subsequent amendments to or replacements of the statute or regulations;
- (ix) the exercise of any particular remedy by a party under this Agreement or at law or at equity shall not prejudice or preclude that party from invoking or exercising any other remedy, and no remedy shall be exclusive, and each of the parties may exercise all of its remedies independently or in combination and, in particular, the Owner acknowledges that specific performance, injunctive relief (mandatory or otherwise), or other equitable relief may be the only adequate remedy for a default by the Owner under this Agreement;
- (x) the Owner shall execute and deliver to the District and Minister, on request by the District or Minister from time to time, such further assurances and instruments as the District or Minister may require to give full force and effect to the Owner's grants and agreements under this Agreement; and
- (xi) if the Owner consists of more than one person, firm, or corporation, the Owner's obligations under this Agreement shall be joint and several.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement on the General Instrument – Part 1, which is a part hereof.

PRIORITY AGREEMENT

_____ (the "Chargeholder") is the holder of a mortgage and assignment of rents encumbering the Lands which mortgage and assignment of rents were registered in the LTO under number _____, ("the Bank Charge").

The Chargeholder, being the holder of the Bank Charge, by signing the Form C General Instrument attached hereto as Part I, in consideration of the payment of Ten Dollars (\$10.00) and other good and valuable consideration (the receipt and sufficiency of which is hereby acknowledged and agreed to by the Chargeholder) hereby consents to the granting of this Section 219 Covenant and hereby covenants that this Section 219 Covenant shall bind the Bank Charge in the Lands and shall rank in priority upon the Lands over the Bank Charge as if the Section 219 Covenant had been registered prior to the Bank Charge and prior to the advance of any monies pursuant to the Bank Charge. The grant of priority is irrevocable, unqualified and without reservation or limitation.

END OF DOCUMENT

SCHEDULE L
ESTUARY MANAGEMENT PLAN

Squamish Estuary Management Plan

1999

Background

1.1 Introduction

The Squamish Estuary is located in the District of Squamish at the head of Howe Sound, about 50 kilometers north of Vancouver, British Columbia ([Figures 1 & 1A](#)).

In response to development proposals over the years there have been a series of initiatives aimed at finding a satisfactory balance between protecting the area's biological productivity and achieving its economic potential. This document is supplemental to the 1992 Squamish Estuary Plan. It summarizes the most recent conclusions and recommendations of a multi-disciplinary team and incorporates several changes to the previous plan based on concerns and recommendations raised by various stakeholder groups. In brief, that team recommends that 579 ha (1432 acres) of the estuary be protected as a part of a 591 ha (1460 acre) Wildlife Management Area, that 350 ha (866 acres) be designated for industrial/commercial development (including related transportation corridors) and that a further 8 ha (20 acres) undergo further planning and analysis before a final designation is made.

For further information on the Plan and its evolution, there are four companion documents:

- The 1992 Squamish Estuary Management Plan, October 1992 (Revised August 1993)
- In Transition - The Squamish Estuary Management Plan 1982 - 1992
- You Asked I & II - Responses to the Public Issues Raised During Revision to the 1982 Squamish Estuary Management Plan
- The 1982 Squamish Estuary Management Plan

1.2 The 1982 Plan

In 1979 a management plan was commissioned by the federal Minister of Fisheries and Oceans and the provincial Minister of Environment. That plan, completed in 1982, ([Figure 2](#)) designated 394 ha (974 acres) for conservation, 271 ha (670 acres) for industrial development, and 258 ha (638 acres) for further assessment, totalling 923 ha (2282 acres), prior to land use designation.

The 1982 Plan also resulted in the formation of the Squamish Estuary Coordinating Committee (SECC). The SECC is a multi-agency group whose purpose is to link government, industry and private interests in guiding land and water uses in the Squamish Estuary. The SECC consists of:

- BC Environment
- BC Lands
- BC Rail
- District of Squamish
- Department of Fisheries and Oceans
- Environment Canada
- Ministry of Small Business, Tourism and Culture

1.3 The 1992 Plan

In 1992 the Squamish Estuary Coordinating Committee (SECC) brought forward a revised plan. Information on the evolution of the 1982 Plan into the 1992 plan is provided in *In Transition - The Squamish Estuary Management Plan 1982 - 1992*. The 1992 Plan (Figure 3) resolved much of the area designated for further planning and as a result, increased the area designated for conservation to 549ha (1356 acres), increased the area designated for industrial development including transportation corridors to 378 ha (934 acres) and reduced the area requiring further planning to just 8 ha (20 acres), totalling 935 ha (2310 acres).

Although the 1992 Plan was endorsed by all SECC member agencies, for a variety of reasons, it was never implemented and the estuary continued to be managed in accordance with the 1982 Plan.

1.4 The 1999 Plan

This 1999 Plan (Figure 4) reflects a further refinement of the 1992 Plan in terms of land uses in the estuary in response to the input of the Squamish Nation and in recognition of community concerns with the previous plan's designation of the environmentally sensitive Site A for industrial development. In this revised plan, the area designated for conservation has been increased to 579 ha (1432 acres), the area designated for development has been decreased to 350 ha (866 acres) and the area requiring further planning remains at 8 ha (20 acres), totalling 937 ha (2318 acres)*.

* Discrepancies in the total plan area between 1982 and 1999 are the result of more detailed surveys.

The Setting

2.1 The Squamish Estuary

The Squamish Estuary Management Plan area is about 935 hectares (2,310 acres) in size (Figure 4). The Squamish and Stawamus Rivers meet the sea in the Squamish estuary. Together with its major tributaries, the Squamish River drains 3589 square kilometers of coastal rainforest and the Stawamus, River drains 62 square kilometers. The estuary contains both important natural habitat areas and offers important economic development

opportunities.

The estuary features extensive marshland, sand and mudflats intersected by the main channel of the Squamish River, the Mamquam Blind Channel, smaller flood channels and intertidal drainage channels. Mixed deciduous and coniferous trees have established themselves on the higher, periodically flooded uplands. Toward the sea grow both pure and mixed plant communities dominated by the sedges, grasses and rushes typical of areas inundated by fresh or brackish water. Wildlife found in the estuary include swans, ducks, shorebirds, eagles, hawks, songbirds, field mice, muskrats, rabbits, raccoons and occasionally deer, coyotes and black bears. Fish found in the Squamish River system include chum, chinook, coho and pink salmon, steelhead trout, sea run cutthroat trout, and Dolly Varden char. Biological studies of the estuary are available for public review in the Information Bank at the Squamish Public Library.

In terms of economic development, the estuary offers a rare opportunity to link the BC Rail mainline with accessible tidewater and develop a new marine terminal. In addition the forestry industry, an important component of the local economy, makes extensive use of the Mamquam Channel for log handling. Fishing and recreation are also important to the economy of Squamish. The river supports commercial, recreational and aboriginal food fisheries. Recreational uses of the estuary include nature observation, hunting, boating, windsurfing and hiking. Finally, the Mamquam waterfront also offers residential and commercial development opportunities that have been strongly identified in the District of Squamish's Official Community Plan.

2.2 The Constraints

Resolution of land use issues in the estuary is complicated by environmental and economic considerations and sometimes conflicting jurisdictional authorities. Three different levels of government (federal, provincial, and local) hold varying and sometimes overlapping jurisdictional authority in the Squamish Estuary. Decisions made by these agencies, whose mandates are often narrowly defined, can and sometimes do conflict. Planning must both work within this jurisdictional complexity and provide a means of resolving jurisdictional conflicts.

The most pressing environmental consideration is the retention of sufficiently large unbroken areas of natural habitat to support the estuarine ecology. Clean and fresh water flows that ensure adequate water circulation throughout the basin are vital to this ecosystem. According to studies, the central basin offers the greatest potential for restoring and developing salmonid rearing habitat in the Squamish estuary.

Fundamental to economic development in the Squamish harbour is the need for clarity regarding which areas can be developed and under what conditions or prescriptive measures for environmental protection. Additional facilities for transportation, port back up and long term port development are also needed to help meet expected provincial demand for both inbound and offshore product movement. Tidewater booming, storage and transportation sites for logs need to be ensured and the growing demand for marinas

and public boat launch ramps needs to be met.

Any development must maintain the flood capacity of the main channel of the Squamish River.

2.3 Log Handling Facilities

Log handling facilities are required in the Squamish estuary by all logging companies operating in the Squamish Forest District. They are used for processing of logs from harvested sites, as well as resorting and re-handling logs from sources outside of Squamish. Logs are brought in from areas outside Squamish either by towing up Howe Sound for dewatering and resorting in Squamish, or from the Interior by rail or truck for trading on the coast. Logs are then shipped to market either by booming and towing, or in a few cases, by rail or truck

Log handling facilities in the Squamish Estuary have been an integral part of the forest industry in the Squamish Forest District since the beginning of logging. Squamish's location on the lower coast, and availability of the rail line offers unique advantages to local logging companies.

Approximately 800,000 m³ of logs are annually sorted and boomed from within the Squamish Forest District (Soo TSA and TFL 38). In addition, about 500,000 m³ is brought into the district from Howe Sound, dewatered, and resorted and a small volume of timber imported from the Interior. Most logs are transported to Squamish and as such, most log handling areas rely on access to tidewater for transporting logs to market.

There are presently 10 waterfront sites in Squamish. Three sites are strictly dump sites and the other seven are combination sorting, dumping and booming sites. The Ministry of Forests and the forest industry are dependent on the continued availability of log handling sites, particularly foreshore areas for dumping and booming logs. The availability of sites is limited because of the rugged terrain, environmental sensitivity and current land zoning. Current and future options are expected to diminish unless steps are taken to secure these sites.

The Squamish Estuary Management Plan calls for the phase-out of the West-Barr log handling facility on the west side of the estuary. On implementation of the SEMP, this site is proposed for closure after a period of 15 years. During this period West-Barr and the appropriate government agencies will work together to find a suitable replacement for the West-Barr site. The plan permits operations to continue around the downtown area, on the east and west side of Howe Sound and the lower Mamquam Blind Channel.

All downtown sites are currently zoned industrial, though the Official Community Plan indicates future zoning of commercial and residential along Loggers Lane. As waterfront values continue to increase, so will the pressure to develop the waterfront for non-industrial uses. In order to adjust to loss of land on the waterfront the industry will need to increase the handling capacity of the remaining sites by combining boom

reconfiguration with more efficient technology. In order to adjust to the loss of land on the waterfront the industry will need to secure an assured long-term upland dryland sort and merchandizing area in the Cheekeye Fan of approximately 40 hectares with access to highway and rail.

The Ministry of Forests and the forest industry believe it is vital to secure an upland dryland sort and maintain no less than two assured long-term suitable waterfront sites that can accommodate a multitude of lift and lower machines with protected foreshore of no less than 20 hectares and suitable adjoining upland of no less than 12 hectares as well as 36 hectares for boom tie-ups, located mainly outside of the SEMP area.

Squamish Estuary Management Plan 1999

3.1 Introduction

In developing the 1999 Squamish Estuary Management Plan (SEMP), the SECC has strived to achieve a balance between environmental and developmental opportunities in the Plan area - the two principle objectives of the planning process and the Plan are to ensure that:

- ecological diversity and environmental quality are sustained in an intact ecological unit comprising physical and biological features representative of the original Squamish River estuary; and
- sufficient land and water area is allocated to enable industrial, commercial, recreational, transportation-related and other development to proceed in order to strengthen the economic base of the community.

Accordingly, areas of the estuary have been designated as Conservation or Industrial/Commercial ([Figure 5](#)) to clarify land and water use intentions and establish a balance between environmental conservation and economic development. A Transportation Corridor has been designated to meet future road and rail access needs.

3.2 Area Designations

The areas designated Conservation, Industrial/Commercial, Transportation and Planning Assessment are shown in [Figure 5](#). Development is directed to the east side of the estuary and conservation to the west. The Habitat Compensation Agreement ensures that loss of habitat in the Industrial/Commercial area is compensated by enhancement of habitat in the Conservation area and by expansion and protection of the Conservation area through transfer of land title to the Crown. In this way, compensation for habitat loss in the Industrial/Commercial area is carried out on an area-wide instead of a projectspecific basis.

Small boundary changes may be required and allowed without the necessity of plan amendment. Like all project proposals, any such change in any one of the designated areas would have to go through the project review process outlined later in this plan.

Habitat compensation may be required.

3.2.1. Conservation

The conservation areas are dedicated to the maintenance and enhancement of fish and wildlife habitat.

The conservation areas comprise 579 ha (1432 acres) which will be protected and dedicated to the maintenance and enhancement of fish and wildlife habitat. Uses, which do not impair the natural productivity of the estuary, such as public access for education and recreation (including windsurfing), will be allowed and encouraged, where compatible with environmental concerns. Municipal infrastructure such as waterlines, sewer lines, dykes and existing roads are also an allowed use.

Activities required to repair and maintain dykes, maintain flood capacity of the main channel of the Squamish River, as per the District of Squamish Flood Hazard Management Plan, May 1994, Klohn Leonoff Consultants, and to maintain municipal infrastructure are permitted in accordance with the MELP-DFO provincial guidelines for dyke maintenance, to minimize detrimental environment impacts. These works are generally not expected to result in harmful effects to fish and are not generally expected to require habitat compensation. Some works (i.e., enlargement of a dyke footprint or significant dredging) may however, need to be further assessed and may ultimately require compensation.

A Wildlife Management Area (WMA) comprising 561 ha (1386 acres) ([Figure 6](#)) encompassing the conservation area, and extending beyond the western boundary of the Plan area, will be created and managed by Ministry of Environment, Lands and Parks in conjunction with local interest groups including the Squamish First Nation. An additional 30 ha (74 acres) will be transferred to the Squamish Nation and placed under a restrictive "Wildlife Management" covenant to ensure it is managed in a manner consistent with the conservation objectives of the WMA. Management objectives for both areas focus on maintaining and enhancing the productive capacity of the estuary and dealing with public access issues will be developed in consultation with the public when the WMA is established.

3.2.2 Industrial/Commercial

The Industrial/Commercial areas are dedicated to industrial, commercial and other forms of development.

The industrial/commercial area comprises 350 hectares (866 acres) and is dedicated to industrial, commercial and other forms of development including necessary transportation infrastructure ([Figure 7](#)). A deep-water port, together with essential support facilities, is expected to be developed on the east side of the estuary at the mouth of the Mamquam Blind Channel. This area will also accommodate a log handling and watering facility. The rest of the industrial/commercial area is available for industrial, commercial

and related uses. The plan recognizes and supports the District of Squamish's objectives of creating a pedestrian access (boardwalk), and maintaining flood protection along the Mamquam Blind Channel.

Development in the industrial/commercial area is subject to environmental impact avoidance and mitigation, such as relocation, redesign and construction tin-Ling considerations and water quality regulation on a project specific basis. Habitat loss need not be compensated since compensation will be carried out on an area-wide basis as outlined in the Habitat Compensation Agreement.

Within the Industrial/Commercial area, consideration is given to three special land uses: buffers, storm water detention and control, and pedestrian links. Buffers are strips of land which are left in their natural state. [Figure 12](#) shows where they will be established to provide distance, noise protection, and visual separation from Industrial/Commercial sites. Buffers also help to protect adjacent natural habitat and processes and may contain nature trails. Depending upon its location, a buffer will extend at least 30 meters from the shore's high water line, the centre line of the dendritic channel, or the centre line of the dyke. In each case the line in question will have to be legally surveyed when development is proposed in the adjacent area.

Access to the Malamute is achieved in the vicinity of Site B and this issue should be considered in the eventual port design.

Cattermole Basin provides flood and drainage relief for the District of Squamish. This function will always be maintained. This Industrial/Commercial area win only be developed following the District of Squamish's approval, which will be based upon studies ensuring that future requirements for storm water detention and flood control can be met. If the basin is altered, the new design will allow for plant growth along the basin's edge.

3.2.3. Transportation Corridor

The Transportation corridor is for future road and rail transportation if and when needed.

A 60 metre wide transportation corridor for future road and rail infrastructure has been established along the western edge of the development area. This corridor will be kept in its natural state and protected under the Fisheries Act. Any proposed road and/or rail development will be reviewed under the Squamish Estuary Project Review Process. Design of the road and/or rail infrastructure will be undertaken concurrently and cooperatively by the District of Squamish and BC Rail to minimize the loss of habitat however, this development may require that some of the existing channel area in the central basin or at the southern end of the transportation corridor be filled in which case compensation will be required for habitat losses. The proposed new road will need to connect to the existing downtown street network and BC Rail will be required to dedicate streets as necessary to accommodate such connection(s). Consideration will be given to

aligning future road and rail works to the east side of the existing lead track to Squamish Terminals, to the south of the existing wye tracks, subject to economic and environmental impacts as well as engineering feasibility.

3.2.4. Planning Assessment

The Planning Assessment area is one for which further planning and assessment is needed before it can be redesignated.

This review should be undertaken as a priority activity following implementation of the Plan. Additional study, data collection and public consultation are needed to enable balanced consideration of social, environmental and economic factors. In the meantime, projects proposed for the Planning Assessment area will be reviewed on an individual basis. The environmental assessment will be conducted by the Squamish Environmental Review Committee (SERC - see section 4.1) and may be subject to existing regulatory provisions, including environmental impact mitigation measures, based on the expected effects of the project. Habitat compensation, if deemed to be an acceptable option, may also be required.

3.3 Access

Pedestrian access to the Conservation area from the residential area near Vancouver Street will be maintained. Care will be taken to ensure public safety in the Industrial/Commercial portion of this access route. Additional public access will be allowed in the future, subject to safety and environmental issues.

Vehicular access to the training dyke will also be maintained.

Industrial access to the west side of the Squamish River for forest extraction using current infrastructure is not precluded by the plan but care must be taken to conserve and protect the environmental values of the conservation area. Further approval from the District of Squamish will be required to ensure coordinated and appropriate trucking routes.

3.4 Development Activities and Fish Habitat Protection Measures

In order to determine the potential impacts of a proposed project on fish habitat, the project's design details, construction methodology, location, scheduling and operation must be reviewed and the direct and indirect impacts identified and analyzed. In addition, bio-physical information will also be required to characterize the habitat, to determine the fish species using the habitat and the project site or the area impacted by the project, so as to assess the suitability of the habitat to provide the life requisites for fish and to assess whether the project is likely to cause a "Harmful alteration, disruption or destruction" (HADD) to fish habitat. It is the responsibility of the proponent to supply the information needed to make this determination.

In conducting its review of the project, DFO will apply its "Policy for the Management of Fish Habitat", which describes a "hierarchy of preferences" to be followed. This includes:

- Avoidance of Impacts - i.e. through alternate relocation or project redesign;
- Mitigation - for example, implementing sediment controls to protect fish habitat or using timing windows to minimize effects during periods of low fish presence.
- Compensation - if, and only if, after taking in account avoidance and mitigation measures, the project proposal is still likely to result in a HADD, habitat compensation, if deemed to be an acceptable option, may also be required. In these cases, an Authorization pursuant to Section 35(2) of the *Fisheries Act* will be required. Authorizations cannot be issued until adequate compensation measures have been specified which will result in achieving "No Net Loss" of productive capacity of fish habitat.

DFO's "Policy for the Management of Fish Habitat" and the "Conservation and Protection Guidelines" provide additional details on this hierarchy of preferences for achieving "No Net Loss" of productive capacity, including a preferred hierarchy for compensation options.

In addition, the issuance of a *Fisheries Act* Authorization is a trigger for DFO to conduct an assessment of environmental effects resulting from the project pursuant to the Canadian *Environmental Assessment Act* (CEAA). DFO intends to conduct its CEAA assessment responsibilities concurrent with the coordinated environmental review process under this Plan. As part of the CEAA review, DFO will need to determine if significant adverse environmental impacts, for example, a HADD to fish habitat, are justifiable under the circumstances.

These fish habitat protection measures will be thoroughly applied to all development activities throughout the Plan Area, including projects within the area designated as Industrial/Commercial. Unless already provided, a bio-inventory as above will be required prior to Authorization. However, it is intended that habitat losses, or HADDs, as a result of projects within and/or adjacent to the Industrial/Commercial area that impact habitat within this designation area will be pre-compensated through this Plan, by the protection of the conservation areas and the completion of the habitat improvement projects illustrated in [Figure 9](#). Therefore, no further compensation will be required for projects within the Industrial/Commercial Area including, for example, along the western edge of the Mamquam Channel in downtown Squamish.

The following compensation projects are designed to facilitate juvenile fish access to the central estuary, improve water circulation, eliminate industrial activities and generally improve ecological diversity and productivity in the Conservation area. They will be formally documented in a Habitat Compensation Agreement between DFO and BCR.

Funding for the maintenance of existing and planned culverts and debris structures will be provided by BC Rail in the amount of \$2500 per year for 20 years. DFO will manage the funds and maintain the works.

SITE 1: CONSTRUCTION OF TWO CULVERTS IN THE SQUAMISH RIVER TRAINING WALL

Previously, young salmon, trout, and char migrating downstream had to swim down the length of this dyke to its end near the deep water of Howe Sound and then back up to the rearing habitat in the upper part of the estuary's central basin. With the completion of these two culverts, salmon, trout, and char are now able to directly access the central basin, thereby increasing their chances of finding the best habitat in which to adjust to marine conditions and to avoid predators in order to better survive the ocean phase of their life cycle. The newly placed culverts are also increasing the flow of freshwater into the central basin, thereby improving the temperature and oxygen content of the water in its upper reaches. More freshwater flow means more mixing of river water with salt water moving in from the sea, which means that a greater variety of plants and animals can flourish. The flood protection function of the dyke will not be compromised by the construction of these culverts. *Status: Completed by DFO in September 1995*

In addition, BC Rail is still committed to installing an additional pair of culverts, at an alternative site on the training wall as directed by DFO. *Status: Pending implementation of SEMP*

SITE 2: REMEDIAL WORK ON TWO EXISTING CULVERTS IN THE TRAINING WALL

This work is also designed to improve fish access to and freshwater circulation in the central basin without compromising the flood protection function of the training wall. Currently, migrating fish are unlikely to find the culverts due to the large accumulation of debris at their river entrances. A debris control device will be constructed to prevent blockage of culverts. *Status: Pending implementation of SEMP*

SITE 3: CONSTRUCTION OF A NEW HABITAT OR REWATERING CHANNEL WITHIN THE ESTUARY

This site is on the boundary between the Conservation and the Transportation Corridor areas. Road or rail expansion on the Industrial/Commercial side may encroach slightly on the Conservation area and require filling of some the existing channel area in the central basin. The developer will pay for a complete inventory of any habitat lost due to encroachment if it occurs and compensate for that loss with the construction of a new channel in the Conservation area. Design of the new channel will take into account the habitat lost at the site of its construction. The new channel will not only provide habitat, but will also help to further improve the circulation of fresh water in the central basin. More importantly, it will result in more frequent flows into and out of the vegetated portions of the basin. This will provide additional preferred habitat area and will flush detritus, matter into the estuary. Construction of the channel is to be completed prior to any fill being placed. *Status: Pending implementation of SEMP and design of road and rail facilities.*

SITE 4: REMOVAL OF DREDGED SAND ALONG THE SQUAMISH RIVER TRAINING WALL

Removal of this sand will allow habitat which has been buried since the early 1970s to recover. The area will be graded to appropriate elevations to maximize marsh vegetation growth and be prepared for revegetation and is expected to develop into healthy estuarine habitat. Removal of the sand commenced in the early-mid 1990s in response to demand for fill material and revegetation and recovery is well underway in the areas where the sand has been removed. Use of removed sand in Squamish is subject to municipal regulations. *Status: Underway and approximately 50% complete. All sand to be removed by Sept. 30, 2005.*

SITE 5: DECOMMISSIONING OF THE WEST BARR LOG SORT OPERATION

The removal of this dry land log sorting and dumping operation will eliminate industrial activity from the Conservation area. West Barr will be required to remove debris and clean the site by the cleanup bond attached to its land tenure. *Status: To be completed 15 years following implementation of SEMP - no later than October 13th, 2014.*

The Project Review Process

4.1 Organizational Structure

Squamish Estuary Management Committee

Administration of the Plan will be the responsibility of the Squamish Estuary Management Committee (SEMC), which will replace the SECC. The SEMC will be appointed at the discretion of the governments upon adoption of the Plan. The SEMC is expected to consist of current SECC member agencies plus representatives from the Squamish Nation, and the Ministry of Forests as well as local conservation and commercial interests.

The function of the SEMC will be to coordinate planning and management of environmental and developmental activities in the Plan area. The SEMC will strive to achieve consensus on the use of land and water resources in the Plan area and will be responsible for:

- integrating the interests of all stakeholders; refining and administering the estuary management plan;
- overseeing the Squamish Estuary Project Review Process (currently undertaken by SEECAC);
- producing an annual report on Squamish estuary management;
- and establishing its own decisionmaking process

- minimizing impacts to the natural function of the estuary.

Squamish Environmental Review Committee & Plan Coordinator

The SEMC is assisted in its activities by the Plan Coordinator and the Squamish Environmental Review Committee (SERC).

The Plan Coordinator, presumed to be a representative of the District of Squamish. In the event Squamish declines, one of the other SEMC members will be responsible for:

- guiding prospective proposals through the project review process;
- advising SEMC when project proposals are submitted to SERC;
- carrying out administrative tasks associated with the Plan;
- liaising with government, industry and the public; and
- maintaining the Information Bank

To aid in streamlining the operation of SEMC, the SERC, consisting of representatives of BC Environment, Lands and Parks, Department of Fisheries and Oceans, District of Squamish and Environment Canada, will be formed. Working under the terms of reference provided by the SEMC, the SERC screens project proposals, directs them to the appropriate review process, and monitors their progress through that process. In addition, SERC will undertake technical environmental reviews of proposed projects not subject to other environmental review processes. The SERC Chair will provide status reports on projects under review to the Plan Coordinator for presentation to SEMC.

4.2 Project Review Process

Development within the estuary is subject to all normal municipal review processes and procedures. In addition, it is also subject to environmental assessment by a variety of environmental agencies. In order to facilitate the assessment, a coordinated review process has been established for all development proposals within the estuary area.

The Squamish Estuary Project Review Process provides a path through the various jurisdictional authorities and review procedures facing any development in the Plan area. It is designed to protect and enhance the environmental and social integrity of the Plan area by encouraging sustainable development that conforms to the intent of the Plan.

The process, which is illustrated in [Figure 10](#), begins with the submission of the proposal to the Plan Coordinator who determines which review path should be followed. Three paths are proposed:

- Path 1 is for projects with low environmental impact and will be reviewed solely by the Plan Coordinator.
- Path 2 is for projects with moderate environmental impact and will be reviewed by the SERC.

- Path 3 is for projects with high environmental impact and will be referred by the SERC to the appropriate environmental agencies for more intensive review and evaluation.

In most cases, the process concludes with the SERC forwarding its recommendations, in writing, to the appropriate regulatory agencies with a copy to the proponent. These recommendations outline any conditions of approval, additional information requirements, or the rationale for rejection. The terms and conditions of approval are to be incorporated into the permits or approvals granted by the regulatory agencies.

This process is subject to ongoing review and refinement by the SEMC members.

Time Frame

The proponent will receive a response within 30 days of submitting the proposal to the Plan Coordinator. This response will indicate which path has been chosen for the project or request more information. Throughout the process, the Plan Coordinator will keep the proponent apprised of progress and the time each step is expected to take.

Information Bank

The Plan Coordinator will ensure that the prospectus and project-related information is filed in the Information Bank at the Squamish Public Library. This material is available for public view at any time during regular library hours. Individuals wishing more detailed information on the review process are encouraged to contact the Plan Coordinator.

Conflict Resolution

It is expected that any conflicts will be resolved during the review process. Where they persist, the SEMC will determine the appropriate course of action, which may include public meetings or mediation.

4.3 Ongoing SEMP Review Initiatives

The SEMC will review the Squamish Estuary Management Plan every 5 years. Substantial amendments, such as significant area designation changes, must undergo public review. The SEMC will determine the extent to which proposed amendments are reviewed and will take responsibility for decisions about minor amendments. If necessary, working groups may be formed by the SEMC to analyze specific concerns related to the estuary.

The process for substantial amendments is outlined below.

- a) develop amendment

- b) present it to the public
- c) receive public comment
- d) review public comment
- e) incorporate public suggestions as appropriate
- f) report back to the public explaining how and why suggestions were or were not used
- g) receive public comment
- h) complete the Plan
- i) submit the Plan for member organization endorsement
- j) approve and implement the Plan

Implementation

5.1 Agency Approval

Prior to proceeding with implementation, the agencies represented on the current SECC need to present the 1999 Plan to their respective executive and political levels to confirm support. In addition, the Department of Fisheries and Oceans must complete the Habitat Compensation Agreement.

5.2 Land Exchange

To facilitate the creation of the Wildlife Management Area, a land exchange between the Province and the BCR needs to be completed. A map of the exchange lands is attached as [Figure 11](#).

5.3 SEMC Formation and Work Program

Membership on the SEMC must be identified and the Committee established. The SEMC may wish to begin its work by:


- establishing operating procedures and terms of reference;
- arranging funding for implementation of the plan;
- considering whether membership of the Squamish Environmental Review Committee should be restructured;
- considering the establishment of local advisory groups to enable full appreciation of local knowledge and concerns;
- making review of the Planning Assessment area a priority, and
- carrying out the work program outlined in Appendix II

SIGNATURE PAGE

1999 Squamish Estuary Management Plan



A.M. Martell
Regional Director General
Environment Canada



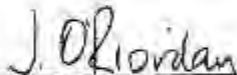
Donna Petrachenko
Director General, Pacific Region
Department of Fisheries & Oceans



Jim Cox
President and Chief Operating Officer
BCR Properties Ltd.



Corinne Lonsdale
Mayor
District of Squamish



J. O'Riordan
Assistant Deputy Minister
Environment & Lands, Regions Division
Ministry of Environment, Lands & Parks

Squamish Location

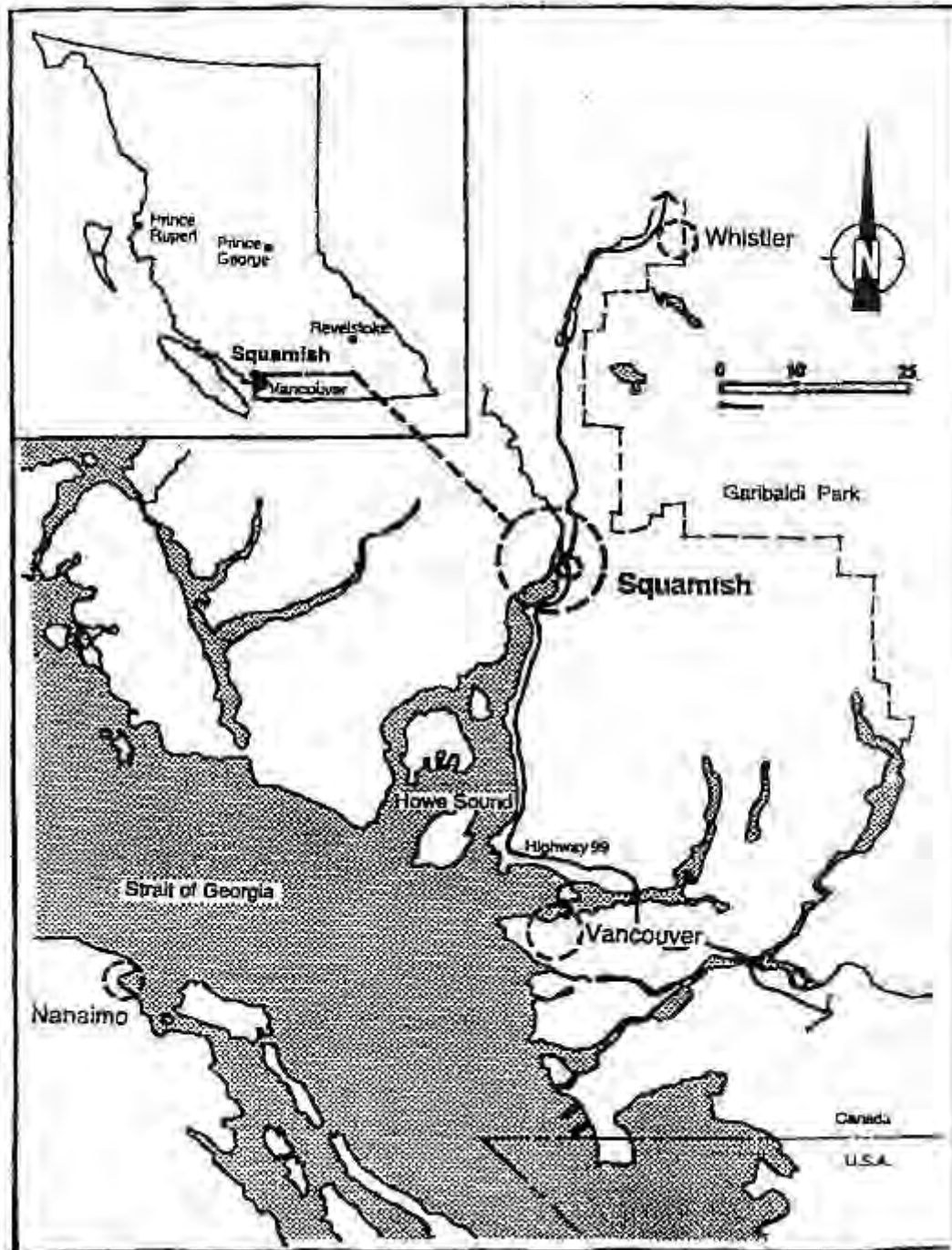


Figure 2 - 1982 Plan

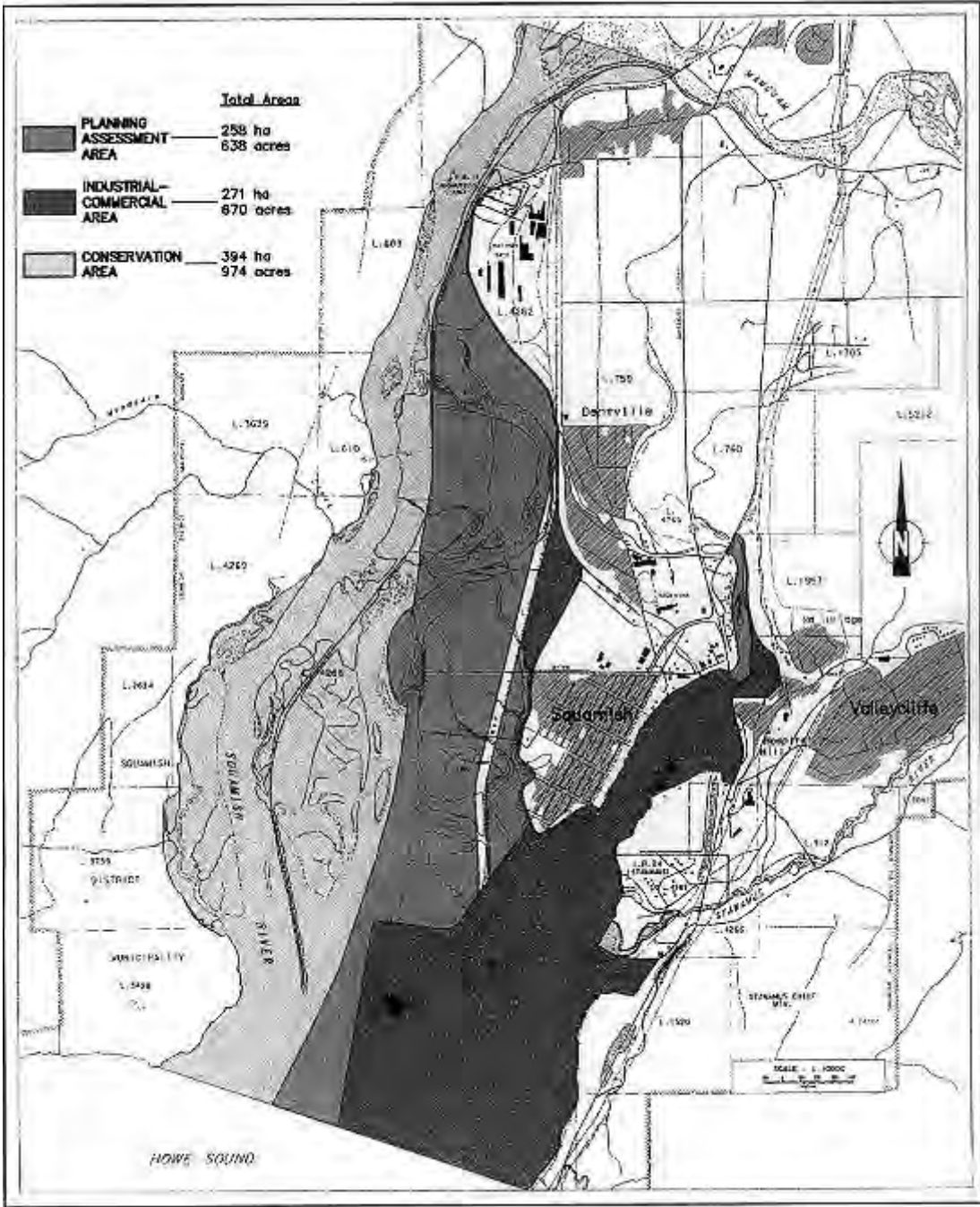


Figure 3 - 1992 Plan

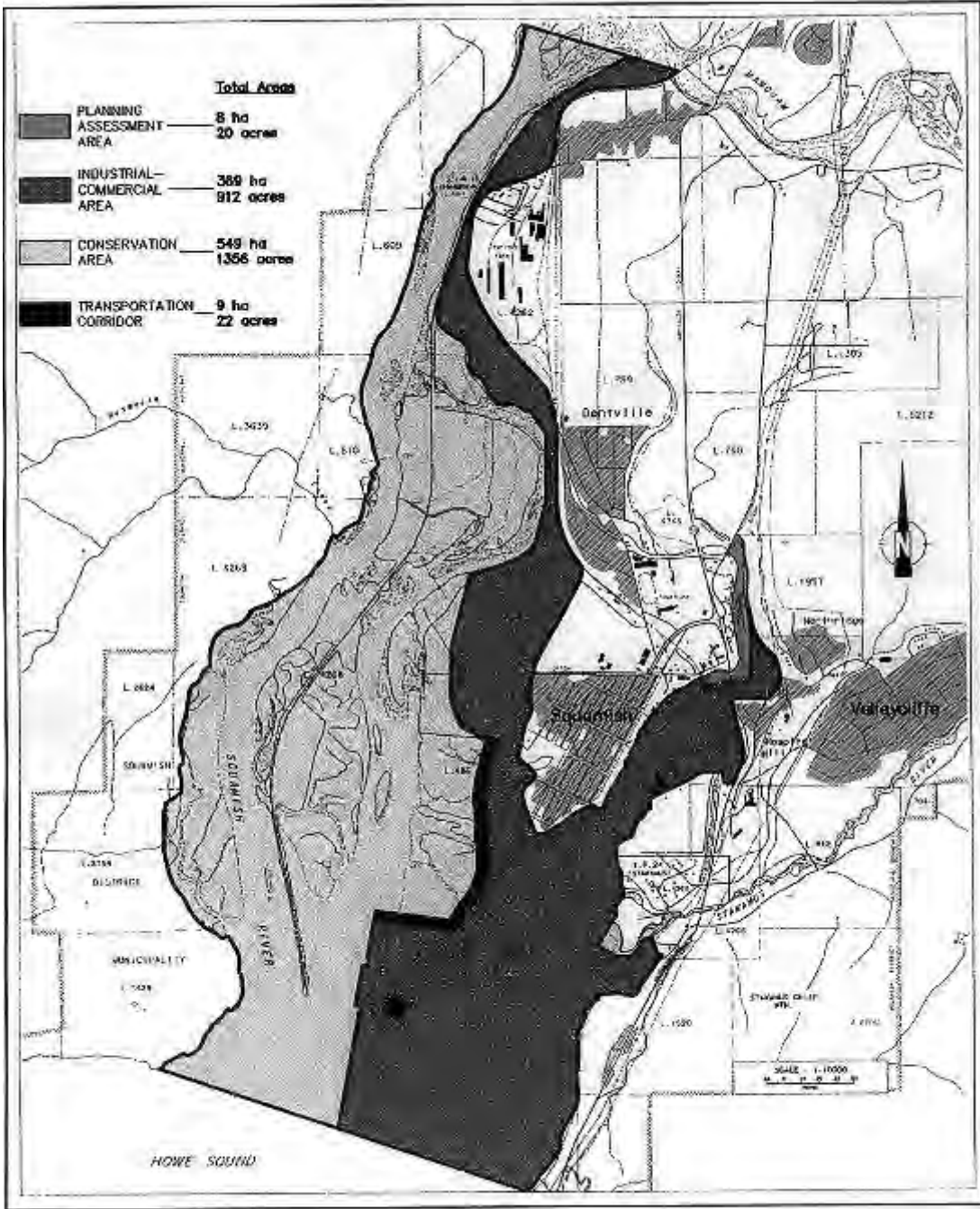


Figure 4 - 1999 Plan

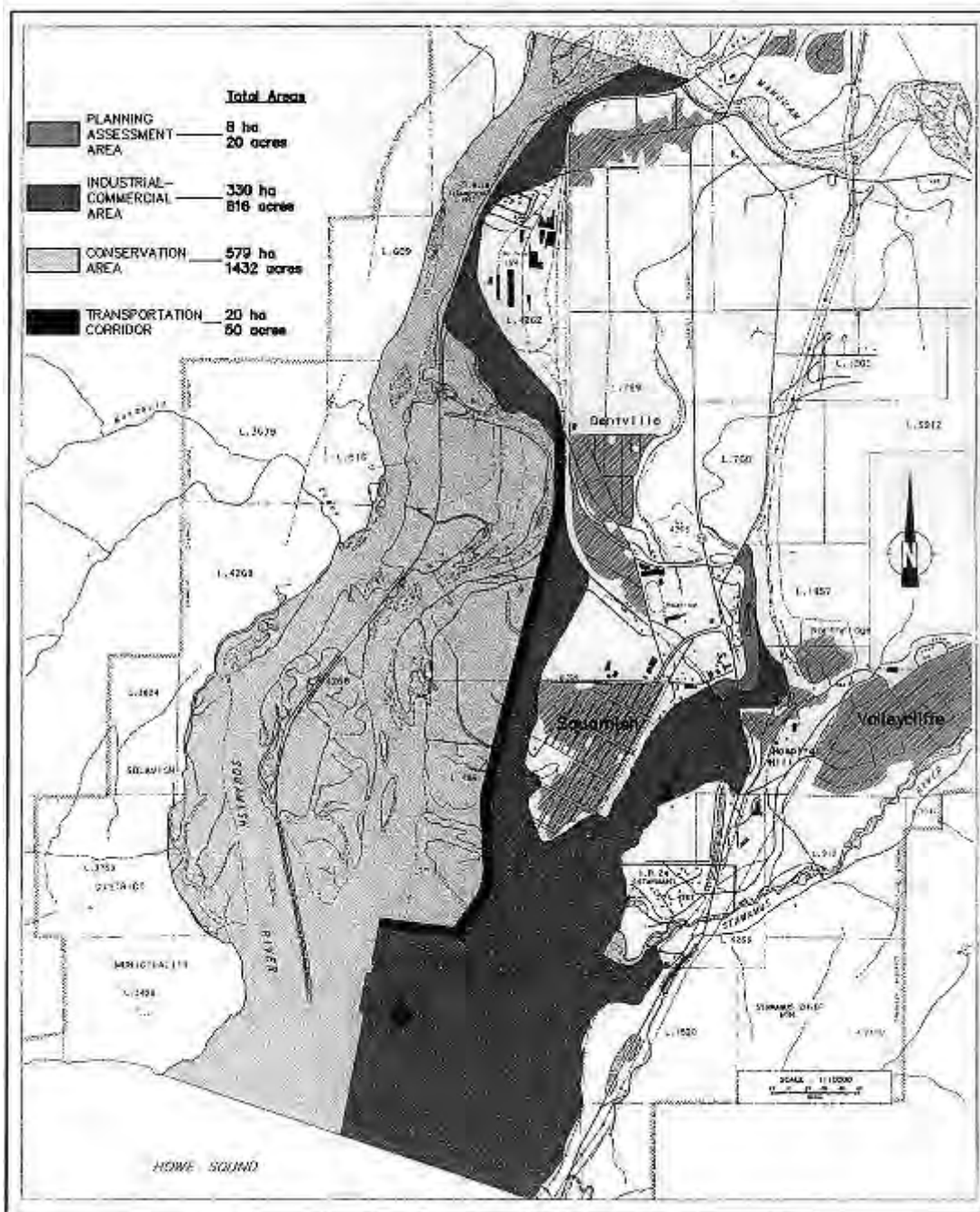


Figure 5 - Conservation and Development Areas

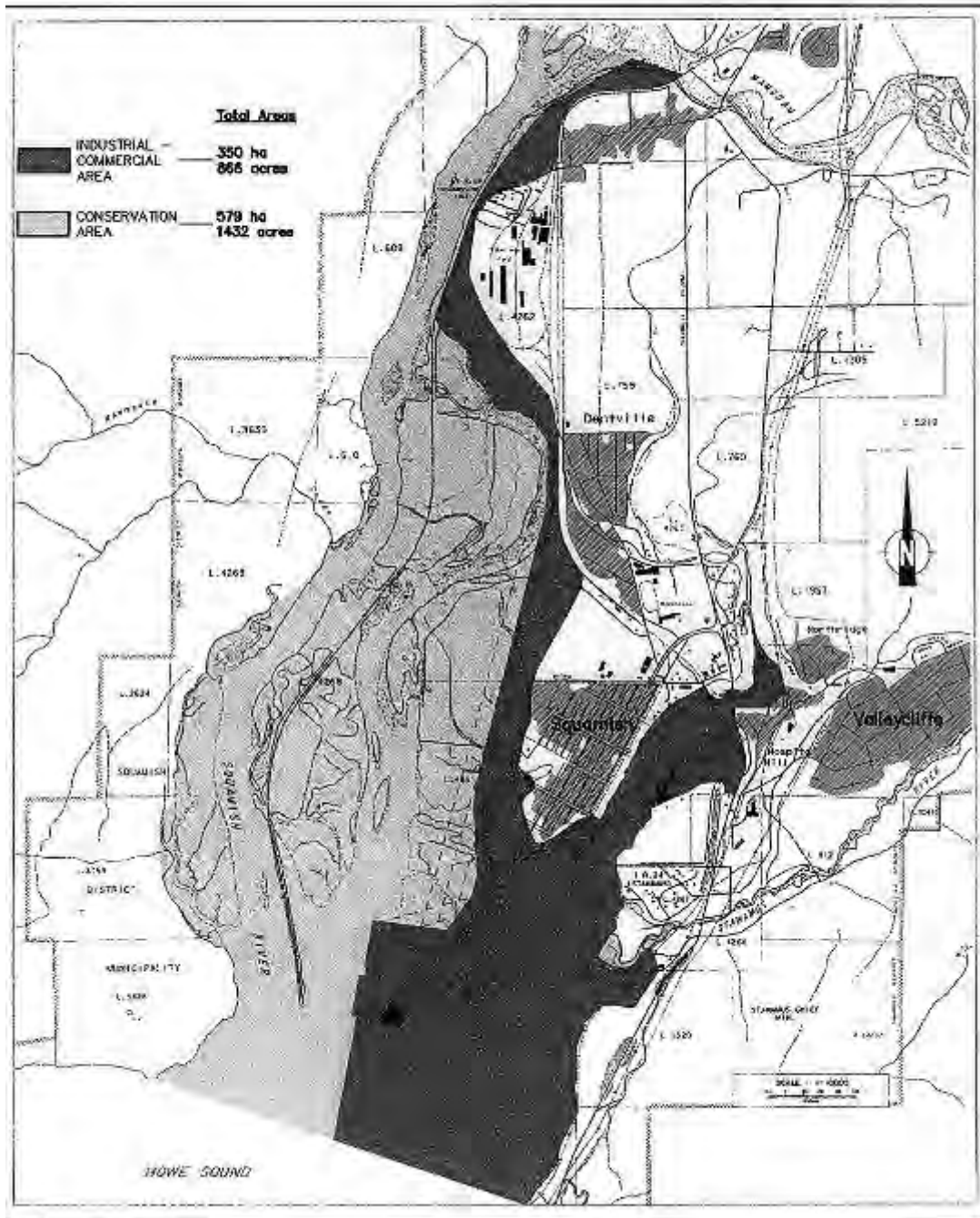


Figure 7 - Development

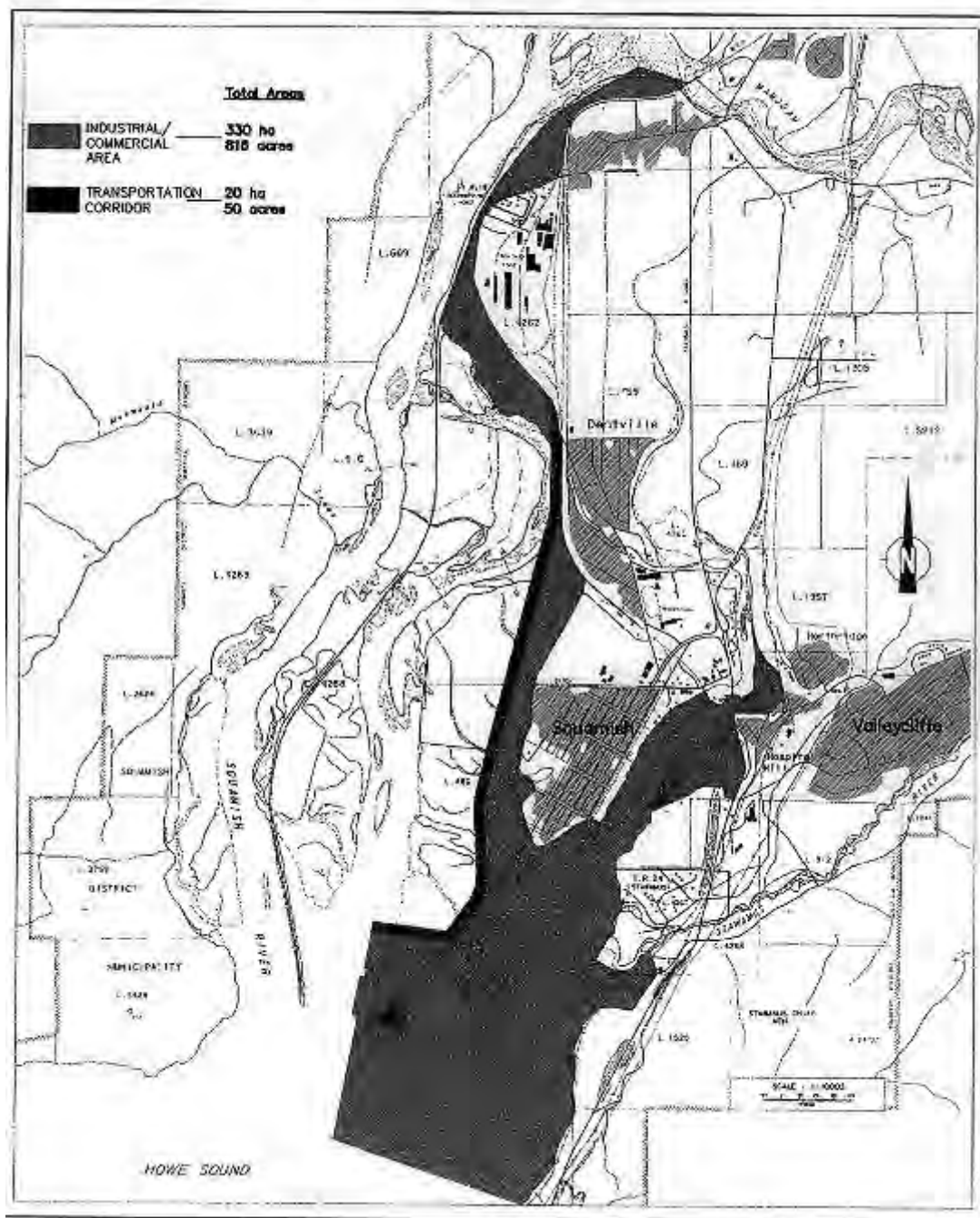


Figure 8 - Planning Assessment Area

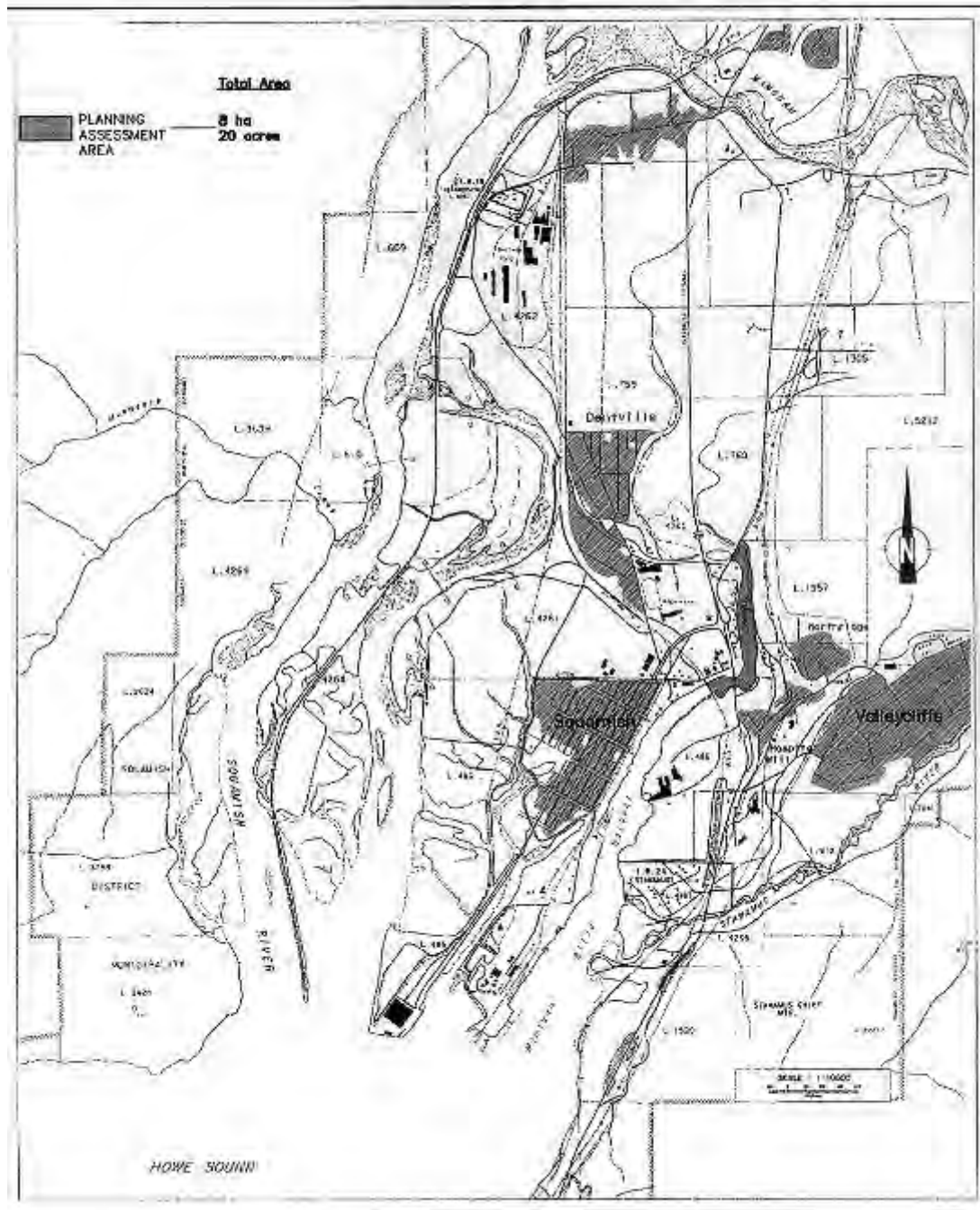


Figure 9 - Habitat Compensation Works

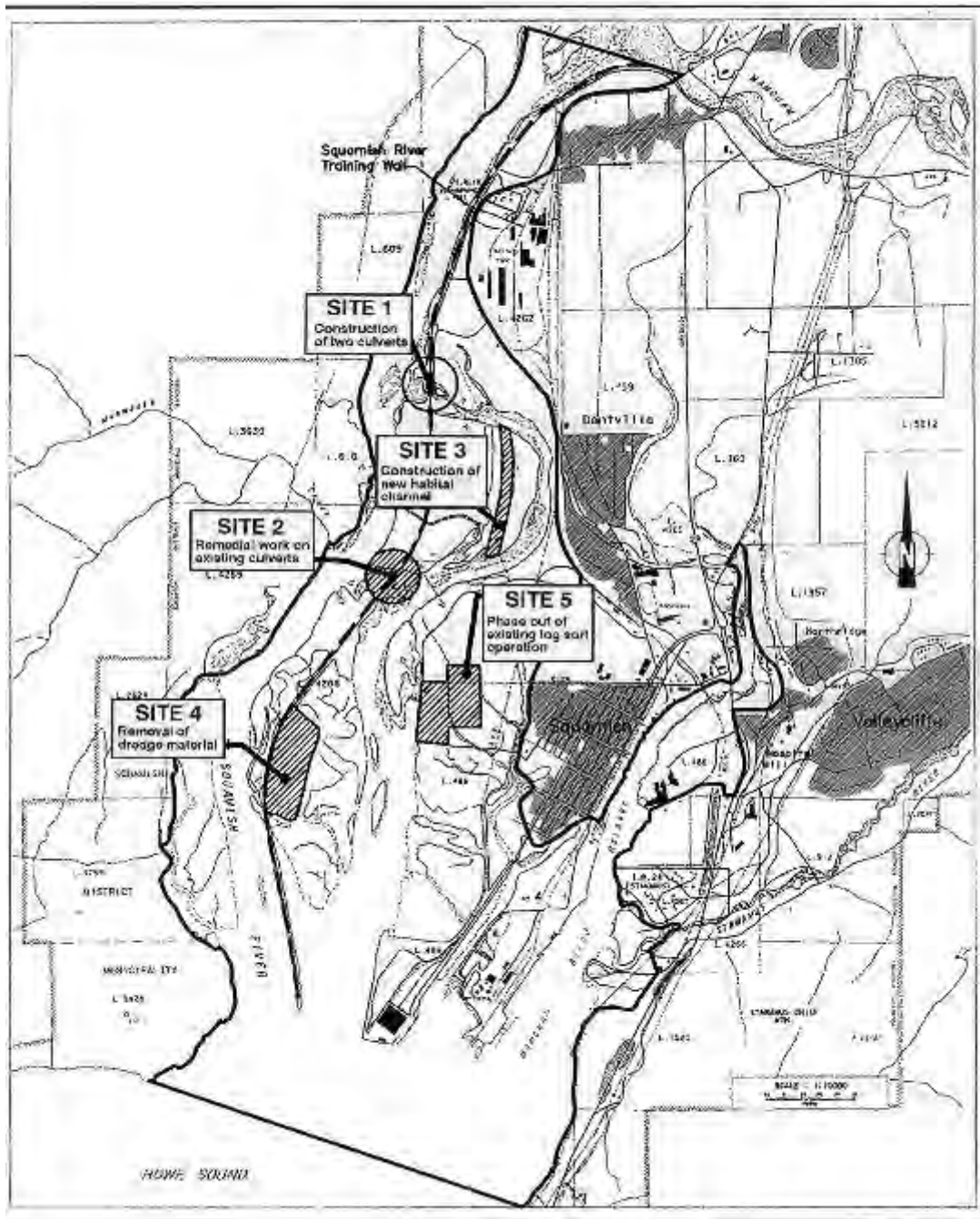


Figure 10 - Environmental Review Process

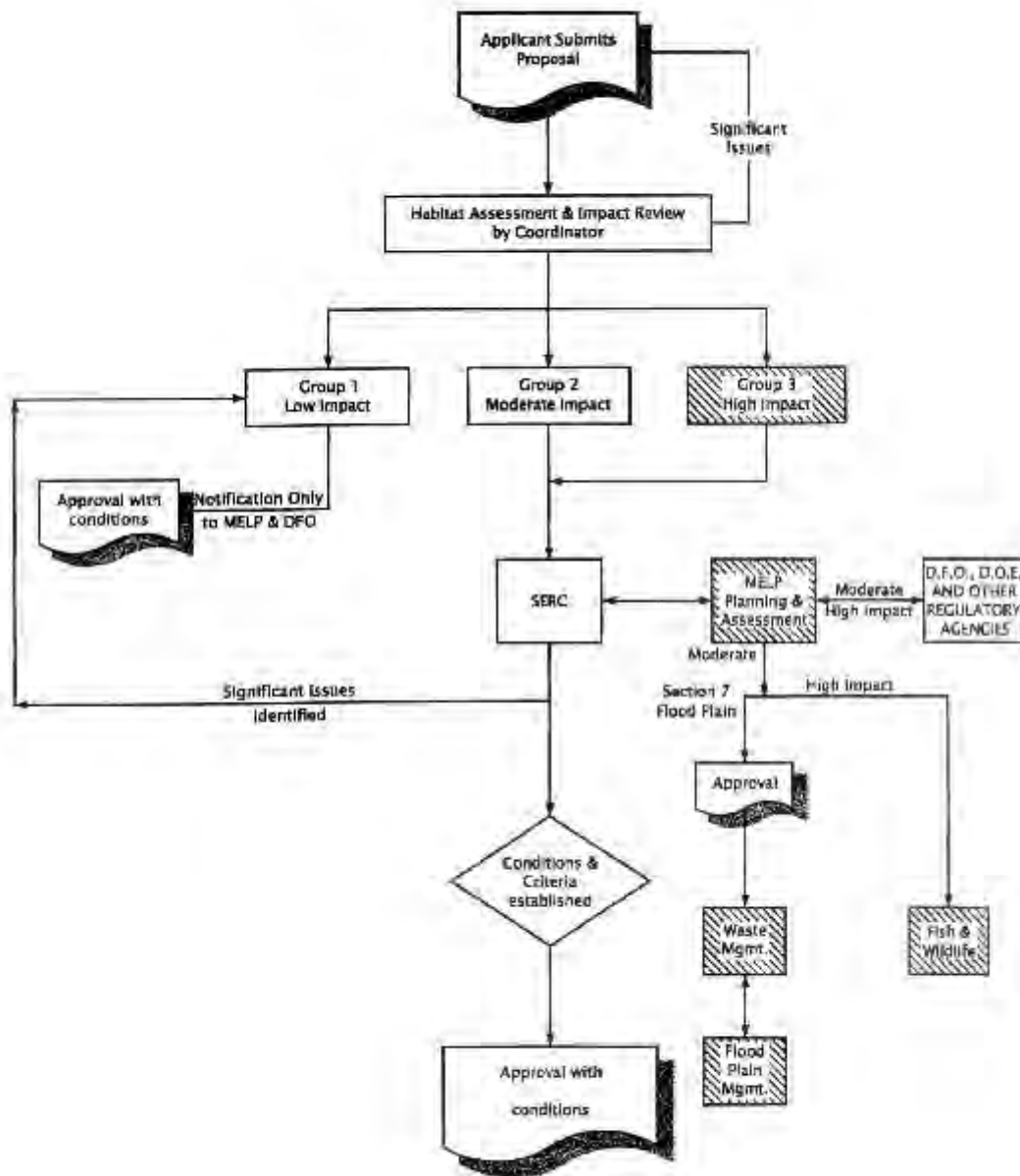
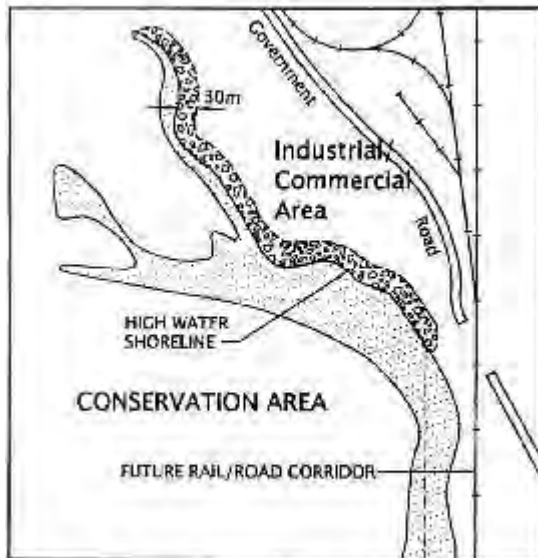
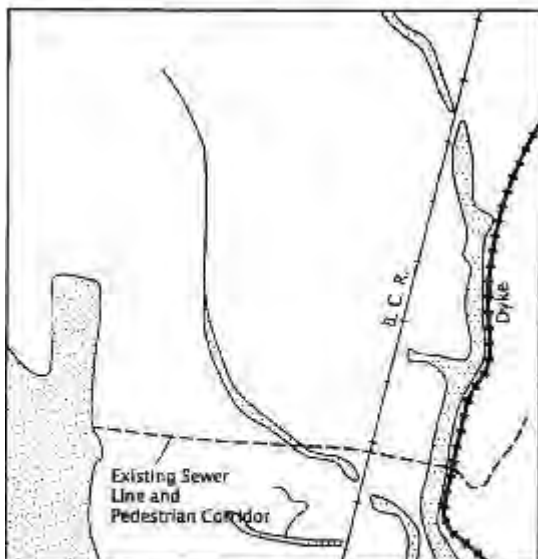


Figure 12 - Buffers and Pedestrian Access



Buffer: Central Basin Slough



Pedestrian Access Corridors



Buffer: Cattermole Basin Slough

All areas are approximate and subject to a detailed survey.

METRES 0 100 500

APPENDIX I

PROPOSED SEMC MEMBERSHIP

Object: to provide a balanced approach to managing the SEMP, membership should have balance between government and non-government members and between economic and environmental issues,

BC Assets and Land Corporation

BC Environment

BC Ministry of Forests

BC Rail Ltd.

Environment Canada

Fisheries and Oceans, Canada

Representative, Local Commercial Interests

Representative, Local Conservation Interests

BC Ministry of Small Business, Tourism and Culture

District of Squamish

Squamish First Nation

An independent Registered Professional Biologist

Representative, Log Handling Working Group

Representative, Local Recreational Interests

Representative, Academic Community

****The SEMP does not provide for funding for any members.**

APPENDIX II

SEMC WORK PROGRAM

The following outlines some of the issues that the SEMC may wish to include in its work program:

- 1 ask the Squamish Environmental Review Committee, in conjunction with the District of Squamish and other government agencies, to investigate the feasibility of rewatering the upper Mamquam Blind Channel
- 2 ensure that, if the basin management process is developed by other interests, the SEMC initiatives are incorporated
- 3 form and work with a local advisory committee on the management plan for the Wildlife Management Area Plan
- 4 work with the advisory committee to implement the Wildlife Management Area Plan
- 5 develop a newsletter and enhance the public information exchange process
- 6 ask the Ministry of Environment, Lands and Parks to report on the sanitary sewage outfall
- 7 request a review by BC Environment of the options for reducing the aggradation of the Squamish River
- 8 ask the District of Squamish to review the official Community Plan Transportation Network
- 9 initiate review of Planning Assessment Area in upper Mamquam Blind Channel
- 10 ensure that the habitat compensation works are undertaken in accordance with Habitat Compensation Agreement developed under this plan
- 11 ensure that the habitat compensation works are monitored for their effectiveness, as outlined in the Habitat Compensation Agreement
- 12 ensure that the West Barr Site is cleared of debris once the West Barr operation closes
- 13 have the Plan Coordinator develop, in consultation with the SERC, criteria which outlines the types of projects that don't require a formal review
- 14 have the SERC prepare guidelines for each level of the project review process

APPENDIX III

GLOSSARY

Aggradation The increase in the level of a riverbed as a result of sediment deposited by the river

Alluvial Of or relating to material left by water flowing over land; for example, alluvial deposits are those materials, such as silt and sand, dropped by a river as it flows toward the ocean.

Area Designation The assignment of particular use(s) to a specified location.

BCR BCR Properties and BC Rail.

Brackish Somewhat salty; for example, fresh water mixed with salt water becomes brackish.

Buffer A strip of land which is left in a natural state.

CEAA Canadian Environmental Assessment Act.

Culvert A small tunnel constructed to carry water under a railway, embankment or road.

Conservation The act of protecting from loss, waste, injury or decay.

DOE Department of Environment (also known as Environment Canada).

DFO Fisheries and Oceans Canada (formerly Department of Fisheries and Oceans).

Delta A fan-shaped and nearly flat plain made from alluvial deposits between the branches of a river at its mouth.

Dendritic Channels A name for the smaller river channels that branch off the main river and spread over the delta.

Dredging The process of removing materials such as silt or gravel from the bottom of a water body using various methods, such as scooping or suction.

Ecosystem The interaction of a community of interdependent organisms with its environment.

Effluent Outflow, usually of waste water, from a pipe into a stream or river.

Estuary The mouth or lower part of a river where the river's freshwater current meets and mixes with the ocean's saltwater tide.

Fill Material, such as sand, gravel or earth, placed to change a slope or depression to a raised or level surface.

Fluvial Of or relating to a river.

Foreshore Part of the shore between the high water mark and the low water mark.

HADD Harmful alternative, disruption or destruction (see section 3.2.4).

Habitat The environment in which an animal or plant lives.

Habitat Channel A waterway which is newly created or modified to provide habitat.

Habitat Compensation Agreement The agreement between the Fisheries and Oceans Canada and BCR which outlines how BCR will compensate for expected fish habitat loss as a result of industrial and commercial development.

Hectare A metric unit of measurement; equivalent to about 2.47 acres.

Implementation Coordinator Replaced by the Plan Coordinator.

Information Bank A collection of project information and correspondence related to the Squamish Estuary Management Plan available to the public at the Squamish Public Library.

Intertidal Zone Of or relating to the marine or estuarine foreshore,

Lead Agency The government body primarily responsible for completion of an activity such as the implementation of a management plan.

Metre A metric unit of measurement; equivalent to about 39 inches.

Mitigation Action taken to avoid or reduce adverse impacts.

Plan Coordinator Representative from the District of Squamish who assists the Squamish Estuary Management Committee with administrative tasks, and who is also a member of the Squamish Environmental Review Committee.

Referral System Process by which a government agency passes a proposal on to other agencies (usually government) for review.

Rewatering Adding water to an area previously partially or completely drained.

Riparian Pertaining to or situated on the bank of a water body.

River Mouth Where the river meets the ocean.

SECC Squamish Estuary Coordinating Committee (see Section 1.2; with implementation of SEMP, SECC will be replaced by the SEMC).

SEMC Squamish Estuary Management Committee (see Section 4.1).

SEMP Squamish Estuary Management Plan.

SERC Squamish Estuary Review Committee (see Section 4.1).

Sub-tidal A region located below the low water mark in a tidal area.

Tenure The holding of an office or land for a specified period of time.

WMA Wildlife Management Area (designated under the BC Wildlife Act) under the provincial Wildlife Act, the primary purpose is bio-diversity, It

does not necessarily exclude any other activities, i.e., rights of ways, but such activities require Regional Wildlife Manager, MELP, approval.

Appendix II
West-Barr Contracting Ltd. Clean-Up Schedule

COPY

**PROCEDURE FOR THE
CLEAN UP OF SITE "A"**

SQUAMISH, BC

December 23, 2003

The following is a detailed procedure for the cleanup of West-Barr's
Site A log sort in the Squamish River Estuary.



WEST-BARR CONTRACTING LTD.

Box 335, Squamish, B.C. V0N 3G0

Phone : 604-892-9390

Fax : 604-892-9852

Email: westbarr@telus.net

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af

PURPOSE

The purpose of this Procedure is to describe in some detail the clean-up measures that will be taken by West-Barr Contracting Ltd. upon vacating Site A (in accordance with their lease with the Province – No. 237333). The land will be left in a safe, clean and sanitary condition; consistent with a well-maintained industrial site, as it was on the date West-Barr Contracting Ltd. commenced operations (January 01, 1988). The site will revert to a river estuary reserve. Therefore at completion of this work, the land portion of the site will be able to be restored to a wildlife habitat and the adjacent waterways to productive fish habitat.

SCOPE OF WORK

This cleanup has 6 phases:

- 1 Remove all buildings, equipment, machinery, parts, storage containers and any foundations they sit on.
- 2 Take all reasonable steps necessary to remove all loose debris, including hog material, logs, log ends, bark, wood chunks and large rocks from both the surface area and perimeter of the site.
- 3 Remove all dolphins and pilings, dump skids, boom boats, winches, air lines, fuel hoses, boom logs, chains and all other loose gear from the log boom pocket area (except the log cribbing on the west side).
- 4 Grade the site to ensure good continuous drainage to prevent the pooling of water.
- 5 Breach the berm (located at the north end of the boom pocket), in two places in order to restore two-way tidal flow in this area.
- 6 Donate \$5,000.00 in cash or in kind toward revegetating the site and promoting riparian growth.

DETAILED DESCRIPTION OF WORK

- 1** West-Barr Contracting Ltd. will remove all buildings, equipment, machinery, parts, storage containers, and any foundations they sit on including, but not limited to, the following:



I - YELLOW "LINK-BELT" GRAPPLE LOADER



II - TRAILER RELOAD "A" FRAME

The trailer reloading frame will be dismantled and removed (including foundations)



III - RAILWAY CAR BULKHEADS

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IV - REMNANTS OF DONKEY SKIDDER



V - LOGGING TRUCK AXLE



VI - 12" GALVANIZED PIPE



VII - ANCHOR BASES



VIII - PILE DRIVING PIPE, I BEAMS AND LOG DERRIS

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IX - 1 BEAMS AND 48" GALVANIZED PIPE



X - OLD BUOY



XI - OLD ROOM BOAT/TUG



XII - 48" GALVANIZED PIPE ALONG ROAD



XIII - OLD CRANE BOOM PARTS AND DEBRIS



XIV - LOG DECK UNLOADING SKIDS (x2)



XV - LOADERS (x2)



XVI - CABLE DISPENSER



XVII - EQUIPMENT STORAGE SHED AND CREW HUT



XVIII - DIESEL TANK AND CONTAINMENT BERM
Should any hydrocarbon-contaminated soil exist, it will be removed to an approved site.



XIX - LOG BUNDLER/BOOM SKIDS (x2)



XX - CABLE, CHAINS, TOOLS & MISC. PARTS

6/11

at



XXI - MISCELLANEOUS PARTS and EQUIPMENT

2 West-Barr Contracting Ltd. will take all reasonable steps to to remove all debris, hog material, logs, log ends, bark, wood chunks and large rocks from both the surface area and perimeter of the site, including but not limited to the following:



XXII - ALL MERCHANTABLE AND SCRAP LOGS



LOGS DONATED FOR JUVENILE SALMON
ENHANCEMENT PROJECT



PILE OF LARGE BLAST ROCKS

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XXIII - LOG SORT WASTE PILE (500M³ - 2,000M³)



XXIV -
ALL BACK
STOP LOGS



XXV - ALL
LOG CUT
ENDS
AND BUTTS



XXVII - ALL WOOD AND BARK DEBRIS UNDER
AND AROUND LOG PILES



XXVI - ALL PERIMETER LOGS AND DEBRIS

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[Handwritten signature]

- 3 West-Barr Contracting Ltd. will remove all dolphins and pilings, dump skids, boom boats, winches, air lines, fuel hoses, boom logs, chains and all other loose gear from the log boom pocket area (except the cribbing on the west side), including but not limited to the following:



XXVIII - DOLPHINS, PILINGS, BOOM BOAT, BOOM LOGS and WINCH RAFTS



XXIX - FUEL AND AIR COMPRESSOR LINES
Care will be taken to ensure there are no contaminate spills



XXX - CRIBBING ON WEST SIDE OF BOOM POCKET LEFT AS IS



- 4 West-Barr Contracting Ltd. will grade the site to ensure good continuous drainage to prevent the pooling of water and maximize the opportunity for new plant life to grow.



XXXI - SWALES FOR DRAINAGE
The ground on the site percolates well but the site will be graded to permit additional drainage.

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ad

5

West-Barr Contracting Ltd. will tidy the area around and on the berm, which skirts the north side of the log boom pocket. The berm will be breached in two places to restore two-way tidal flow in the Blind Channel. The breaching of the berm will only be done during specified dredging windows (September 15 to October 31, or January 01 to February 28). The Squamish office of Fisheries and Oceans Canada will be notified 48 hours prior to commencement of work. The work will include but is not limited to:



XXXII - LOGS AND DEBRIS WILL BE REMOVED



XXXIII - METAL CRIBBING WILL BE REMOVED



XXXIV - ONE OF THE CHANNELS TO BE RECONNECTED WITH THE BOOM POCKET



XXXV - PROPOSED LOCATIONS OF BREACHES IN THE BERM
(Following consultation with others)



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pk

- 6 West-Barr Contracting Ltd. will donate \$5,000.00 in cash or in kind toward revegetating the site and promoting riparian growth. We will provide any reasonable assistance toward achieving this end.



XXXVI - REVEGETATION OF NATURAL FLORA



XXXVII - WEST-BARR, SITE 'A'
A HAPPY SITE FOR ALL TIME

CONCLUSION

The West-Barr Contracting Ltd. Site A log sort is an active working site. Material is brought in and shipped out on an ongoing basis. Included in this process is the removal of debris and waste. Therefore, some specifics of the Procedure will change as product and equipment comes and goes from the site. The essence, spirit and commitment to the Procedure will remain in place. West-Barr Contracting Ltd. will act in good faith to ensure that the Procedure remains consistent with the intent and spirit of the terms of termination. All clean up work will be completed within 180 days of the expiration of the Term or October 13, 2014, (whichever comes first). West-Barr, their employees and owners are sensitive to the care that is required relative to the location of this site, and are vigilant in maintaining a continuous sense of order and tidiness as part of their work mandate. They also understand the requirements of leaving the site in a manner whereby it can quickly return to a native-like state that functions with the surrounding estuary as a productive fish and wildlife habitat.



Appendix III
Guidelines for Maintenance of Lower Squamish River Training Dykes -
June 2005 revised March 2006
- DRAFT -

The District of Squamish (District), the Squamish Estuary Management Committee (SEMC), and the Ministry of Environment (MoE) have a mutual interest in the effective management and maintenance of the Lower Squamish River Flood and Training Dykes (Dyke or Dykes). The District, SEMC and MoE agree that:

The areas of interest are the Dykes between the Mamquam River BC Rail bridge and the end of the Dyke near the wind sports facilities and as shown on the attached map;

The District currently owns the road surface on top of the Dyke and in the near future will own the entire Dyke from toe to toe;

The District is responsible for the management and maintenance of the Dykes;

SEMC is responsible for coordination, input and discussion between various community interests on issues within the estuary, including the Dykes and adjacent areas;

MoE is responsible for management and protection of natural values in the WMA; and

The District, SEMC, and MoE are committed to managing the Dykes to provide necessary flood protection and access in a manner that is compatible with, and in support of, the sensitive environmental values in the adjacent Wildlife Management Area.

Therefore, it is agreed that in the management of the Dykes the following guidelines will be followed by the District and supported by SEMC and MoE:

- The District will conduct emergency repairs and maintenance of the Dykes as necessary.
- The District agrees no further soils need to be added to the slopes of the Dykes for improvement of mowing conditions. The District may add smaller amounts of soils to portions of the flood Dykes to repair the mowing surfaces.
- Any soils used for the above repairs will have a known history and source, will have been confirmed by the District's Environmental Coordinator to be free of contaminants, including invasive plants.
- The District will mow the flood Dyke up to two times per year as far down the slope of the Dyke as the mower will reach. In consultation with the District's Environmental Coordinator the District will schedule mowing to provide benefits to bird species and other wildlife.
- The District will mow the majority of the training Dyke once per year one mower width down from the top of the Dyke's horizontal surface. There will generally be no mowing of the training Dyke south of, or downriver of, the gate near the wind

sports area. This area will be left wild or occasionally mowed due to excess build up of vegetation.

- Generally no vegetation will be planted along the slopes of the Dykes and seeding will occur from the adjacent vegetation. If seeding is required, native species only will be planted. This will be determined by District staff in consultation with SEMC and MoE.
- The road surface on the top of the dyke will be, over time, managed to a width of about 2.5 vehicle widths with two small pullouts or parking areas located at the trailheads (*as identified in Figure 6*).
- The District and MoE will work together to close all vehicle access from the Dyke to the river. This is done to reduce fire hazards, to protect sensitive wildlife values, and to increase public safety. MoE is responsible for identifying areas to be closed and for conducting any public or stakeholder consultations around the closures. The District will then, as feasible, work to remove or close the access points off the Dykes.
- In order to facilitate the above, it is recommended that a gate be installed to limit access to the north end of the Dyke. Bicycling and hiking activities will be encouraged on this portion of the Dyke. Keys may be provided to fish guide outfitters. A second gate will be required at the alternate access. Consultation with Squamish Nation is required for the second gate.
- The District is responsible for managing the wind sports permit that will be managed in a manner consistent with WMA objectives. Parking for wind sports users is located on the east side of the Dyke between the spit and the wind sport gate in a parallel fashion.
- As necessary, the District, SEMC, or MoE may schedule a meeting or field tour to discuss Dyke maintenance or management.
- Generally the District, prior to undertaking any initiatives around Dyke maintenance or management not described within this agreement, will consult with SEMC and will consider the SEMC's input in the planning and implementation of the initiative.

SCHEDULE M
GREEN SHORES GUIDELINES



COASTAL DEVELOPMENT RATING SYSTEM

VERSION 1.0

**A PROJECT OF
THE STEWARDSHIP CENTRE
FOR BRITISH COLUMBIA**



COASTAL DEVELOPMENT RATING SYSTEM VERSION 1.0

ISSUED FOR OPERATIONAL USE

MARCH 2010

www.greenshores.ca

A PROJECT OF THE STEWARDSHIP CENTRE FOR BRITISH COLUMBIA

www.stewardshipcentre.bc.ca



GREEN SHORES PROJECT

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This operational version of the Coastal Development Rating System was prepared by the GREEN SHORES Technical Working Group. Previous drafts were reviewed by the GREEN SHORES Advisory Committee and a Peer Review Workgroup. In addition, a number of skilled professionals volunteered their time to participate in the pilot project assessments. The contributions by members of these groups (Appendix 1) to the development of the rating credits are gratefully acknowledged. Major funding for the development of the GREEN SHORES development rating system was provided by the Real Estate Foundation of British Columbia, the BC Hydro Bridge Coastal Restoration Program, the BC Ministry of Environment and Environment Canada.

The Coastal Development Rating System can be downloaded from the GREEN SHORES website (<http://www.greenshores.ca>). The rating system is envisioned as a living document with future versions incorporating the comments and experience of users.

None of the parties involved in the funding or creation of the Coastal Development Rating System make any warranty (express or implied) or assume any liability or responsibility to any third parties for the accuracy, completeness, or use of, or reliance on, any information contained in the Coastal Development Rating Credits, or for any injuries, losses or damages arising out of such use or reliance.



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THE GREEN SHORES PROJECT

The GREEN SHORES project provides resources and tools for coastal property, land-owners and managers to minimize the impacts of new developments and restore coastal ecosystem function of previously developed sites. GREEN SHORES promotes the incorporation of valued ecosystem services in planning and designing shore developments¹.

GREEN SHORES enables project design that recognizes the natural features and functions of coastal ecosystems and connects people with the shore environment. GREEN SHORES also delivers triple bottom line (environment, social and economic) benefits and reduces future risk to property and infrastructure by accounting for present and future coastal environments.

GREEN SHORES is based on four guiding principles:

1. Preserve the integrity or connectivity of coastal processes.
2. Maintain or enhance habitat diversity and function.
3. Minimize or reduce pollutants to the marine environment.
4. Reduce cumulative impacts to the coastal environment.

The key components GREEN SHORES are:

- The Coastal Development Rating System – Based on GREEN SHORES principles and Green Building rating programs. This system is intended for use by designers, builders and owners to guide GREEN SHORES design and assess design performance.
- Project examples – The GREEN SHORES project provides design examples of alternatives to seawall and riprap methods of shore protection for a range of shore types, physical settings and development scenarios including re-development of former industrial sites, residential development and waterfront public space, including walkways and park areas.
- Support for planning language – For use by local and regional governments to protect and conserve coastal ecosystem values and services, including Official Community Plans and Development Permit Area (DPA) guidelines.
- Outreach program – To expand awareness and uptake of the GREEN SHORES approach by introducing the program to local government and the professional community.

Detail on each of these program components is available on the GREEN SHORES website (www.greenshores.ca).

¹ For a detailed description of the GREEN SHORES program see the GREEN SHORES Project Charter (www.greenshores.ca)



The target market for the GREEN SHORES project includes:

- Property owners, developers, real estate industry – Organizations with vested financial interest in the shore property, associated buildings and their operation.
- Professionals and professional associations – Professionals and firms offering professional services such as building and landscape architecture, coastal and geotechnical engineering, surveying, biological assessment, etc.
- Construction contractors – Firms and industry associations involved in construction of shore structures such as pile driving, shore protection, dredging, etc.
- Non-profit organizations – Organizations with special interest in the coastal environment and management.
- Planners and regulators and elected officials – Federal, provincial and local governments involved in planning, policy, management of marine coastal areas.

In order to move towards sustainable design it is important to understand the key principles behind it and adopt these principles in the design process. Sustainable design requires:

- A strong vision and commitment on the part of the client and the project team from the start of the project.
- The use of life-cycle thinking which brings the team to consider the impacts of the project over its entire life cycle. This goes beyond first cost consideration and provides clarity on the actual long-term cost of a project.
- The use of whole-system thinking which recognizes the interactions and relationships between different components and systems within a project and ensures that they work together rather than against each other.
- An in-depth understanding of the ecology of the site in order to take advantage of landscape features in the design strategies. Taking advantage of the site's natural features not only reduces local impact but can also avoid costs of development and infrastructure otherwise needed to overcome environmental challenges.



OVERVIEW OF THE COASTAL DEVELOPMENT RATING SYSTEM

The Coastal Development Rating System was developed following a review of existing Green Building rating and certification tools². This review provided a summary of the fundamental characteristics of rating tools and made recommendations as to the preferred approach for developing a GREEN SHORES rating and assessment tool. In general this approach follows that taken by the LEED™ Green Building rating system. Some GREEN SHORES credits are adapted from LEED Canada and the US Green Building Council (LEED for Neighbourhoods or LEED-ND) and others have been developed specifically to meet GREEN SHORES principles.

The Coastal Development Rating System has two related objectives:

1. Transform the market.
2. Reduce environmental impact.

The goal of market transformation is to induce lasting structural and behavioral changes in the marketplace, resulting in increased adoption of GREEN SHORES principles. In practice the two objectives are fundamentally linked; minimizing the environmental impact of the built environment by transforming the way shore developments are designed and constructed.

This operational version of the Coastal Development Rating System was prepared by the GREEN SHORES Technical Working Group (Appendix 1). Previous drafts were reviewed by the GREEN SHORES Advisory Committee and a Peer Review Workgroup (also see Appendix 1). In addition, in 2009, an earlier version of the Coastal Development Rating System was piloted on four shore development or shore protection projects in British Columbia (www.greenshores.ca):

1. South False Creek Olympic Village, Vancouver, British Columbia – A LEED platinum residential and commercial development built to house athletes for the 2010 Vancouver Winter Olympics.
2. Essencia at Esquimalt Lagoon, Colwood, British Columbia – A mixed residential commercial development proposed for development near Esquimalt Lagoon, on Vancouver Island.
3. Snaw'naw'as First Nation Campground, Nanoose, British Columbia – A shore rehabilitation and protection project in Nanoose Bay, Vancouver Island.
4. Tyee Spit, Campbell River, British Columbia – A shore and beach rehabilitation and protection project on Vancouver Island.

The results of these pilot assessments were used to inform the revision of the pilot rating system to the current operational version. The rating system is envisioned as a living document with future versions incorporating the comments and experience of users. The development of this operational version of the Coastal Development Rating System is summarized in the following table.

² A Review of Existing Assessment and Rating Tools and their Applicability to the GREEN SHORES Project by Martine Desbois and Associates (www.greenshores.ca)



Version	Dates	Detail
A	March 2007	Issued for internal project team review
B	September 2007	Issued for Advisory Committee Review
C	October 2007	Issued for Peer Review
D	April 2008	Issued for Pilot Use and Public Comment
1	March 2010	Public Release

Developments Addressed by the Coastal Development Rating System

The Coastal Development Rating System applies to residential and commercial waterfront development projects as well as to infrastructure development (such as public walkways) and shore protection works in public spaces (parks and recreational areas).

The GREEN SHORES project recognises that single residential waterfront lots account for the majority of shore developments. These properties present specific challenges for a rating system, particularly with respect to the degree of effort and cost required to address the rating credits through a certification process. The next phase of the GREEN SHORES project intends to adapt the Coastal Development Rating System for single residential waterfront lots (GREEN SHORES for Homes).

The Coastal Development Rating System is not intended to be applied to major industrial developments that require a high degree of shore infrastructure (ports facilities, industrial plants) or commercial facilities or developments such as marinas, with a large requirement for 'in water' activities such as dredging.

A Voluntary Program

Like most other environmental ratings/certification programs (certified wood, certified seafood, Green Buildings) the Coastal Development Rating System is voluntary and relies on support from industry, government, non-government organizations, building owners and the building sector for their adoption. By being voluntary the system is able to incorporate leadership and innovation into its framework, permitting development professionals concerned with the environmental issues to differentiate themselves in the market place.

These volunteer programs can become mandatory when their application is required by a particular jurisdiction, generally local (municipal or regional) governments. Often a mandatory requirement relates to new buildings and developments tied to land purchase or lease, or a condition of rezoning or a master development agreement. On a broader scale, requirements within these voluntary programs may be incorporated into Development Permit Area or local zoning regulations.



Geographic Scope

The Coastal Development Rating System was developed and piloted in British Columbia on the west coast of North America. As such it is directly applicable to coastal areas throughout the Pacific Northwest of the United States and Alaska (the Cascadia region). However, the rating system, with additional region-specific piloting, is intended to be applicable to all coastal systems and could be national or international in scope.





STRUCTURE OF THE GREEN SHORES RATING SYSTEM

Prerequisites and Credits

The GREEN SHORES rating system is built on a similar format to the LEED rating system, in that certification is obtained by meeting all prerequisite criteria as well as a specific number of optional credits.

Prerequisites are essential criteria for GREEN SHORES certification that can be generally accepted environmental best management practices as well as critical issues not addressed in current best management practices for shore developments.

Optional credits count toward GREEN SHORES certification but are not mandatory for GREEN SHORES certification. Documented achievement of the requirements outlined for an optional credit is rewarded by a number of points that contribute to the overall rating for the project. Application for any specific optional credit is at the discretion of the project's design and construction team.

GREEN SHORES certification is achieved by meeting all prerequisites and an additional number of credit points. The certification levels (GREEN SHORES Certified, Silver Certified and Gold Certified) have been set following review of the ability of the pilot projects to achieve the optional credits. The certification levels are set as a total of all applicable points rather than a percent of applicable points.

Credit Format

Each credit is presented according to the following format:

- Intent – Defines the objective or intent of the credit from a GREEN SHORES perspective.
- Context – The environmental or social context for the credit
- Requirement – The measure that must be achieved to meet the objective of the credit. If a particular standard applies, it is specified in this section.
- Submittal – The information required for submission by the applicant in order to assess whether the objective of the credit has been met.
- Strategies and Technologies – Provides ideas and suggestions for project design and specifications.
- Resources – Key websites and documents, both general and regional, that can assist the design team in meeting the credit requirements.





THE CERTIFICATION PROCESS

The following graphic outlines the proposed GREEN SHORES certification process. This process will be refined over time to include issues such as how questions about the rating system or the credits will be answered, the fees associated with registration and certification and whether or not a credit appeal process will be available.

Registration

The applicants can register on line at www.greenshores.ca. It is recommended to register early in the design and development process to maximize the benefits of using the rating system and to establish contact with the future administrative body for the GREEN SHORES certification program, identified for the moment as the GREEN SHORES Entity. Registration of a project provides access to essential information and tools such as the Letter Template documents that outline the requirements for credit submittals for the finalized project. Registration will also provide access to assistance in the interpretation of the credits if necessary.

Documentation

Once the project is registered the team will typically proceed with the design and construction of the project. Early on the team should become familiar with the requirements of each prerequisite and credit and ensure that, as the project progresses, all the documentation required for submittal is gathered. Attempting to complete the submittals post construction can be difficult and expensive, requiring duplication of effort. This can result in incomplete submittals that delay certification and result in lower certification level.

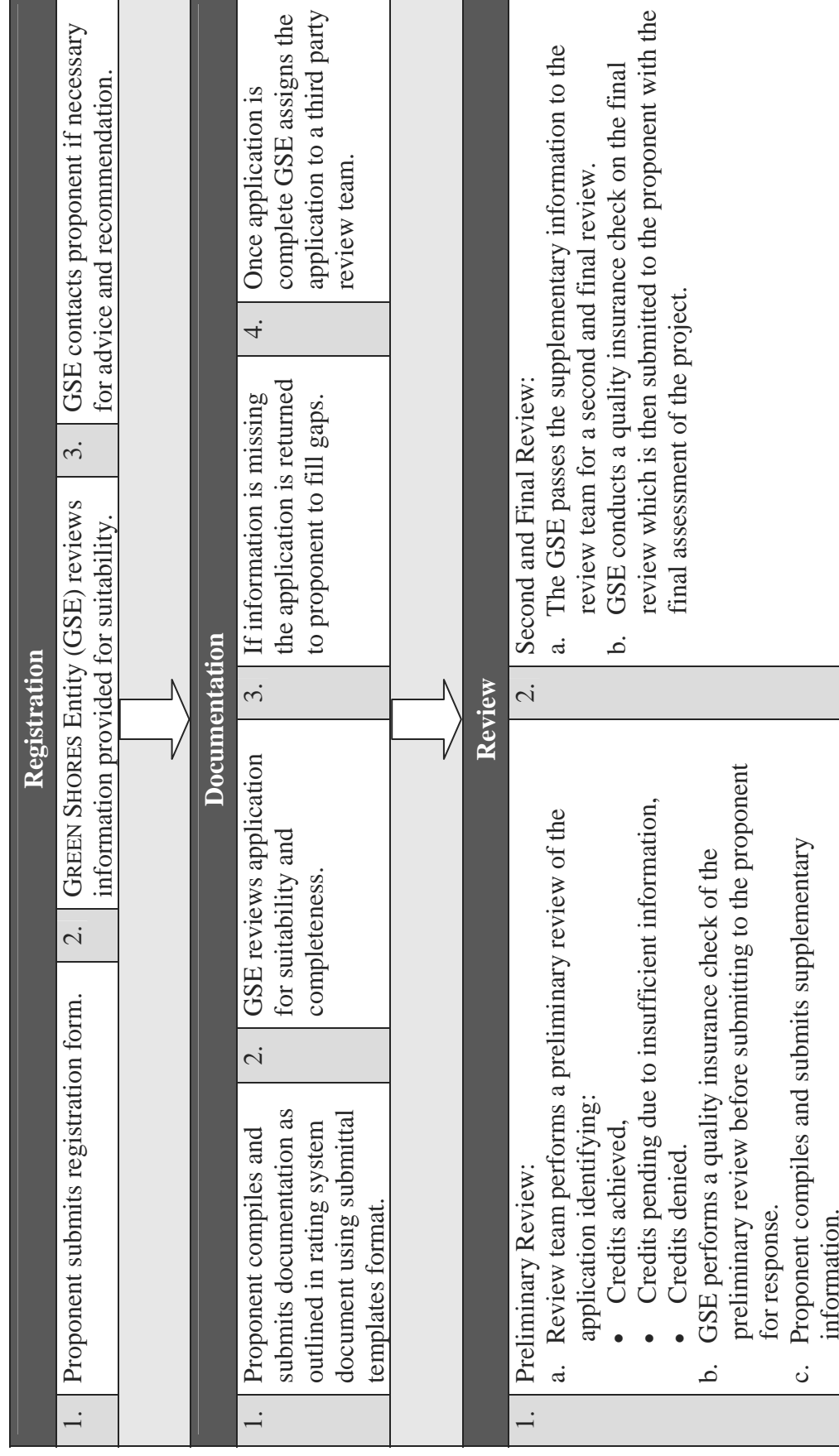
Letter Templates (prepared in spreadsheet format), which are received as part of the registration package, guide the team in the compilation of the appropriate documentation for each credit and prerequisite. However this rating system document provides the most accurate information on the submittals requirements. If there is a conflict between the rating system documents and the Letter Templates, this rating system document prevails. The Letter Templates will contain a List of Submittals outlining the complete list of required documents, including an overall project narrative.

Application and Review Process

Once the project is completed and all the documentation has been compiled the applicant can submit it application. See the graphic below for details of the application process. Upon the completion of the review process, qualifying projects will be awarded its GREEN SHORES certificate.



Schematic Application and Review Process for GREEN SHORES Certification



GREEN SHORES CREDITS

The five GREEN SHORES prerequisites, eleven optional credits (with 28³ possible credit points), and three certification levels are summarized below.

Prerequisites	
Prerequisite 1	Siting of Permanent Structures
Prerequisite 2	Conservation of Critical or Sensitive Habitats
Prerequisite 3	Riparian Zone
Prerequisite 4	Conservation of Coastal Sediment Processes
Prerequisite 5	On-Site Environmental Management Plan

Credits		
Credit 1	Site Design with Conservation of Shore Zone	1 to 3 points
Credit 2	Shore Friendly Public Access	1 point
Credit 3	Re-Development of Contaminated Sites	1 point
Credit 4	Climate Change Adaption Plan	1 to 5 points
Credit 5	Rehabilitation of Coastal Habitats	0.5 to 4 points
Credit 6	Rehabilitation of Coastal Sediment Processes	2 to 3 points
Credit 7	Enhanced Riparian Zone Protection	0.5 to 4 points
Credit 8	Light Pollution Reduction	1 point
Credit 9	Integrated Stormwater Planning and Design	1 to 4 points
Credit 10	Innovation	1 to 2 points
Credit 11	Outreach and Public Education	1 point

Certification Levels	
GREEN SHORES Certified	All Prerequisites plus 5 points
GREEN SHORES Silver Certified	All Prerequisites plus 10 points
GREEN SHORES Gold Certified	All Prerequisites plus 15 points

³ A total of 28 rather than 29 credit points are available as only 1 point can be obtained for bulkhead or riprap removal under Credits 5 and 6





PREREQUISITE 1

Siting of Permanent Structures

REQUIRED

Intent

1. To reduce the need for shore protection by locating permanent structures upland of areas subject to erosion or flooding over the building design life.
2. To reduce the risk of property damage over the building design life.
3. To encourage the assembly of critical site specific information to guide development design.

Context

Poorly sited buildings and structures are at highest risk from episodic events such as flooding from storm surges, severe wave damage, extreme rainfall and related shoreline impacts such as erosion. Keeping permanent structures out of high-risk areas is the most practical and cost effective way of reducing the threat to lives and property from floods and erosion.

Appropriate siting of buildings and other permanent structures requires an understanding of the physical processes at the development site and reduces present and future costly requirements for habitat compensation and shore protection works. A comprehensive understanding of the physical processes affecting a site also eliminates conservatism in design, which can result in both unnecessary structures (such as hardening of the shoreline) and unnecessary costs.

The Option B requirement recognizes that the requirements set out in Option A are not applicable to all situations and provides criteria for locating permanent structures on an appropriate shore site (e.g., non-eroding shores) in a manner that minimizes the need for future protective works.

Applies to

Any *new* permanent structure situated within the development property, although consideration of coastal processes beyond the property boundaries (both in the foreshore and along adjacent properties) will have to be considered when addressing Option B requirements and submittals.

Interpretive Note

This prerequisite applies to the siting of new permanent structures on the development site. Pre-existing structures that do not meet this requirement are considered non-conforming. However; a non-conforming site will still have to meet the requirements of other prerequisites, in particular Prerequisite 4, which provides for compensatory measures if an adequate setback cannot be achieved due to existing site conditions.



Requirements – Option A⁴

Setbacks

1. Permanent structures should be setback a minimum of 15m (horizontal distance) from the present natural boundary (as opposed to the registered land title boundary, which may be based on a pre-existing natural boundary).
2. Permanent structures located at the top of coastal banks or bluffs, where the toe of the bluff is exposed to coastal erosion, should be setback a horizontal distance equal to 3 times the vertical height of the bluff as measured horizontally from the toe of the bluff in addition to the 15m setback outlined in 1 above.
3. The setback must also meet or exceed setbacks established locally or regionally for environmental protection, hazard prevention or other reasons if these levels are more stringent than stipulated above.

Interpretive Notes

As public bike trails and walkways are highly desirable elements of waterfront development, these structures do not have to meet the setback condition (15m) outlined above. However public walkways and bikeways shall meet the vertical elevation standard stipulated below and the requirements of other prerequisites (including the riparian and coastal sediment process prerequisites).

To meet this credit a survey of the present natural boundary will be required. The natural boundary is best determined by surveying to a known vertical datum the elevation of the lower limit of terrestrial vegetation (see definition). This elevation may vary over the site depending on the degree and aspect of wave exposure and site geology. The upper limit of aquatic vegetation should not be used to determine the natural boundary as storm surge or wave run-up often extends beyond the limit of aquatic vegetation except in very protected areas. Salt marsh vegetation (e.g., *Salicornia* sp., *Distichlis* sp. *Carex* sp.) is often wetted at high tide and is considered aquatic vegetation for the purpose of determining the natural boundary. On altered shores (seawalls and riprap) there is often no terrestrial vegetation seaward of the crest of the altered shoreline and it is difficult to determine the elevation of the natural boundary. In this case it may be necessary to extrapolate the elevation of the natural boundary from an adjacent site, or use a physical indication such as higher high water large tide (HHWLT) plus an allowance for storm surge and wave influence effect, which will vary with site exposure.

Vertical Elevation – The occupied portions of a building structure shall be at least 2m above the highest elevation of the present (as opposed to historically surveyed) natural boundary, and shall also meet or exceed flood construction levels established locally or regionally if these levels are more stringent than stipulated above.

Interpretive Notes

On green field sites or previously developed sites without infill - infilling of low lying areas is not an acceptable approach to meet the vertical elevation prerequisite.

On previously developed sites with existing infill - additional fill can be added to the building site to meet the vertical elevation requirement.

Requirements – Option B

The Option A setback requirement may be modified for building sites of suitable substrate and exposure. Under Option B, the modified siting of any permanent structure must allow for 50 years (or the design life of the project, whichever is greater) of natural erosion, without the need for future shore protection to protect permanent structures.

⁴ Adapted from siting guidelines for waterfront in the Strait of Georgia (Section 3.5 of the BC Flood Hazard Areas Land Use Management Guidelines) http://www.env.gov.bc.ca/wsd/public_safety/flood/landuse_mgmt.html. The coastal flood hazard guidelines are subject to revision due to increasing concerns about sea level rise.



Submittals – Option A

1. The Letter Template signed by a Qualified Coastal Professional.
2. A scaled annotated site plan showing:
 - Site elevations and contours relative to a defined vertical datum (geodetic or chart datum), at a minimum 1m contour interval.
 - The surveyed natural boundary and its elevations, relative to a defined vertical datum (geodetic or chart datum).
 - The local or regional flood construction level, if greater than 2m above the natural boundary.
 - The location and elevations of all occupied portions of permanent structures relative to the vertical datum of the site plan.
 - The location and elevation of a toe of bank or bluff subject to coastal erosion, relative to the vertical datum of the site plan.

Submittals – Option B

1. The Letter Template signed by a Qualified Coastal Professional.
2. A scaled annotated site plan showing the information required under the Option A submittal above, as well as topographic or hydrographic survey of the intertidal portion of the development property shore, and, if appropriate, hydrographic survey or largest available scale hydrographic chart offshore of the project site.
3. Design basis report stating the proposed setback, justifying why it differs from the Option A requirements. This report should address the following:
 - Project or service life of the development.
 - Shoreline geology or character and, where appropriate, depth to bedrock or firm strata and size distribution of surface sediments.
 - Description of the coastal processes on and adjacent to the project property within the limits of the affected coastal reach.
 - Estimated mean rate of erosion or accretion for the site shoreline.
 - Tidal range and expected storm surge at site.
 - Chosen allowance for long-term sea level change for the project.
 - Exposure of site to winds and waves.
 - Exposure of the site to tidal or wave driven currents.
 - Design wave climate at the low tide waterline and the present natural boundary for the expected water levels.
 - Wave run up elevation for design conditions, along the property shoreline and at any proposed altered shoreline.
 - Any other appropriate documentation supporting the proposed setback.
 - Sources for listed information.



Strategies and Technologies

The following considerations and planning activities will help address the credit requirement.

- Topographic and hydrographic survey data are key to addressing the submittal requirements, particularly for Option B. Use the relevant portion of the largest available scale hydrographic chart offshore of the project site. In most cases it will be necessary to conduct a site survey to determine site elevations throughout the intertidal frontage and over the site to define the elevation of significant features and the natural boundary relative to an accepted reference datum such as hydrographic chart datum or geodetic datum.
- Verify existing legal boundaries and determine if erosion or accretion has occurred since the original or pre-existing legal survey.
- Consider seasonal and annual changes to shore features within the shore section in which the development property is located. A beach shore can change considerably during the winter storm season. Site building structures to account for these changes. Consult air photos of the site taken at different times throughout the year and over longer intervals that span decadal scale cycles of episodic natural phenomena.
- Assess coastal features and processes and identify potentially sensitive sites such as bluffs, beaches and spits.
- Look for pre-existing features such as culverts, creeks, landslide deposits or other hazards that could potentially effect building siting.
- Incorporate site features into building siting, for example locating a permanent structure on a section of bedrock shore will reduce the need for costly shore protection and may allow the building to be located closer to the water.
- Use existing regional models to account for sea level rise and other climate change effects over the life of the project.

Resources

Projected Sea Level Changes for British Columbia in the 21st century
<http://www.env.gov.bc.ca/epd/climate/pdfs/sea-level-changes-08.pdf>

Sea Level Rise in the Coastal Waters of Washington State
<http://www.cses.washington.edu/db/pdf/moteetalslr579.pdf>

Coastal Stewardship Guide for Planners, Builders and Developers
http://dev.stewardshipcanada.ca/sc_bc/stew_series/NSCbc_stewseries.asp

Tips for Waterfront Property Buyers
<http://www.ecy.wa.gov/programs/sea/pugetsound/buyer/buyer.html>

Access Near Aquatic Areas – A guide to sensitive planning and design (freshwater focus, by approaches and principles and applicable to marine shores.
<http://www.dfo-mpo.gc.ca/Library/213410.pdf>

Sustainable Urban Landscapes – Site Design Manual
<http://www.sustainable-communities.agsci.ubc.ca/projects/DesignManual.html>



Sustainable Building Design; Principles, Practices and Systems

<http://www.gvrd.bc.ca/buildsmart/pdfs/sustainablebuilddesprinciplespracticessys4.pdf>

The Shore Primer – A Cottager’s Guide to a Healthy Waterfront

<http://www.livingbywater.ca/building.html>

Guides for Coastal Property Owners

<http://www.ecy.wa.gov/programs/sea/pubs/93-31/chap1.html>

Puget Sound Shorelines – Buildings Guide

<http://www.ecy.wa.gov/programs/sea/pugetsound/building/building.html>

<http://www.ecy.wa.gov/programs/sea/pugetsound/building/homesite.html>

Environmental Planning and Development at the Site Level

http://wlapwww.gov.bc.ca/wld/documents/bmp/urban_ebmp/EBMP PDF 3.pdf





PREREQUISITE 2**Conservation of Critical or Sensitive Habitats****REQUIRED****Intent**

To conserve existing critical or sensitive natural features and functions of shore zone and protect endangered and threatened species and their habitats.

Context

Sensitive and critical fish and wildlife habitat are generally protected by federal (Fisheries Act, Species at Risk Act), provincial (Riparian Area Regulation) and local (Official Community Plans, Development Permit Areas) government regulations. The objective of this credit is to ensure that these regulatory conditions are met at the development site level.

Applies to

The shore zone of the project area, including the marine riparian zone and foreshore.

Requirements

No net loss of critical or sensitive habitats located within the development shore zone. Any losses of existing critical or sensitive habitats must be offset with on site compensation works. Off-site compensation for losses to existing critical or sensitive habitats cannot be used to meet this credit requirement.

Interpretive Note

Compensation options are limited to on-site areas as GREEN SHORES principles require conservation of proper functioning conditions at the development site level as well as continuity of physical and biological processes and function within the reach of shore where the development is located.

Submittals

1. The Letter Template signed by a Qualified Environmental Professional.
2. A scaled map of the shore zone (riparian, intertidal and subtidal zones if 'in water' works are planned) showing the location and extent of all critical or sensitive habitats in the shore zone in relation to the planned development works.
3. A copy of the approvals or permits from the appropriate regulatory agency or agencies demonstrating that no critical or sensitive habitats will be impacted or a copy of the approved on-site compensation plan demonstrating no net loss for any critical or sensitive habitats that will be impacted. The compensation plan must include an approved monitoring program to assess and confirm the functionality of any compensation habitats.

Technologies and Strategies

- Avoid fill or protective works in intertidal or subtidal areas with critical or sensitive habitats; work with designs that use valued habitat features as part of the shore protection or landscape design.



- Site pile structures (docks, walkways, piers), over areas with little or no vegetation, use grated surfaces on pile structures placed over vegetative features to allow light penetration.
- Avoid landscaping or siting structures and roads in areas of marsh or wetlands.
- Restore areas impacted by the development/construction activities, or previously degraded areas (if needing to compensate for unavoidable habitat losses) to meet or exceed no net loss.

Resources

Canadian Species at Risk Act (SARA) website

http://www.dfo-mpo.gc.ca/species-especes/home_e.asp

BC Conservation Data Centre

<http://www.env.gov.bc.ca/cdc/>

BC Sensitive Ecosystems Inventory

<http://www.env.gov.bc.ca/sei/>

Fisheries and Oceans Operational Statements for Shore Zone Development

http://www-heb.pac.dfo-mpo.gc.ca/decisionsupport/os/operational_statements_e.htm

Shoreline Structures – Environmental Design; A Guide for Structures along Estuaries and Large Rivers

http://dev.stewardshipcanada.ca/sc_bc/stew_series/pdf/ShorelineStructures.pdf

Access Near Aquatic Areas – A guide to sensitive planning and design (freshwater focus with approaches and principles applicable to marine shores.

<http://www.dfo-mpo.gc.ca/Library/213410.pdf>



PREREQUISITE 3

Riparian Zone Protection

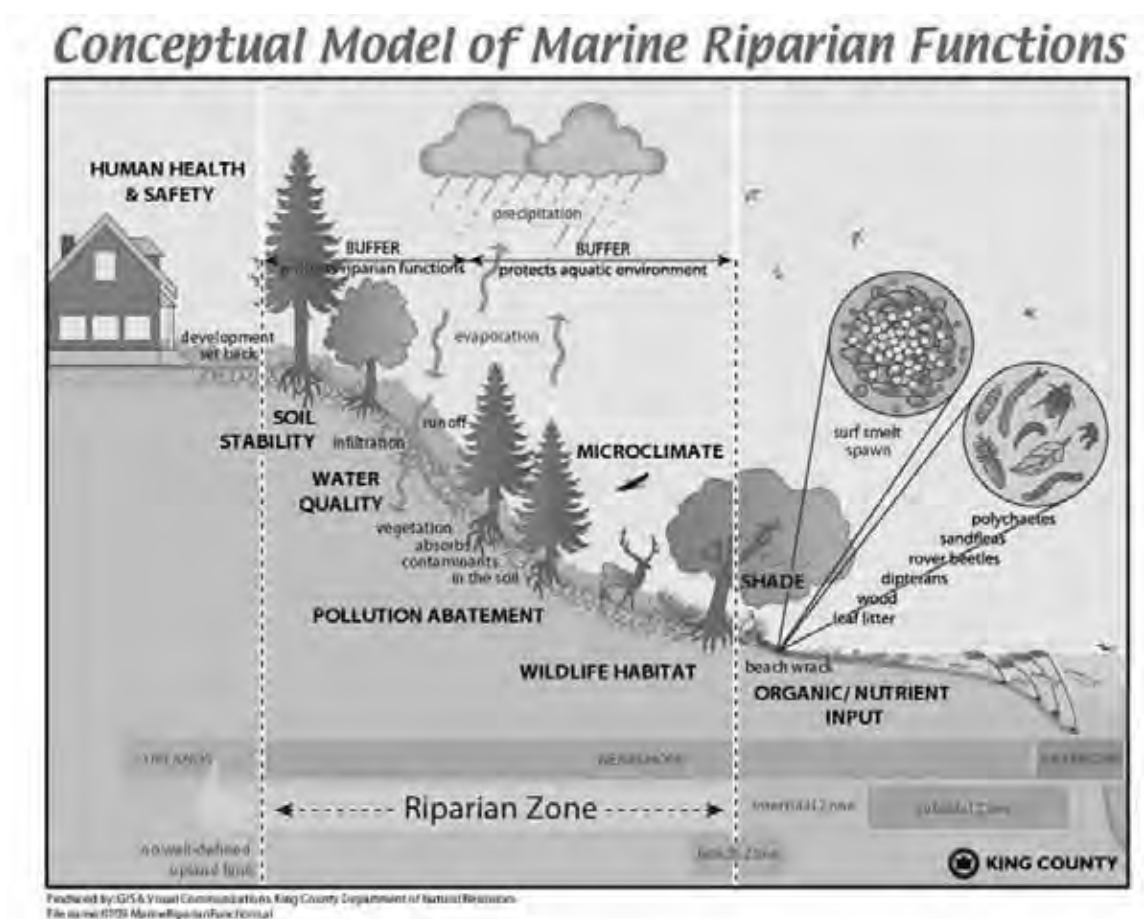
REQUIRED

Intent

To conserve and restore marine riparian vegetation and its associated ecological services such as habitat for shore species, organic input to the nearshore environment, buffering the shore from erosional processes and retention of stormwater runoff.

Context

Shore developments can result in a reduction of coastal riparian features and functions shown in the accompanying figure, often by clearing and levelling naturally vegetated and sloped shores in order to improve water views or create desired features such as grassy level lawns. These ‘improvements’ can have deleterious impacts on site drainage, bird nesting and roosting habitat, bank stability, shading of intertidal areas by tree canopies and reduction of important organic inputs to foreshore areas.



From King County, Washington State

The nature of the riparian zone will vary with rainfall patterns, wind exposure, soil and shore type. For more protected shores the natural riparian zone often consists of a mixture of trees with overhanging canopy and salt tolerant shrubs. More exposed shores will have a higher proportion of shrubs and less overhanging tree canopy. Grasses and small shrubs dominate in the dryer, rocky shore areas that are common in the southern Gulf Islands. A preserved or restored riparian zone should, as best as practical, reflect the natural conditions of the site and region.

Applies to

The riparian zone or shore zone of the project area immediately above the natural boundary.

Requirement

1. Conserve and/or restore (where needed) a riparian zone for a minimum width of 5m, measured as a horizontal distance landward of the natural boundary, over a minimum of 50% of shore length. All development activities must occur outside the designated area.
2. Where restoration is needed, it would be conducted according to a re-vegetation plan/design prepared by a registered professional biologist or certified landscape architect with experience in coastal riparian ecosystems.
3. The plant species and design must match the natural system that is characteristic of the project site; e.g., exposed sandy, rocky, protected estuary, mudflats, coastal forest, etc. Native (indigenous) species are preferred but site-appropriate, non-native species may be used where this is advantageous (e.g., relative hardiness) or when native species cannot be acquired.

Interpretive Notes

While they may physically overlap on the project site, the protected riparian zone is independent of the setback for structures required under Prerequisite 1; i.e., the riparian zone may form part of the setback.

The riparian buffer may incorporate some stormwater infiltration design objectives to meet Credit 9. However, the stormwater infiltration structures must not compromise the other ecological services provided by a riparian buffer.

The riparian prerequisite does not include intertidal re-vegetation, which is addressed in Credit 5.

Submittals

2. The appropriate Letter Template signed by a Qualified Environmental Professional.
3. A scaled site plan showing the location and typical species composition of the existing riparian zone indicating the portion (minimum 50% of shore length) to be conserved and, as needed, restored. The plan, or an accompanying report, should indicate how the conserved riparian zone will be protected during the construction phase (fencing, signage, etc.).
4. If planting is required, a vegetation or re-vegetation plan for the conserved and/or restored riparian zone prepared by a Qualified Environmental Professional, including selected plant species and landscape design.
5. Pre- and post-construction photographic documentation of the designated riparian zone.

Interpretive Note

The plan should include an explanation of how the conservation and restoration measures will maintain or enhance riparian features, function and conditions (e.g., will provide habitat of what type, stabilize loose sediments, improve water filtration, etc.).



Strategies and Technologies

- Avoid extending mowed lawn areas to the top of shore embankments.
- Cluster pathways or other structures that require removal of riparian vegetation to provide access to the shore.
- Use natural riparian vegetation as landscape features.
- Incorporate vegetation and natural resources into shore protection works, such as anchored logs and riparian plantings on relatively protected shorelines.

Resources

Marine Riparian Vegetation Communities in Puget Sound

http://www.pugetsoundnearshore.org/technical_reports.htm

The Shore Primer – How to Preserve Your Shore’s True Nature (freshwater focus)

http://www.dfo-mpo.gc.ca/regions/CENTRAL/pub/shore-rive/page6-11_e.htm

The Living by Water Project

<http://www.livingbywater.ca/main.html>

Shore Landscaping Tips

<http://www.ecy.wa.gov/programs/sea/pugetsound/building/landscape.html>

Lists of Suitable Coastal Shore Riparian Vegetation

http://www-heb.pac.dfo-mpo.gc.ca/publications/pdf/erosion_e.pdf

http://dev.stewardshipcanada.ca/sc_bc/stew_series/pdf/ShorelineStructures.pdf (See Appendix)

<http://www.ecy.wa.gov/programs/sea/pugetsound/species/native.html>





PREREQUISITE 4

Conservation of Coastal Sediment Processes

REQUIRED

Intent

To ensure that shore development does not significantly alter sediment supply to the coastal environment or sediment transport within the coastal environment.

Context

Coastal properties are often ‘connected’ by longshore sediment transport, and alteration of sediment supply or blockage of sediment movement at the development property can cause erosion at a nearby, ‘downstream’ properties. Impacts to alongshore sediment movement are usually caused by placement of structures (groynes, breakwaters) across the foreshore such that longshore sediment transport is disrupted.

Erosion occurs naturally on many coastal properties, particularly coastal banks or bluffs and is an important element of the coastal sediment system because the eroded material is contributed to intertidal, subtidal and other nearshore features in the region. Developments on the upland may affect the natural supply of material to the shore. Most commonly, hardening of shores through seawall construction reduces the sediment supply to the shore zone, unless the shore is in a depositional zone.

Applies to

The development property (both upland and foreshore), although consideration of coastal processes beyond the property boundaries may have to be considered to meet requirements and submittals.

Requirements

1. Longshore Sediment Transport

The proposed shore development must not alter the movement of sediment along the shore to such an extent that the risk of adverse impacts, including erosion, to the development site and adjacent properties is increased.

2. Shore Sediment Supply

- (a) Site development must be designed such that the need for shore protection works is not required over the life of the project or a 50 year cycle of natural erosion, whichever is greater.
OR

- (b) If site features and development design do not allow (a) to be met, and shore protection works are required, then provide a design that will emulate natural sediment supply to the foreshore for a 50 year cycle of natural erosion or the life of the project, whichever is greater. The texture and size of the sacrificial material must be appropriate to the site (e.g., be similar in size and form to that which would be generated by natural erosion).

Interpretive Note

Risk of adverse impacts is defined as the need for the development property or adjacent properties to install shore protection works over the design life of the project.



Submittals

For rocky shores⁵ with no planned ‘in water’ structures:

1. The Letter Template signed by a Qualified Coastal Professional stating that the site is comprised of rocky shore and that no ‘in water’ structures are planned that could impede sediment passage along the shore

Interpretive Note

Bedrock shores are resistant to erosion and do not contribute sediment to the coastal environment if the bedrock extends above wave washed areas. However, sediment may still pass along rocky shores as part of broader scale longshore sediment processes and could be impacted by hard structures (groynes, breakwaters) placed in the intertidal zone. If no ‘in water’ structures are planned, no impacts to coastal sediment transport are expected for rocky shores and, therefore, a sediment transport assessment is not required.

For all other shore types:

1. The Letter Template signed by a Qualified Coastal Professional stating that, over the design life of the project or 50 years, whichever is greater, the project has been designed such that the need to install shore protection works is unlikely or, if shore protection is required, the project incorporates mitigation designs to compensate for any potential impacts to natural sediment supply.

2. Coastal sediment transport assessment and mapping based on existing aerial photo interpretation, a low-tide site visit and supporting analysis showing:

- Dominant and seasonal sediment transport pathways and direction on the project and adjacent properties.
- Sediment sources relevant to the project property.
- Sediment sinks or depositional areas that may be connected to the project property or affected by changes to the pathways that transit the property frontage.

Interpretive Note

In many cases the sediment transport mapping should encompass a larger area than the project shoreline, as coastal processes occur on a shore reach or drift cell scale. An advantage of this larger scale mapping is that such a report may be applicable to several properties within a shore reach or drift cell. Some protected sites may have insignificant coastal sediment processes. In these cases the sediment transport assessment should provide the rationale for concluding that sediment transport processes are not a significant consideration.

3. Supporting documentation including the following topics if relevant to the site:
 - Pre-existing and existing stability (erosion/accretion rates) that establishes the most likely scenario for 50-years or the project life span.
 - Property geology.
 - Expected sediment supply and transport behaviour following completion of proposed works.
 - Proposed design and identification of mitigation strategies, including measures to restore any disruption to the foreshore to the pre-existing elevation if erosion at the toe of protective structures may lower the beach elevation at the base of the structure.
 - Proposed monitoring and sediment emulation plan if required.
 - Where sacrificial materials are proposed, the volume, texture and form must be justified in terms of existing geology and stability calculations.

⁵ Defined as more than 75% bedrock in the intertidal zone and supralittoral zone (the shore zone immediately above the high tide level, commonly kept more or less moist by waves or spray).



4. Any required permits or authorizations from local, provincial or federal government agencies.

Interpretive Note

Shore zones may be designated Development Permit Areas and any activities (protective structures, beach nourishment, etc.) may require a development permit issued by the local government. Shore protection structures or beach nourishment must not encroach beyond the existing natural boundary without provincial (use of Crown foreshore) and federal authorization (Fisheries Act and Navigable Waters Act).

Strategies and Technologies

Where erosion is of concern, consider beach berms or, if shore hardening is required, couple the protective structure with sacrificial material that is similar in composition to native site sediment to emulate the natural erosion process. This may include one or more of the following measures:

- Use a naturally sloped backshore and restore riparian vegetation.
- Beach nourishment with appropriately designed beach slope and sand or gravel material can reduce wave run-up and protect upland property.
- Beach berms and anchored logs may provide sufficient shore protection in less exposed areas.
- Use buried hard material in the immediate upland as a setback ‘sea defence’, coupled with beach nourishment or a beach berm.
- Use bioengineering techniques to stabilize and re-vegetate embankments.

Shore protection structures that encroach beyond the existing natural boundary can also impact public access along the beach at high tide. In addition erosion at the toe of seawalls and riprap structures can lower the beach elevation at the base of the seawall, impacting public access at higher tides. To reduce impacts to public access along the shore locate any necessary hard protection structures (seawalls or revetments) so that the entire structure is landward of the existing natural boundary and restore any disruption to the foreshore to the pre-existing elevation or higher.

Resources

Chapter Two - Coastal Shore Stewardship Guide

http://dev.stewardshipcanada.ca/sc_bc/stew_series/NSCbc_stewseries.asp

Review of Alternative Shore Stabilization Projects in Puget Sound

http://www.psat.wa.gov/Programs/shorelines/FinalPSAT9_15_06withphotos.pdf

Alternatives to Bulkheads

<http://www.ecy.wa.gov/programs/sea/pugetsound/building/bulkhead.html>

The Tide Doesn't Go Out Anymore

<http://www.southalabama.edu/cesrp/Tide.htm>





PREREQUISITE 5

On-Site Environmental Management Plan

REQUIRED

Intent

Minimize impact of construction activity on coastal waters and valued and sensitive habitats and species.

Context

Construction-related sediment input to foreshore areas can negatively impact critical life cycle stages for fish and invertebrates (particularly egg incubation). Certain plants and filter feeding invertebrates are sensitive to increased sediment input. In addition, many contaminants are bound to sediment, so reducing sediment input also greatly reduces the risk of contaminant movement to foreshore areas.

Applies to

The development property and adjacent foreshore.

Requirement

Develop and follow an environmental management plan (EMP) specific to the project site, to multiple contract projects within a site, and/or multiple individual properties that includes the shoreline site. The EMP should include:

1. Sediment and erosion control during construction, including prevention of construction-related soil loss and reduction of sediment input to the receiving environment from construction-related run off and storm water.
2. Appropriate construction timing windows based on habitat use (e.g., fish presence, bird migration and breeding seasons, etc.).
3. Measures taken to prevent the risk of hazardous materials and contaminant spills, including oil, gas and hydraulic fluid.
4. Response plan and equipment available in the event of an accidental spill of hazardous materials.
5. Measures to prevent polluting the air with dust, smoke and other particulate matter, as applicable.
6. On site briefing and reporting requirements for environmental monitoring by a Qualified Environmental Professional.

The environmental management plan should incorporate appropriate elements of the BCMOE Standards and Best Management Practices for Instream Works - Operational Best Management Practices for Stream Bank and Lakeshore Protection

(<http://www.env.gov.bc.ca/wld/documents/bmp/iswstdsbpsmarch2004.pdf>)

as well as Fisheries and Oceans Canada Operational Statements (http://www-heb.pac.dfo-mpo.gc.ca/decisionsupport/os/operational_statements_e.htm) for any relevant construction activity (dock construction, beach maintenance).



Submittals

1. The applicable Letter Template signed by a Qualified Environmental Professional.
2. A copy of the environmental management plan with documentation that the plan adheres to the referenced Best Management Practices.
3. For constructed projects or projects under construction, copy of one or more Environmental Monitoring Reports, indicating compliance with the environmental monitoring plan.

Strategies and Technologies

- Reduce sedimentation during the construction phase by use of silt curtains and fences, sedimentation ponds, and reduction of soil runoff by riparian plantings and hydro seeding.
- Establish clearly defined construction boundaries so as to minimize disturbance and potential sediment run-off.
- Schedule work at appropriate times of year to lessen disruption to fish and fish habitat (contact local DFO office for information on construction timing windows) and bird nesting or migration periods (refer to BC's Develop With Care manual and other provincial BMP guidelines – see resources below).
- Use staked or floating silt curtains, cofferdams, in stream weirs, or settling ponds.
- Operate machinery in a manner that minimizes disturbance to the banks of the water body and the receiving environment (machinery in clean condition, free of fluid leaks, use of vegetable based hydraulic fluids).
- Wash, refuel and service machinery and storing fuel and other materials for machinery away from the water to prevent deleterious substances from entering the water.
- Keep an emergency spill kit on site and know how to use it.

Resources

Standards and Best Management Practices for Instream Works

<http://www.env.gov.bc.ca/wld/documents/bmp/iswstdsbpsmarch2004.pdf>

Fisheries and Oceans Canada Operational Statements for Specific Construction Activities

http://www-heb.pac.dfo-mpo.gc.ca/decisionsupport/os/operational_statements_e.htm

Slope Stabilization and Erosion Control Using Vegetation

<http://www.ecy.wa.gov/programs/sea/pubs/93-30/>

Shore Property Construction

<http://www.ecy.wa.gov/programs/sea/pugetsound/building/construction.html>

Erosion Control and Construction Management Sections of The Stream Stewardship Guide

<http://www.dfo-mpo.gc.ca/Library/189990.pdf>

Section 3 Develop with Care: Environmental Guidelines for Urban and Rural Development in British Columbia

http://www.env.gov.bc.ca/wld/documents/bmp/devwithcare2006/develop_with_care_intro.html

BC Ministry of Environment – Guidelines and Best Management Practices

<http://www.env.gov.bc.ca/wld/BMP/bmpintro.html>



CREDIT 1**Site Design with Conservation of Shore Zone****1-3 Points****Intent**

To reduce the need for shore protection structures through site design that leaves the shore zone free of development.

Context

The basic concept behind this credit is to designate the shore zone as ‘common area’ that buffers development from hazards associated with the shore zone while also buffering the shore zone from impacts of development. There are several potential benefits in moving development away from the shoreline:

- It reduces risks of flooding, storm surge and erosion to structural and property assets.
- It allows for preserving, restoring and/or enhancing shore zone habitats and processes.
- It can provide a community amenity – waterfront access – that is highly valued. Many people can enjoy an expanse of waterfront area rather than a few private owners on limited frontage.
- It affords the ability to locate common access points and facilities (e.g., docks, piers) in the best, lowest impact sites, avoiding the proliferation of individual facilities along the waterfront.
- Future lot owners can enjoy the water view without the higher taxes typically associated with waterfront property.



Traditional shoreline subdivision



‘Clustered’ shoreline subdivision

Applies to

Site plans and subdivision designs affecting a shore area.

Requirements

1. Designate permanently a minimum of 75% of the shoreline as a ‘common area’ subject to no development (other than for limited recreational use, as described below)
2. The designated area must have an average width of 3m or greater, measured as the horizontal distance landward of the natural boundary, with a minimum width of 7.5m at any given point.



Points are awarded on the following basis:

Nature of Common Area	Points
Typical urban or community park with pathways, dock, swimming beach, and other human-use facilities	1
Nature park with controlled access – boardwalk, viewing platform, small dock or beach, etc.	2
Conservation area with very limited public access, preservation and enhancement of native vegetation, etc.	3

Interpretive Note

The conservation area/park may be publicly or privately owned but with the primary objective of protecting environmentally sensitive features and shoreline processes and, within those limits, provide for public access and enjoyment.

Submittals

1. The applicable Letter Template signed by a Qualified Environmental Professional.
2. A site plan and report indicating:
 - Location of development and shoreline common area.
 - Designation mechanism; e.g., dedication or conservation covenant to local government, strata, non-government organization authorized to receive dedications or covenants, etc.
 - A management plan for the shore zone area indicating environmentally sensitive areas and/or critical shore features and functions and how they will be protected.
 - Type and design of public amenities – e.g., common water accesses (such as walkway, dock) instead of allowing for construction of several individual private accesses. Public access must be designed in environmentally sensitive manner – i.e., minimal footprint for designated use, avoid permanent damage or destruction to riparian vegetation, etc.

Strategies and Technologies

Clustering – Siting lots (in the case of a subdivision plan) or structures (in the case of a multi-use or higher density development plan) away from the shore zone to create open space – see accompanying figures. Clustering may or may not entail ‘density transfer’ or ‘density bonus’.

Density transfer – This refers to locating the same number of units permitted under a given zone on a portion of the development parcel to allow the other portion to be retained as open space or some other community amenity. This can be achieved through using smaller lot sizes or higher density housing or building forms; e.g., duplex-fourplex, townhomes, patio homes, condominium, etc. instead of detached single-family housing. Density transfer may or may not require rezoning the parcel.

Density bonus – Some local governments encourage or provide incentives for clustering through density bonusing – allowing additional units beyond that which would typically allowed under zoning requirements in exchange for additional open space over and above the amount that would normally be required. Generally the additional open space cannot be land that would otherwise be undevelopable.



Development agreements, covenants – A developer who dedicates the shoreline portion of a development parcel to a local government as a park or conservation area may wish to protect the interests of future landowners facing onto or over the shore area by negotiating provisions regarding amenities to serve future landowners (e.g., dock area), protection of views (e.g., limits on built facilities, height limits, view corridors) through development agreements or covenants.

Resources

Thompson Nicola Regional District Lakeshore Development Guidelines 2004

<http://tnrd.fileprosite.com/contentengine/launch.asp?ID=96&Action=bypass>

Local Government Guide for Improving Market Housing Affordability in British Columbia 2005

<http://www.housing.gov.bc.ca/housing/affordable/index.htm>

Planning for housing, 2004: an overview of local government initiatives in British Columbia

<http://www.housing.gov.bc.ca/housing/planhouse/2004/>

BC Office of Housing and Construction Standards. Density Bonus Provisions of the Municipal Act 1997

<http://www.housing.gov.bc.ca/housing/BONUSDN/>

Conservation Design – Randall Arendt

<http://www.greenerprospects.com/products.html>

The Smart Growth Toolkit

<http://66.51.172.116/Default.aspx?tabid=159>





CREDIT 2 Shore Friendly Public Access	1 Point
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Intent

To encourage appreciation of the marine environment, by providing for public access to, and enjoyment of, the shoreline and foreshore in ways that avoid or minimize negative impacts to natural systems and processes.

Context

This credit acknowledges the myriad of socio-economic values associated with coastal shores, and that with careful site planning and design, these values can be realized without compromising environmental values.

Applies to

The development property, both shore zone and upland.

Requirements

Develop and implement a shore access plan for enabling site use without compromising sensitive site features (e.g., riparian buffer, beach grass-dune community, bird nesting habitat, erodible slopes, etc.), prepared by a Qualified Environmental Professional.

Submittals

1. The applicable Letter Template signed by a Qualified Environmental Professional.
2. A scaled site plan and accompanying report indicating how the following objectives will be achieved:
 - Clear entrances/gateways.
 - Well defined public spaces.
 - Access control.
 - Viewpoints and sight lines as vantage points.
 - Protection of ecological services and features and physical processes, as applicable.

Strategies and Technologies

- Choose access points and routes on hardier terrain – e.g., rocky shores and bluffs.
- Incorporate well designed and drained trails, to encourage their use over trampling anywhere along the shoreline.
- Design boardwalks to cross sensitive ecosystems such as coastal wetlands, sensitive dune-grass ecosystems, sparsely vegetated coastal bluffs, etc.
- Incorporate viewpoint platforms.



Resources

Access Near Aquatic Areas: A Guide to Sensitive Planning, Design and Management. 1996. Fraser River Action Plan and Ministry of Environment, Lands and Parks. 82 p.

Coastal Shore Stewardship: A Guide for Planners, Builders and Developers on Canada's Pacific Coast. 2003

<http://www.stewardshipcentre.bc.ca/>

Shoreline Structures Environmental Design: a guide for Structures along Estuaries and Large Rivers. 2002

www.greenshores.ca/sites/greenshores/documents/media/108.pdf

Fisheries and Oceans Canada Operational Statements for dock construction, etc.

http://www-heb.pac.dfo-mpo.gc.ca/decisionsupport/os/operational_statements_e.htm.

Green Shorelines: Bulkhead alternatives for a healthier Lake Washington

<http://www.seattle.gov/dpd/greenshorelines>



CREDIT 3

Re-Development of Contaminated Sites

1 Point

Intent⁶

To remediate degraded waterfront sites where development is complicated by environmental contamination. Re-development of these areas will reduce pressure on undeveloped land and help reverse existing impacts to shores, particularly contaminant input.

Context

Contaminated sites are generally managed by the provinces. In British Columbia, the Contaminated Sites Regulation defines a contaminated site as an area of land in which the soil or underlying groundwater or sediment contains a hazardous waste or substance in an amount or concentration that exceeds provincial environmental quality standards. Under the Regulation, the Province maintains a registry of contaminated sites and the status of their remediation as well as sites under investigation. The Environmental Management Act and Contaminated Sites Regulation also specify standards for acceptable remediation.

The Federal Government regulates contaminated sites on federal Crown lands and non-federal contaminated sites for which the federal government has accepted some or all financial responsibility. Federal policy defines a contaminated site as “one at which substances occur at concentrations (1) above background (normally occurring) levels and pose or are likely to pose an immediate or long term hazard to human health or the environment, or (2) exceeding levels specified in policies and regulations”.

There may be property cost savings as well as tax incentives to choosing to develop on previously contaminated sites.

Applies to

All upland within the property boundary of the proposed development.

Requirements

Develop on a contaminated site and provide remediation as required by provincial or federal contaminated site standards, whichever apply to the parcel.

Interpretive Note

This credit can apply to sites which are not officially classified as contaminated but which meet provincial or federal criteria for a contaminated site.

Submittals

1. The applicable Letter Template signed by a Qualified Environmental Professional with direct experience in contaminated site assessment and remediation.

⁶ The intent of this credit is equivalent to the LEED contaminated site credit (e.g., SS Credit 3, LEED Canada-NC 1.1) and any site qualifying for this credit under LEED would automatically obtain the Green Shore credit.



2. Letter from the relevant regulatory agency, or an independent environmental assessment firm confirming that the site is or was classified as contaminated.

OR

If the site is not officially classified as contaminated, a letter or report from the relevant regulatory agency or an independent environmental assessment firm indicating that the site meets some or all of the criteria for a contaminated site.

3. Letter from the project engineer or party responsible for the remediation that remediation has been completed to the appropriate standard.

Strategies and Technologies

Under the BC Contaminated Sites Regulation, developers may use a variety of generic and site-specific factors to decide whether a site is legally considered to be contaminated. They also have the right to choose from a numeric or risk based standards when undertaking remediation.

On Federal lands, remediation measures are determined according to a step-by-step process, beginning with a rough estimate of the contamination based on guidelines adopted by the Canadian Council of Ministers of the Environment (CCME). The final stage in the procedure process is an Environmental Site Assessment that uses field sampling and laboratory analysis to determine the type and level of contamination present.

Specific strategies for remediation include pump-and-treat, bioreactors, land farming, capping and various forms of in-situ remediation.

Resources

BC Contaminated Sites Regulation

http://www.qp.gov.bc.ca/statreg/reg/E/EnvMgmt/EnvMgmt375_96/375_96.htm

Ministry of Environment – Land Remediation Section (formerly Contaminated Sites)

<http://www.env.gov.bc.ca/epd/remediation/>

A Compendium of Working Water Quality Guidelines for British Columbia (including Working Guidelines for Sediment)

<http://www.env.gov.bc.ca/wat/wq/BCguidelines/working.html>

Canada – Federal Contaminated Sites Inventory

<http://www.tbs-sct.gc.ca/fcsi-rscf/home-accueil.aspx?Language=EN&sid=wu12213546663>

The Canadian Council of Ministers of the Environment (CCME) – Contaminated Sites Publications

http://www.ccme.ca/publications/list_publications.html#link4

Environment Canada – Canadian Environmental Quality Guidelines at a Glance (water, soil, sediment and tissue residue)

<http://www.ec.gc.ca/ceqg-rcqe/English/download/default.cfm>



CCME – Guidance Manual for Developing Site-Specific Soil Quality Remediation Objectives for Contaminated Sites in Canada

http://www.ccme.ca/assets/pdf/sqg_site_sp_guidance.pdf

WSDE (Washington State Department of Ecology) (1995) Sediment Management Standards

http://www.ecy.wa.gov/programs/tcp/smu/sed_standards.htm





CREDIT 4

Climate Change Adaptation Plan

1-5 Points

Intent

To encourage consideration of climate change impacts in the planning and design of shore developments.

Context

This credit recognizes that while development density is increasing along the coast, global climate change represents a real threat to development through the following:

- Predicted sea level rise and with it, more extensive coastal inundation.
- Higher wave heights and storm surge flooding.
- Increased shoreline erosion.
- Increased rainfall and runoff compounded by drainage problems due to higher downstream sea levels.

The intent is to encourage planning and design that will reduce the risk to existing and future coastal development from the effects of climate change, thereby reducing the need for future public and private expenditures for protection of any such development or of the environment.

Applies to

All permanent structures, shore protection works and other development amenities situated within the shoreline area of the development property.

Requirements

1. Documentation of projected change in the location of the natural boundary on the site due to climate change over 50 years or the life of the project, whichever is greatest (1 point).
2. Documented measures that accomplish one or more of the following approaches to adapting to climate change – see Technologies and Strategies for example measures for each approach:
 - Avoid (2 points).
 - Protect (1 point).
 - Accommodate (1 point).
 - Retreat (2 points).

Interpretive Note

A key element of this credit is to project changes in the natural boundary over the life of the project. Reference to national, regional or local projections of expected sea level rise (SLR) and the consequences of the associated climate change will be required. See Table 1 regarding SLR projections for various locations in British Columbia. Most climate scientists now consider that the high estimate of global sea level rise (third column in Table 1) should be used for climate change adaption planning. See Appendix A of Thompson, Bornhold and Mazzotti 2008 (<http://www.dfo-mpo.gc.ca/Library/335209.pdf>) for further detail on predicted sea level rise for various tide gauge and GPS stations in British Columbia. Changes in wave and storm surge regime, rainfall, stream flow and sediment discharge may also need to be estimated. Because they tend to have less impact on the shoreline environment, Avoid and Retreat measures are generally preferred over Protect and Accommodate measures and therefore, are assigned 2 points.



Submittals

1. The applicable Letter Template signed by a Qualified Coastal Professional.
2. A report describing the basis of the projection of the natural boundary through to the end of the project life. This document will include evaluation of the expected wave and water level risks for the currently observed rates of sea level rise, including natural ground subsistence or rebound, as well as the nationally or provincially defined most likely predicted sea level rise due to global climate change. If relevant, the report should also address the expected effects of rainfall and associated surface runoff or groundwater flow and the expected effects on sediment supply in the coastal reach in which the property is located.
3. A site plan indicating the projected natural boundary location, related setbacks, structure locations and designs to meet one or more of the four approaches described above.

Location	Sea Level Rise based on <i>extreme low</i> estimate of global sea level rise (m)	Sea Level Rise based on <i>mean</i> estimate of global sea level rise (m)	Sea Level Rise based on <i>extreme high</i> estimate of global sea level rise (m)
Prince Rupert	0.10–0.31	0.25–0.46	0.95–1.16
Nanaimo	–0.04	0.11	0.80
Victoria	0.02–0.04	0.17–0.19	0.89–0.94
Vancouver	0.04–0.18	0.20–0.33	0.89–1.03
Fraser River Delta	0.35	0.50	1.20

Table 1: Estimated Relative Sea Level Rise by 2100 over 2007 levels for representative locations along BC's coast. The "mean" estimate is based a global mean SLR of 18-59 cm (from the IPCC 2007 estimates) and the "extreme high" estimate is based on a global mean SLR of 1 meter. Most climate scientists now consider that the high estimate of global sea level rise (third column in Table 1) should be used for climate change adaption planning. Source: Bornhold, 2008: <http://www.env.gov.bc.ca/epd/climate/pdfs/sea-level-changes-08.pdf>

Technologies and Strategies

Strategies for dealing with expected climate change are being developed around the world, but can be generally characterized as:

1. Avoid – For example: adequate setbacks based on Prerequisite 1 but from the projected natural boundary rather than current natural boundary; or no development in portions of the site that would be inundated by predicted sea level rise and storm flooding.
2. Protect – In the context of GREEN SHORES, this involves soft protection measures such as storm berms or dunes, beach replenishment and wetland restoration or creation. Use of GREEN SHORES applicable measures are generally covered by other credits (such as Prerequisites 1 and 4, Credits 6 and 9). The difference for this credit is that the use of such measures must allow for predicted climate change effects in their design.



3. Accommodate – Continued occupation of coastal land while adjustments are made to structures and infrastructure to accommodate the effects of climate change. Measures include:
- Raising structures above projected climate-change induced flood levels (i.e., higher than existing FCL requirements) in ways that meet GREEN SHORES principles (e.g., piles, not fill).
 - Redesigning existing structures ('floodproofing').
 - Designing restoration or rehabilitation works for rising sea levels (e.g., designing for future elevation of constructed intertidal marshes).
 - Adjusting use to allow for periodic flooding (e.g., closure of public walkways).
 - Additional or specialized insurance to cover flood damage.
 - Entering into appropriate covenants that acknowledge the potential hazard and limit liability of public agencies.

Accommodation may also include measures to address other on-site issues. Low-lying coastal communities will face increasing difficulties draining treated wastewater and stormwater via traditional gravity-based systems, as these systems may 'back up' with rising seawater at their outlets. This will be exacerbated if more extreme precipitation events also occur as part of climate change.

4. Retreat – Includes measures such as:
- Move existing permanent structures above the projected natural boundary, out of the path of projected inundation.
 - Remove existing protective structures and, (a) establishing new, 'soft' protective structures above the projected natural boundary, or (b) not re-establishing protective structures and allowing for future inundation of the shoreline area (e.g., creation of salt marsh).
 - Allowing sufficient room for future retreat of the riparian zone.
 - Recognizing that property threatened by climate change will be abandoned when conditions become intolerable. In some cases, resettlement, recombination of affected property boundaries and the adjustment of sub-boundaries may be a more cost-effective long-term option than protect or accommodate. 'Rolling easements' are a tool that allows for development in shoreline areas but without protective structures, and with the acknowledgement that the natural boundary will move inland over time, forcing retreat or even abandonment eventually.

Resources

Projected Sea Level Changes for British Columbia in the 21st Century
<http://www.env.gov.bc.ca/epd/climate/pdfs/sea-level-changes-08.pdf>

An Examination of factors affecting relative sea level change in British Columbia -
<http://www.dfo-mpo.gc.ca/Library/335209.pdf>

US Army Corps of Engineers – Incorporating Sea Level Change Considerations into Civil Works Programs – contains guidance on calculating sea level rise over a project life (to 2100)
<http://140.194.76.129/publications/eng-circulars/ec1165-2-211/entire.pdf>



Climate Change Impacts and Adaptation: A Canadian Perspective

http://www.adaptation.nrcan.gc.ca/perspective/coastal_1_e.php

Intergovernmental Panel on Climate Change

<http://www.ipcc.ch/>

Sea level Rise in the Coastal Waters of Washington State

<http://www.cses.washington.edu/db/pdf/moteetalslr579.pdf>

GREEN SHORES Climate Change Issue Sheet

www.greenshores.ca

Adapting to Coastal Climate Change – USAID report

http://www.usaid.gov/our_work/cross-cutting_programs/water/docs/coastal_adaptation/adapting_to_coastal_climate_change.pdf

New Zealand Ministry for the Environment. 2008. Coastal Hazards and Climate Change: a Guidance Manual for Local Government in New Zealand. 2nd Edition revised by D. Ramsay and R. Bell. viii + 127 p.



CREDIT 5 Rehabilitation of Coastal Habitats

0.5-4 Points

Intent

To recover ecosystem features, functions and processes by restoring or creating higher valued habitats, including critical or sensitive habitats.

Context

This credit is applicable to sites where previous development has impacted pre-existing conditions, including critical or sensitive habitats. At many sites pre-existing conditions are often unknown or, if known, restoration to pre-existing conditions is often not feasible. For these reasons the number of points awarded for this credit is based on the area and functional value of the restored or enhanced habitat, rather than the extent of pre-existing habitat restored.

The remediation or habitat creation area should be restricted to lower valued or degraded habitat as it is not the intent of this credit to place rehabilitation works over functional natural habitat. For this reason it is important for the submittal report to document pre-existing habitat conditions at the rehabilitation sites.

The environmental quality of the foreshore, particularly in port and harbours, may be degraded from historic upland or in-water (log booming, marinas, dockyard) sources. Storm drains and industrial outfalls (often at some distance from the site) may be sources of ongoing contamination. This credit is applicable to degraded areas where the source of degradation has been contained or eliminated. This may include foreshore areas adjacent to contaminated upland where contamination of the foreshore results from leaching from the upland site. In these cases, receipt of this credit depends on successful remediation of the upland in order to ensure that the source pathway of contaminants to the foreshore has been arrested. The credit also may be received for rehabilitation of historic degradation, such as log booming, that is not related to the adjacent upland.

Applies to

The shore zone of the project area, including riparian and foreshore areas. In certain cases enhancement of critical or sensitive habitat in areas extending beyond the development property boundary will be considered for this credit, if assurances can be made through covenants or other means that these rehabilitated areas will be maintained during future development.

Requirements

1. Develop and implement a habitat rehabilitation plan for the restoration or creation of habitats in the shore zone.
2. Develop a monitoring plan to assess and confirm the functionality of the restored or created habitats. The monitoring plan must include benchmarks for habitat functionality, including viability, time frame and a financial commitment to complete the monitoring plan and implement remedial measures if required.



As remediation opportunities are often limited by site conditions, no minimal threshold area for this credit is specified, however, the number of credit points awarded depends on the extent and type of habitat rehabilitation.

Habitat Rehabilitation	
Applies to less than 10% of the <u>shore length</u>	0.5 points
Applies to 10-25% of the shore length	1 point
Applies to greater than 25% of the shore length	2 points
Includes creation of <u>critical or sensitive habitat</u>	1 point
Includes removal of a shore pre-existing <u>bulkhead</u> (seawall) or <u>riprap</u> protection	1 point

Interpretive Note

Only 1 point for bulkhead or riprap removal will be awarded under both Credits 5 and 6 (e.g. if bulkhead removal results in rehabilitation of degraded habitat as well as coastal process, only 1 point will be awarded)

Submittals

1. The Letter Template signed by a Qualified Environmental Professional
2. Habitat rehabilitation plan prepared to scale and showing:

- Pre-existing conditions of the rehabilitation area within the development shore zone.
- The type, location, area, elevation relative to geodetic or chart datum, shore length of habitat created or restored.
- A short narrative report outlining the objectives of the plan, the strategies and technologies used to implement the plan (including photographic documentation of pre and post rehabilitation conditions).
- The monitoring plan used to assess and confirm the functionality of the restored or created habitats.

Interpretive Note

If the rehabilitation plan includes addressing contaminated sediments, include a letter from the relevant regulatory agency confirming that the site is classified as contaminated or provide documentation of the nature and level of contamination.

Technologies and Strategies

Remediation of marine foreshores is not a common practice in Canada, and strategies and technologies are evolving. General strategies include removal or capping of degraded material. Removal requires that the degraded material is not re-mobilized and dispersed during high tides. In intertidal areas removal is generally done at low tide, when the sediments are dry, and during appropriate operational windows to minimize impacts to marine resources and wildlife. Capping requires careful consideration of the type and amount of material to ensure that the material remains in place for the service life of the project or until natural sedimentation provides an appropriate cover of contaminated material. Choice of capping material also requires consideration of the value of the material as fish habitat, including the nature of any associated benthic community. A number of specific suggestions follow:

- Removal of bulkheads and riprap embankments to provide opportunities for remediation of intertidal marsh and beach grass areas as well as finer sediment habitats.
- Incorporate salt or brackish marsh terraces into the shore where conditions permit.



- Add appropriately sized rock at key tidal elevations to enhance algal vegetation, including canopy kelps (bull kelp and giant kelp).
- Establish sand and fine gravel beaches for spawning by forage fish (sand lance and surf smelt).
- Dune grass plantings can be incorporated into sandy beach and gravel berms to enhance habitat values.
- Eelgrass beds can be restored by transplanting or seeding where conditions permit.
- Wetlands restoration can be coupled with innovative stormwater treatment systems.

Resources

Eelgrass Transplants

http://www.stewardshipcentre.bc.ca/eelgrass/communities_connecting_2.pdf

Wetlands

http://www.wcel.org/wcelpub/1996/11580/11580_what.html

Sand lance Spawning Beaches

<http://www.ecy.wa.gov/programs/sea/pugetsound/species/sandlance.html>





CREDIT 6

Rehabilitation of Coastal Sediment Processes

2-3 Points

Intent

To reverse the impact of existing shore developments on coastal sediment processes.

Context

Many existing developments have altered sediment supply to and along the shore and adversely affected adjacent properties or coastal habitats, primarily by hardening shorelines and constructing groynes and breakwaters. In many cases the type and extent of shoreline hardening may be excessive for the required shore protection and site re-development offers the opportunity to rehabilitate coastal sediment supply and along shore transport pathways as well as valued habitat features (see Credit 5).

In many cases the most effective rehabilitation may encompass a larger area than the project shoreline, as coastal processes occur on a shore reach or drift cell scale. Applicants are encouraged to partner with adjacent property owners, if appropriate, to enable a more effective and economical rehabilitation effort.

Applies to

The development property (both upland and foreshore), although consideration of coastal processes beyond the property boundaries may have to be considered to meet requirements and submittals.

Requirements

1. Demonstrate the restoration of alongshore or across shore sediment processes, either through removal of existing structures, provision of sacrificial sediment materials or other means. – 2 Points
2. The remediation includes removal of pre-existing bulkhead (seawalls) or riprap protection 1 additional point

Interpretive Note

Only 1 point for bulkhead or riprap removal will be awarded under both Credits 5 and 6 (e.g. if bulkhead removal results in rehabilitation of degraded habitat as well as coastal process, only 1 point will be awarded)

Submittals

1. A Letter Template signed by the Qualified Coastal Professional.
2. The Prerequisite 4 submittal amended to also include:
 - A design plan that outlines the rehabilitation initiative and the effect of the initiative on coastal sediment dispersal (using the description of coastal sediment balance and pathways provided in Prerequisite 4).
 - Photographic documentation of the site before and after restoration.



Strategies and Technologies

- Removal of existing bulkheads (seawalls) and riprap embankments and restoration of naturally sloping, vegetated shore.
- Removal of existing piers, groynes or other structures that impede alongshore sediment movement, or modification to allow future coastal sediments to bypass the obstacle.
- Use of sacrificial sediments to restore sediment supply to areas of shore where supply has been impeded by structural development.

Resources

Shoreline Management and Stabilization Using Vegetation

<http://www.greenbeltconsulting.com/>

Review of Alternative Shore Stabilization Projects in Puget Sound

http://www.psat.wa.gov/Programs/shorelines/FinalPSAT9_15_06withphotos.pdf

Alternatives to Bulkheads

<http://www.ecy.wa.gov/programs/sea/pugetsound/building/bulkhead.html>

GREEN SHORES Case Example – Bulkhead Removal

http://www.stewardshipcentre.bc.ca/stewardshipcanada/dynamicImages/1091_pilotreport_Selkirkfinal.pdf

Mitigating Shore Erosion on Sheltered Coasts

<http://www.nap.edu/catalog/11764.html>

Controlling Erosion Using Vegetation

<http://www.ecy.wa.gov/programs/sea/pubs/93-30/using01.html> - coastal

[http://www.em.gov.bc.ca/Mining/MiningStats/Aggregate BMP Handbook/BMPs/Bioengineering.pdf](http://www.em.gov.bc.ca/Mining/MiningStats/Aggregate%20BMP%20Handbook/BMPs/Bioengineering.pdf)



CREDIT 7

Enhanced Riparian Zone Protection

0.5-4 Points

Intent

To encourage developments to exceed the minimum riparian zone protection (Prerequisite 3), thereby furthering conservation and restoration of marine riparian vegetation and ecological function and creating examples of projects that use the riparian zone as a development asset.

Context

This credit is available for projects that are able to significantly exceed the prerequisite minimum 5m riparian zone over 50% of the shoreline length (see Prerequisite 3). For sites with existing riparian vegetation, the intent is to retain existing natural conditions and native species as much as possible. Removal of invasive species is encouraged, and limited planting of non-native, non-invasive species can be applied. On previously developed sites, the natural riparian zone may be minimal and restoration will be required.

All development activities should occur outside the designated riparian zone. Public access to the designated riparian zone should be limited and carefully managed; e.g., incorporate walking paths constructed of permeable material at sites where impact to riparian function is negligible.

Applies to

The shore zone of the project area immediately above the natural boundary.

Requirements

Points are available for extending the protected, restored and/or enhanced riparian zone beyond the prerequisite minimum width of 5m and 50% of shoreline length (see Prerequisite 3) as follows:

- 0.5 point for each additional 15% of shoreline length of the development property shoreline – to a maximum of 1.5 points.
- 0.5 point for each additional 5m of riparian zone width – to a maximum of 2.5 additional points.

Interpretive Notes

The designated riparian zone does not need to be a continuous alongshore section (e.g., it can consist of two designated areas separated by a public access area).

While they may physically overlap on the project site, the protected riparian zone is independent of the setback for structures required under Prerequisite 1; i.e., the riparian zone may form part of the setback.

The riparian zone may incorporate some stormwater infiltration design objectives to meet Credit 10; however, the stormwater infiltration structures must not compromise the other ecological services provided by a riparian buffer.

Riparian restoration does not include intertidal re-vegetation, which is addressed in Credit 5.



Submittals

Submittals are similar to Prerequisite 3.

1. The appropriate Letter Template signed by a Qualified Environmental Professional.
2. A scaled site plan showing the location and typical species composition of the existing riparian zone indicating the portion to be conserved and, as needed, restored. The plan, or an accompanying report, should indicate how the conserved riparian zone will be protected during the construction phase (fencing, signage, etc.).
3. If planting is required, a vegetation or re-vegetation plan for the conserved and/or restored riparian zone prepared by a Qualified Environmental Professional, including selected plant species and landscape design.
4. Pre- and post-construction photographic documentation of the designated riparian zone.

Strategies and Technologies

See Prerequisite 3.

Resources

See Prerequisite 3.



CREDIT 8

Light Pollution Reduction

1 Point

Intent

To reduce lighting impacts on species and ecosystem function within the shore zone.

Context

Many species of birds, fish and invertebrates using shore zone areas have distinct diurnal (day/night) and lunar cycle patterns of activity that can be disrupted by inappropriate lighting. Particularly important activities that can be disturbed by light pollution to the shore zone include shorebird and waterfowl roosting, invertebrate emergence at night from cover as well as fish and invertebrate spawning in foreshore areas. Overlit shore areas can make fish and invertebrates more vulnerable to predation, by attracting predators and making prey more visible to larger predators. Fish vision is sensitive to changes in light levels, and juvenile fish in particular will take a relatively long time to adjust to rapidly changing light levels.

Light pollution takes three basic forms – skyglow, light trespass and glare. Skyglow, caused by poorly designed, unshielded or improperly aimed fixtures, drowns out the night sky. Light trespass is light that crosses property lines, generally outdoor lighting such as parking lot floodlights, and lighted walkways. Glare is the result of too much illumination being applied to one area. This credit primarily addresses light trespass and light glare within the shore zone.

Applies to

Lighting placed within the shore zone of the project area both above and below (e.g., dock lighting) the natural boundary. This credit is available to all developments including (a) those requiring new exterior lighting of the shore zone, (b) those retrofitting existing lighting in the shore zone and (c) projects for which no lighting within the shore zone is planned or required.

Requirements

Within the shore zone above the natural boundary

1. Only light external areas of the site as required for safety and comfort.
2. Install automatic controls to turn off exterior lighting when sufficient daylight is available and during night time hours when lighting is not required.
3. Use motion detectors to reduce exterior lighting levels within the shore zone by at least 50% when no activity has been detected for 15 minutes.
4. Meet LEED for Neighbourhood⁷ light pollution reduction requirements for lighting zone 1 (LZ1) (Table 3 - GIB Credit 17).

⁷ Available at the US Green Building website <http://www.usgbc.org/DisplayPage.aspx?CMSPageID=148> - 2



5. Meet LEED for Neighbourhood light trespass and uplight requirements for lighting zone 1 (Table 2 – GIB Credit 17 which require calculations) or the luminaire ratings specified for LZ1 in Table 4 – GIB Credit 17.

Interpretive Note

The specified light trespass requirements (Requirement 5) apply to lighting placed both within and above the Shore Zone and to both the project property line and natural boundary.

Within the shore zone below the natural boundary

1. Meet the requirements specified under A above, with the exception that the specified light trespass requirements apply to a line 2m seaward of any overwater structure such as docks and wharves.

Interpretive Note

Coast Guard approved navigational aids are exempted from these requirements.

Submittals

2. The Letter Template stating that all exterior lights have been designed in accordance with the requirements of this credit and signed by a the responsible party.
3. Exterior lighting site plan.
4. Site lumen calculations necessary to demonstrate that the requirements 4 and 5 above have been met.

OR

Documentation of luminaire ratings for lighting fixtures placed within the shore zone to demonstrate that the specifications for LZ1 provided in Table 4 – GIB Credit 17 have been met.

Technologies and Strategies

- Using lighting only if and where necessary for safety and comfort.
- Planting or improving vegetation buffers between the light source and the shoreline to screen light from the shoreline.
- Angling outdoor lights downwards and away from shorelines, and replace fixtures that scatter light in all directions.
- Ensuring that lights are switched on only when needed, and use motion detectors.
- Avoiding use of decorative lighting that is visible from shorelines, and re-position direct lighting away from shorelines.
- Shielding the light source.
- Replacing lights on poles with low profile, low-level lamps so that the light source and reflected light are not visible from the beach.



Resources

Effects of Light Pollution on Wildlife

<http://svetlo.astro.cz/jnoles/UnderstandingtheEffectsofLightPollutiononWildlife.ppt>

The New England Light Pollution Advisory Group (General information on outdoor lighting issues)

<http://cfa-www.harvard.edu/~graff/nelpag.html>

Sensible Shoreland Lighting

<http://clean-water.uwex.edu/pubs/pdf/shore.lighting.pdf>

Resource Info for Lighting on Sea Turtle Beaches (much is applicable to all shore habitats)

http://www.broward.org/extension/uw_300.htm





CREDIT 9**Integrated Stormwater Planning and Design****1-4 Points****Intent**

To reduce impacts to the receiving marine environment by on-site management of stormwater runoff.

Context

The landscape associated with the marine interface is typically a water shedding environment. If a stream transects shoreline site, some runoff may be directed into the stream. However, in general, shoreline sites tend to be non-basin drainage areas, shedding water directly to the marine environment along the entire marine interface rather than as a point source discharge.

The term applied to this slow discharge of water across a site is shallow interflow. Traditional engineering practices disrupt these slower processes through the development of faster, more efficient storm drain infrastructure, leading to the delivery of pollution laden water, scouring flows and lowering of water tables on the site and its riparian areas. Working with the natural site form and drainage processes is a better way to maintain and enhance the ecology and physical characteristics of these dynamic shoreline and foreshore landscapes.

The objectives of this credit are to recharge as much rainwater as possible to the ground so as to maintain shallow interflows, and to reduce pollution loads entering the marine environment. To do this requires a variety of planning, site design, landscape design and engineering Best Management Practices (BMPs) to:

- Work with site features and functions (i.e., drainage patterns, slope, soil conditions, etc.) to better manage runoff and pollution.
- Minimize impervious surface area and maximize areas of absorbent soils.
- Use soil and vegetation as contaminant filters and treatment mechanisms.
- Retain valuable existing vegetation or replacing vegetation that needs to be removed.
- Continue to supply moisture to this vegetation.
- Reduce the potential for shoreline and foreshore erosion caused by the use of one large outfall discharge.
- Reduce the risk of significantly disrupting salinity regimes in contained bays and estuarine environments.
- Maintain groundwater flows, thereby reducing the risk of salt water intrusion to upland soils and water tables.
- Avoid nutrient- or contaminant-laden runoff by careful management of fertilizers, pesticides, petroleum products, etc. in adjacent upland areas.
- Minimize the need for stormwater infrastructure through better development, circulation and on-site rainwater management planning and design practices.
- Enhance degraded landscapes and restore landscape functions (natural infiltration process, groundwater recharge, re-establish drainage patterns, etc.).



Applies to

The development property and adjacent foreshore as well as consideration of upland inputs such as streams, seeps, groundwater flow and human-made stormwater structures.

Requirements

Develop and implement a comprehensive stormwater management plan for the project that, through infiltration, evapotranspiration, reuse and other source control BMPs, captures and treats on-site the rainfall volumes listed in the table below. These rainfall capture targets are based on the Average Annual Rainfall Event (AARE), the rainfall event that occurs once per year, on average. A rainfall event is defined as total daily rainfall – i.e., mm of rainfall accumulated over 24 hours. For example, if the recorded AARE is 60 mm, to obtain 4 points under this credit requires measures that will capture and treat 54 mm of rainfall.⁸

Percentage of Average Annual Rainfall Event (AARE) to be Captured on Site	Points
75%	1
80%	2
85%	3
90%	4

To determine the AARE for a project site, projects may use applicable regional rainfall data, run an approved stormwater model (e.g., the Water Balance Model), or independently gather local rain gauge data and rank rainfall events. All of the water volume from rainfall events up to the 75, 80, 85 or 90 percentile must not be discharged to the marine environment or to surface waters that flow into marine waters (i.e., must be infiltrated, evapotranspired and/or re-used on site) - unless the runoff is harvested, re-used and then authorized for discharge into a stormwater treatment system.

Any runoff in excess of the chosen Rainfall Capture Target must be discharged in a manner that:

- Does not erode or destabilize the shoreline or foreshore.
- Does not cause significant sediment transport over and above natural levels in the surrounding area.
- For estuaries and contained bays with limited volume mixing, does not significantly disrupt natural salinity regimes.

⁸ Managing rainfall based on AARE is approximately equivalent to managing runoff from storms with a 2-year return period (or storms that have a 50% chance of occurring in any given year), which is recommended under the federal *Land Development Guidelines for the Protection of Aquatic Habitat* (1992). This assumption results in conservative site design criteria, which can be optimized over time through continuous simulation modeling, and by monitoring the performance of demonstration projects. (BC Ministry of Water, Land and Air Protection. 2002. Stormwater Planning: A Guidebook for BC: 6-9 - 10)



Submittals

1. Letter template signed by a qualified professional.
2. A stormwater management plan that includes:
 - An existing conditions site plan indicating form and function of the landscape and includes site contours, runoff flow paths and water bodies (wetlands, ponds, lakes, etc.), existing vegetation and general soil conditions. For highly modified sites, this plan should illustrate historical information as it relates to hydrological conditions on the site; e.g., wetlands, depressions, and marine environments that have been filled; pre-development flow paths based on site topography.
 - A site design plan indicating the project's development footprint and the location of planned stormwater management technologies and BMPs.
 - The calculation and/or model and associated results used to calculate the applicable percentile rainfall event and water volume to be retained on site.
 - The rainwater management BMPs to be employed, including design and specifications.

Strategies and Technologies

The general strategy is to design sites that fit the hydrologic environment and work with the natural landscape. To achieve this, it is important to understand how the site functions in its present and/or pre-development condition. In this way, the design team can more easily integrate building and site infrastructure design schemes while maintaining or enhancing site functions. This approach often identifies opportunities such as old drainage features, historical land and marine features, and intrinsic site values that are often overlooked.

Integrated and sustainable designs should have low environmental impacts and pose no risks to humans. Examples include:

- Identify and work with sub-drainage patterns present on the site; runoff from one area should not be directed to other sub-drainage areas.
- Utilize Low Impact Development (LID) practices to reduce impervious surfaces and infrastructure development. Examples include, clustering buildings to protect natural vegetated areas (see PBS Credit 3), narrowing roads, creating more efficient road circulation patterns to reduce road length and impermeable surface area, enhance pedestrian and bicycle circulation to reduce automobile trips, etc.
- Direct runoff from impervious surfaces (roofs, driveways, walks, etc.) into designed landscape areas.
- Identify areas of permeable soils and develop as infiltration areas.
- Consider filtration beds, infiltration swales, retention ponds, and rain gardens to recharge on-site groundwater and limit runoff rate. In highly consolidated, high clay/silt soils, infiltration through a rain garden or other suitable treatment to an under drain over a reservoir, which then discharges to a storm drain may be appropriate treatment.
- Replace point (end of pipe) discharges to the foreshore with diffuse discharges alongshore to simulate natural seepages and reduce erosion potential.



- Re-establish shallow interflow drainage through the use of flow spreaders and other water dispersal BMPs.
- Use permeable materials such as permeable pavers, grass and gravel, structurally reinforced surfaces and other permeable hardscape surfaces for parking lots, driveways, plazas, patios and walkways.
- Create 'green roofs', which use soil and plants to absorb and evaporate water and slow runoff.
- Collect, store and recycle stormwater runoff from roofs (e.g., use for toilet flushing or irrigation).
- Avoid or minimize any pollution-generating surfaces, such as landscaping that will receive treatments of fertilizers or pesticide.
- Ensure adequate, clean/treated drainage to sensitive nearshore features that require freshwater input such as wetlands and intertidal marshes.

Resources

BC Ministry of Water, Land and Air Protection. 2002. A Guidebook for British Columbia Stormwater Planning

<http://www.env.gov.bc.ca/epd/epdpa/mpp/stormwater/stormwater.html>

BC Ministry of Environment Water Quality Municipal Best Management Practices

http://www.env.gov.bc.ca/wat/wq/nps/BMP_Compendum/Municipal/Municipal_Home.htm

Water Balance Model Canada.

<http://www.waterbalance.ca/>

Stormwater Source Control Design Guidelines 2005. Greater Vancouver Regional District.

<http://www.metrovancouver.org/services/wastewater/sources/Pages/StormwaterManagement.aspx>

Landscape Planning and Environmental Applications, 4th Ed., 2005 W.M. Marsh, John Wiley & Sons, Inc.

City of Portland – Sustainable Stormwater Management

<http://www.portlandonline.com/bes/index.cfm?c=34598>

Low Impact Development - Technical Guidance Manual for Puget Sound

http://www.psat.wa.gov/downloads/LID/LID_manual2005.pdf

How does Low Impact Development Work?

http://www.psat.wa.gov/Programs/LID/LID_works.htm

Low Impact Development Centre

<http://www.lowimpactdevelopment.org/>

Rain Gardens: Improve Stormwater Management in Your Yard

http://www.cmhc-schl.gc.ca/en/co/maho/la/la_005.cfm

Green Roofs

<http://www.duluthstreams.org/stormwater/toolkit/greenroofs.html>



Puget Sound Action Team: Permeable Pavement

http://www.psat.wa.gov/Publications/LID_studies/permeable_pavement.htm

Also see local and regional government websites for guidelines pertaining to the stormwater management design in a specific locality.





CREDIT 10 Innovation

1-2 Points

Intent

To encourage exceptional performance or design innovation exceeding the requirements set by the GREEN SHORES rating system, or providing novel approaches to meeting the credit requirements. To encourage the sharing of innovation in coastal design.

Context

Green site planning and alternative shore protective designs are new and evolving, and suitable designs for specific sites and site conditions are not readily available to professionals or the public. The innovation credit is intended to encourage the project team to develop novel designs to meet specific conditions, and to build expertise and experience within the professional community with GREEN SHORES approaches and designs.

This credit includes exceeding GREEN SHORES performance standards in specific credit categories as well as innovation in categories not specifically addressed by the rating system but which meet the guiding principles of GREEN SHORES.

Applies to

The development property and adjacent foreshore.

Requirements

1. For credits with a quantifiable performance measure – designs and techniques that: (a) exceed the specified performance measure by 50% or (b) demonstrate a novel method of meeting the specified performance measure.

OR

For credits without a specific performance measure or a performance measure that cannot be exceeded (e.g., “conserve 100% of...”) – demonstrate a novel method of meeting the credit.

OR

Demonstration that the project design or planning process has addressed a specific issue or situation not covered by any GREEN SHORES credit but which addresses GREEN SHORES principles.

One point will be awarded for each innovation initiative – to a maximum of 2 points regardless of the number of innovative measures being considered.

Interpretive Notes

For the riparian zone an innovation credit will only be considered for designs that exceed Credit 6.

The applicant must be willing to make the innovation credit submittal publicly available on the GREEN SHORES website or other public forum.



Submittals

1. Letter template signed by the responsible individual.
2. Identify, in writing, the rationale for the proposed innovation credit and demonstrate how the approach or design meets the guiding principles of the GREEN SHORES project as well as the requirements stated above. Provide an illustration of the design concept, photographic documentation of pre- and post-construction conditions if applicable. For innovative building siting or means of conserving or remediating coastal processes, provide a design basis report as outlined in this document under the respective credit categories.
3. Authorization by the responsible individual to make the innovation credit information available publicly.

Strategies and Technologies

Examples of approaches and designs qualifying for innovation credits include:

- New beach protection designs that meet GREEN SHORES principles.
- New and different ways of avoiding or mitigating development impacts on sensitive habitats and species.
- Imaginative public consultation processes that go beyond basic stakeholder consultation and involves the community extensively and effectively.
- A particularly comprehensive design process that involves a wide range of expertise in a variety of methods and venues.



CREDIT 11

Outreach and Public Education

1 Point

Intent

To enable the outreach and uptake of GREEN SHORES design models by coastal property owners, developers, contractors, the professional community, and local government.

Context

Impacts to coastal ecosystems from waterfront development are not always well recognized by planners, developers and waterfront property owners. As a result shore protection works are frequently designed and built without full regard for their impact on the coastal ecosystem. Even when these impacts are recognized, appropriate designs to minimize impacts are not readily available. For these reasons communication of GREEN SHORES design approaches and concepts to the professional community and public is essential in order to build awareness of coastal development issues as well as provide greater accessibility to resources and design expertise to address these issues.

Applies to

The development property and adjacent foreshore.

Requirements

Incorporate a GREEN SHORES educational component into the project design, construction or post construction phases which includes any two of the following elements.

1. A comprehensive signage program describing site values, coastal ecological and physical processes and an explanation of how the site design works with these features. Signage should address how one or more GREEN SHORES credits have been addressed.
2. A public outreach program including interpretive walks or tours, public lecture or multimedia series on the Green Shore design
3. A coastal community stewardship program for building tenants, owners or site users.

See Strategies and Technologies for further detail on these options. The outreach and educational component should occur over a medium to long term basis (3 year minimum) and the size of the target audience for each element of the program should be stated. The applicant must be willing to publicly profile the project and design elements on the GREEN SHORES website.

Submittal

1. The applicable Letter Template signed by the party responsible for carrying out the proposed educational/outreach action.
2. Written/or multimedia documentation of the outreach and educational initiatives of the project which demonstrate GREEN SHORES design approaches. Provide a project description for profiling on the GREEN SHORES website using the GREEN SHORES project description template.



Strategies and Technologies

- Public signage on key shore issues, the project design concept and project performance.
- Tours and interpretive walks.
- An on-going coastal/community stewardship program for owners, occupants or site users, such as establishment of an on-going beach cleanup program, support for citizen science or research projects, etc.
- Permanent or evolving demonstration project.
- Information packages or workshops for future residents, as applicable.



DEFINITIONS

Accretion – The gradual accumulation of sediments by natural causes (wave and tidal processes) in the foreshore and along the shoreline. Accretion at any specific site may be episodic and broken by periods of erosion that are often associated with large storm events.

Beach Nourishment – A shore protection works in which sand or sediments lost by longshore drifts or erosion are replaced on a certain area of a beach. It involves the transportation of sand or other materials from other areas to the affected area. Beach nourishment can both protect upland from erosion and contribute to important coastal processes such as longshore drift. However many nourished beach must be maintained with the periodic addition of sediment as the sea will continue to erode it.

Bulkhead – Seawall designed to keep land behind it from eroding, generally constructed of concrete, wood or metal sheet wall.

Chart Datum – A horizontal plane below which the normal tide will seldom fall, defined in Canada as lowest normal tides and shown as the zero depth contour on hydrographic charts (see accompanying graphic at end of Definitions).

Coastal Banks or Bluffs – Steep coastal slopes formed of unconsolidated material (sand and gravels) which may conceal underlying rock formations, in contrast to a cliff where rock formations are exposed. Coastal banks are generally less than 5m in height and coastal bluffs greater than 5m in height.

Coastal Processes – Natural processes that shape the physical characteristics of shores
There are three key coastal processes:

1. **Waves** – Wind waves are the primary force in the coastal zone, creating most of the erosion, sediment transport and deposition that form beaches, sand spits, and other coastal shore features.
2. **Sediment Movement** – Sediment, where it is available on the coastal shore, is constantly moving with the waves and currents towards, away from, and along the coast.
3. **Water Levels** – Water levels on the coast vary according to the twice-daily tides, surges caused by storms, and, over longer periods of time, changes in western North American sea levels, due to climate change or other global events.

Compensation – Restoration, creation/replacement, and/or enhancement of coastal habitat undertaken expressly for the purpose of compensating for unavoidable habitat losses. On-site compensation refers to compensation activities completed within the development site; off-site compensation refers to such activities undertaken in an approved location outside the development site.

Contaminated Sites – A previously developed shoreline site (generally industrial) with contaminant levels in the upland soils that exceed regional, provincial or federal standards for residential/commercial development.



Contaminants – Harmful or undesirable substances in sediment, water or air that pollute the environment.

Critical or Sensitive Habitats

1. Areas providing important feeding, resting, spawning, nesting, rearing habitat for federal or provincially designated rare or endangered species.
2. Federal, provincial or regionally designated Environmentally Sensitive/Significant Areas.
3. Valued foreshore habitats including estuaries, marshes, lagoons, eelgrass beds, kelp beds, commercial/recreational/First Nation clam beds, tidal channels, important spawning and rearing areas for fish, seabirds and marine mammals.

Degraded Habitat – Where natural functioning habitat has been impacted by physical (placement of low valued material), chemical (contaminant) and biological (invasive species) means. Areas with a potential for greater ecological value given proper functioning conditions.

Development Footprint – The total land area of a project site covered by buildings, streets, parking areas, and other typically impermeable surfaces constructed as part of the project.

Erosion – A combination of processes in which materials of the earth's surface are loosened, dissolved or worn away, and transported from one place to another by natural agents.

Flood Construction Level – The Designated Flood Level plus the allowance for freeboard used to establish the elevation of the underside of a wooden 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, is be equal to or higher than the above described elevation (from BC Flood Hazard Area, Land Use Management Guidelines).

Foreshore – The area of the shore that lies between the high and low water levels that is flooded daily by the tide, also termed intertidal.

Filled Shore – A natural shore that has been altered by the addition of fill material such as sand, gravel or material of anthropogenic origin.

Geodetic Datum – A vertical control datum referenced to the height of a primary tidal bench mark and generally reflects mean sea level but may vary locally from the site specific mean sea level due to local tidal conditions. In British Columbia geodetic datum is 1.8-3.5m higher than hydrographic chart datum.

Green Field – Natural shoreline that has not been impacted by human activity, specifically by the removal of marine riparian vegetation or construction of shore protection structures such as bulkheads or groynes. It therefore possible for a previously developed *site* with an existing natural shore to be designated a green field shore.



Groyne – A wall built perpendicular to the shoreline, intended to trap sand and deflect waves away from the beach. Sediments being carried by longshore drift will accumulate on the forward edge of a groyne and erode on the opposite side of the structure.

Hardened Shore – A natural shore that has been altered by the addition of seawalls, riprap, sheet metal, concrete, rock or other ‘hard’ material or structure.

Higher High Water (HHW) – The higher of the two daily high tides for diurnal or semi-diurnal tides.

Higher High Water Large Tide (HHWLT) – The average of the highest high waters for each year of the 19 year prediction cycle referenced to Chart Datum. HHWLT for reference tidal stations are found in the Canadian Tide and Current Tables published by Canadian Hydrographic Service (see accompanying graphic at end of Definitions).

Intertidal – The area of the shore that lies between the high and low water levels that is flooded daily by the tide, also termed foreshore.

Invasive Species – A species that is non-native to the ecosystem under consideration and whose introduction is likely to cause economic or environmental harm (including harm to human health).

Impervious Surfaces – Surfaces that do not permit infiltration of water to sub-surface areas and promote runoff of precipitation volumes. The term is used typically to refer to human-made surfaces (e.g., roofs, sidewalks, roads, driveways, etc.) but may also be natural surfaces (e.g., exposed bedrock). The imperviousness or degree of runoff potential can be estimated for different surface materials.

Natural Boundary – The visible high water mark of any lake, river, stream or other water body where the action of water is so common and usual and so long continued as to mark on the soil a character distinct from that of its banks (*from the BC Land Act*). In coastal areas this is generally determined as the lower elevation of terrestrial vegetation (see accompanying graphic at end of Definitions).

Permanent Structure – Any building or structure lawfully constructed, placed or erected on a secure and long lasting foundation on land in accordance with any local government bylaw or approval condition in effect at the time of construction, placement or erection. From the BC Riparian Area Regulation: http://www.qp.gov.bc.ca/statreg/reg/F/FishProtect/376_2004.htm

Qualified Coastal Professional – An engineer, geoscientist or geotechnical engineer in good standing with his/her professional organization, acting within his/her abilities and with demonstrated experience and/or training pertaining to shore protection and coastal processes.



Qualified Environmental Professional – A professional habitat biologist, landscape architect, environmental land use planner or other suitably qualified professional in good standing with his/her professional organization, acting within his/her professional abilities with expertise in marine coastal ecology and habitat function.

Restoration (habitat) – Restoration is the process of repairing damage to the diversity and dynamics of ecosystems. Ecological restoration is the process of returning an ecosystem as closely as possible to pre-disturbance conditions and functions. Implicit in this definition is that ecosystems are naturally dynamic; it is therefore not possible to recreate a system exactly. The restoration process re-establishes the general structure, function, and dynamic but self-sustaining behavior of the ecosystem. While restoration aims to return an ecosystem to a former natural condition, rehabilitation (see below) implies putting the landscape to a new or altered use that supports the natural ecosystem mosaic. Willamette Restoration Initiatives, 1999

Rehabilitation (habitat) – Rehabilitation is intended to make the land useful again after a disturbance. It involves the recovery of ecosystem functions, processes and productivity in a degraded habitat. Rehabilitation does not necessarily re-establish the pre-disturbance condition, but does involve establishing geological and hydrologically stable landscapes that support the natural ecosystem mosaic. Adapted from Willamette Restoration Initiatives, 1999

Riparian Area or Zone – The area of transition that links marine aquatic and terrestrial ecosystems, and includes existing and potential marine riparian vegetation (defined below). The riparian area provides habitat for coastal species, organic input to the nearshore environment, a buffer for adjacent upland from coastal erosional processes, and retention of stormwater runoff (see accompanying graphic at end of Definitions).

Riparian Vegetation – Trees, shrubs and grasses specifically adapting to the coastal riparian environment. In general these are species native to the site area, however may also include suitably adapted non-native (but non-invasive) plant species.

Riprap – Broken (fractured) rock, cobbles, or boulders placed on earthen surfaces, such as the face of a dam or the bank of a stream, for protection against action of water (waves).

Sedimentation – Soil particles suspended in water that settle on stream, lake or sea beds.

Setback – The minimum distance requirement set by a government authority for location of a structure in relation to water bodies, wells, septic fields or other structures.

Shores or Shore Zone – The area of the coast extending from the upper boundary of the riparian area (5-30m landward of the natural boundary) through the intertidal zone to chart datum elevation (see accompanying graphic).

Shore Length – Length of the shore zone as measured along the natural boundary.

Shore Protection Works – A modification to the shoreline for the purpose of protection against erosion.

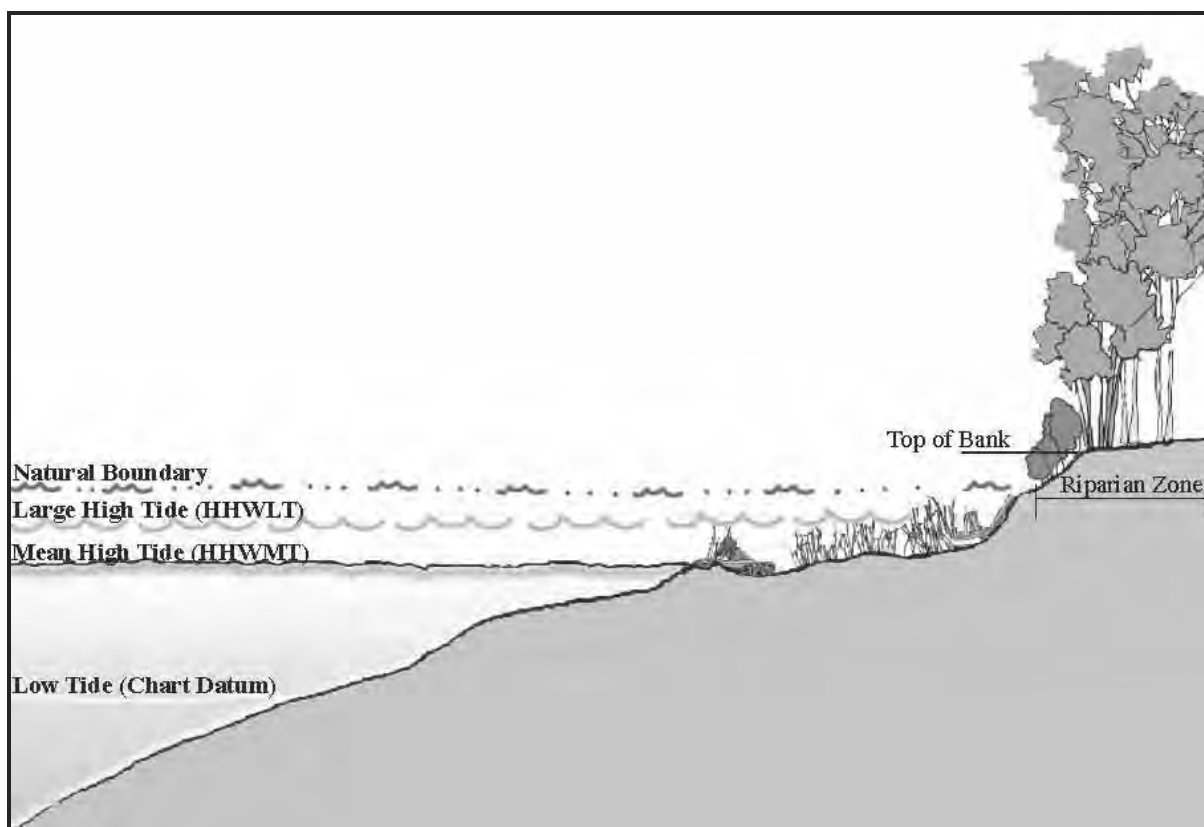


Stormwater Runoff – Precipitation that does not soak into the ground or evaporate, but flows along the surface of the ground as runoff.

Top of Bank – The point closest to the natural boundary of the shore where a break in the slope of the land occurs such that the grade landward of the break is flatter than 3:1 for a minimum distance of 15 meters, as measured perpendicularly from the break. *From the BC riparian area regulation* http://www.qp.gov.bc.ca/statreg/reg/F/FishProtect/376_2004.htm (see accompanying graphic at end of Definitions).

Upland – The area of the development property above the vertical elevation of the natural boundary.

Important Boundary Features in the Shore Environment





ADVISORY COMMITTEE, PEER REVIEW WORKGROUP AND PILOT PROGRAM ASSESSORS

Green Shores Advisory Committee

Erik Lees	Lees and Associates Landscape Architects
Scott Northrup	Fisheries and Oceans Canada
Alex Zimmerman	Applied Green Consulting, Canada Green Building Council
Michelle Gaudrey	Fraser River Estuary Management Program
Barron Carswell	British Columbia Ministry of Environment, Ocean and Marine Fisheries Branch
Mike Rogozinski	Real Estate Foundation of British Columbia
Doug Myers	Puget Sound Action Team
Barry Janyk	Mayor of Gibsons, British Columbia
Deborah Conner	Georgia Strait Alliance
Chris Jackson	Islands Trust

Rating Credit Peer Review Workgroup

Jim Mitchell	Coastal Engineer
Michael Tarbotton	Triton Consultants Ltd.
Gary Williams	G.L. Williams and Associates
David Reid	HB Lanarc Consultants
Scott Murdoch	Murdoch Landscape and Design Ltd.
Don Howes	DA Howes and Associates
Peter Hardcastle	Hillel Architecture
Catherine Berris	Catherine Berris and Associates
Patrick Lucey	Aqua-Scientific Consulting Ltd.
Lindsay Jones	Integrated Land Management Branch

Pilot Program Assessors

Rob Russell	Habitat Biologist
Pat Harrison	Landscape Architect
Cara MacDonald	Landscape Architect
Sarah Bonar	Chatwin Engineering
Susan Davidson	SeaScience
Rowland Atkins	Golder Associates
Berly Allen	Cypress Creek Design
Jim Mitchell	Coastal Engineer
Gina Lemieux	Archipelago Marine Research Ltd.
Brendan Holden	Engineer
Scott Murdoch	Murdoch deGreef Inc.
Jodi Harney	Coastal Geologist
Kathey Dunster	Unfolding Landscapes



TECHNICAL WORKING GROUP

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Lanarc Consultants

Gretchen Harlow

Canadian Wildlife Service

MAJOR FUNDING PARTNERS

BC Ministry of Environment –
Oceans and Marine Fisheries Branch

Real Estate Foundation of BC

Environment Canada

BC Hydro –
Bridge Coastal Legacy Fund



Ministry of
Environment



THE REAL ESTATE
FOUNDATION
OF BRITISH COLUMBIA



Environnement
Canada

Environnement
Canada



GREEN SHORES PROJECT

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SCHEDULE N
RENTAL POOL COVENANT
TERMS OF INSTRUMENT – PART 2
RENTAL POOL COVENANT

THIS COVENANT dated for reference the__ day of _____, 20__ .

BETWEEN:

0983016 B.C. LTD., a British Columbia corporation having an office at
401 - 37989 Cleveland Avenue, P.O. Box 1068, Squamish, British Columbia, V8B 0A7

(the "Owner")

AND:

DISTRICT OF SQUAMISH, a municipal corporation, having offices at
37955 2nd Avenue, Squamish, B.C., V8B 0A3

(the "Municipality")

GIVEN THAT:

A. The Owner is the registered owner in fee simple of that land in Squamish, in the Province of British Columbia, described as:

[Insert legal descriptions of Precincts 1, 2 and 9 following the Precinct Subdivision]

(the "Land")

B. Section 219 of the *Land Title Act* authorizes the granting to a municipality of a covenant of a negative or positive nature in respect of the use of land, the use of a building on or to be erected on land, that land is or is not to be built on except in accordance with the covenant, and that land is not to be subdivided except in accordance with the covenant;

C. This Covenant is granted to the Municipality to ensure that any tourist accommodation on the Land be used and be available for use in a manner which will protect the interests of persons and property in Squamish and protect the reputation of Squamish as a tourist destination;

NOW THEREFORE THIS AGREEMENT WITNESSES THAT pursuant to section 219 of the *Land Title Act*, R.S.B.C. 1996, c. 250 and in consideration of the premises and the sum of One (\$1.00) Dollar, now paid by the Municipality to the Owner (the receipt and sufficiency whereof is hereby acknowledged), the Owner covenants and agrees with the Municipality as follows:

Definitions

1. In this Covenant:
 - 1.1 "Public" means all persons other than the Suite Owner;
 - 1.2 "Registered Owner" means the person registered in the register of the Land Title Office as owner in fee simple of the Suite;
 - 1.3 "Suite" means a self-contained habitable space within any form of building on the Land, or the Land as subdivided, designed or capable of use for Tourist Accommodation;
 - 1.4 "Suite Owner" shall mean the Registered Owner of a Suite and the spouse, children and parents of such Registered Owner and the parents and children of the Registered Owner's spouse; and where there is more than one Registered Owner of a Suite, all the Registered Owners and their spouses, children, parents and the parents of their spouses shall together constitute the "Suite Owner" for that Suite and, where the Registered Owner is a corporation or corporations, all directors, officers, shareholders and employees and the spouses, children, parents and parents of spouses of each of them shall together with the corporation or corporations constitute the "Suite Owner" for that Suite;
 - 1.5 "Tourist Accommodation" means use of a Suite for commercial rental to the public for the seasonal or temporary transient accommodation of not more than four tourists, visitors and travelers.
 - 1.6 "Tourist Accommodation Booking System" means a management system or arrangement to provide for the orderly and assured management of reservations and use of Suites by the Public and by the Suite Owner; and
 - 1.7 "Used" includes the purpose to which a Suite is put, and includes to reside, sleep, inhabit or otherwise occupy.

Tourist Accommodation

2. A Suite may only be used or made available for Tourist Accommodation if a Tourist Accommodation Booking System acceptable to the Municipality is in place.

Acceptance of Hotel Booking System

3. The Municipality will accept a Tourist Accommodation Booking System which is operated by a large hotel chain, or which is self-administered by the Registered Owners in a similar manner to that of a large hotel chain, including for example by way of an internet booking system. The Registered Owners shall permit the Municipality, from time to time at its request, to view all necessary records to determine if the Tourist Accommodation Booking System is operating in a manner consistent with this Covenant.

Land To Be Used In Accordance With Covenant

4. A Suite may only be used for Tourist Accommodation if

- (a) part of the building containing the Suite has a lobby area off the main entrance to the building, or
- (b) in the case of a Suite that is part of a complex of several buildings on the Land, there is a lobby area common to all buildings,

and in either case there is a check-in facility in the lobby.

Remedies Not Exclusive

- 5. No reference to or exercise of any specific right or remedy by the Municipality in enforcing the restrictions, terms and conditions of this Covenant shall preclude, prejudice or limit the Municipality from exercising any other remedy at law or in equity not expressly provided for herein.

No Exemption From Jurisdiction

- 6. Nothing in this Covenant shall exempt the Owner or the Land from any statutory requirement or imposition or from the ordinary jurisdiction of the Council of the Municipality, its bylaws, permits, regulations and orders.

Approvals

- 7. Wherever in this Covenant the approval or consent of the Municipality is required, or some act or thing is to be done to the satisfaction of the Municipality:
 - 7.1 such consent or approval may be given by an officer of the Municipality designated in writing by the Municipality for such purpose (the "Nominee");
 - 7.2 such provisions shall not be deemed to have been fulfilled or waived unless the approval, consent or expression of satisfaction is in writing and no prior approval, consent or expression of satisfaction and no condoning, excusing or overlooking by the Municipality or the Nominee on previous occasions when such approval, consent or satisfaction was required shall be taken to operate as a waiver of the necessity for such approval or satisfaction wherever required by this Covenant; and
 - 7.3 such approval may be given on the terms and conditions within the parameters of sections 3 and 4 hereof .

No Derogation

- 8. Nothing contained or implied herein shall impair, limit or affect the Municipality's rights and powers in the exercise of its functions pursuant to the *Local Government Act* or any other enactment, and all such powers and rights may be fully exercised in relation to the Land as if this Covenant had not been granted by the Owner, subject to any applicable Phased Development Agreement.

Priority

9. The Owner shall after execution hereof by it do or cause to be done all acts reasonably necessary to grant priority to this Covenant over all charges and encumbrances which may have been registered against title to the Land in the Land Title Office save and except those as have been approved by the Municipality or which have been granted to the Municipality.

Further Acts

10. The Owner shall do and cause to be done all things and shall execute and cause to be executed all plans, documents and other instruments which may be necessary to give proper effect to the intention of this Covenant.

Discharge

11. The Owner acknowledges that it is not in the public interest for this Covenant to be discharged from the Land.

Indemnity

12. The Owner covenants to and does hereby indemnify and save harmless the Municipality, its elected and appointed officials, officers, employees, contractors and agents at all times from all loss, damages, actions, suits, claims, demands, costs, expenses, fines and liabilities of any nature whatsoever by whomsoever brought, made or suffered for which the Municipality shall or may become liable, incur or suffer by reason of any injury to person (including death) or loss or damage to property or economic loss:
 - 12.1 arising directly or indirectly from a breach or non-performance of this Covenant by the Owner, its officers, employees, agents, contractors, licensees, invitees and others of the Owner;
 - 12.2 arising directly or indirectly from the exercise by the Owner of any rights to use and build on the Land pursuant to this Covenant or in the fulfilling of its obligations pursuant to this Covenant;
 - 12.3 arising directly or indirectly from any intentional act, or from any omission, default or negligence of the Owner, its officers, employees, agents, contractors, or invitees in the use of and building on the Land.

Performance at Cost of Owner

13. Unless otherwise expressly provided in this Covenant, wherever the Owner requests that something be done (except a request for consent or approval) or is obliged or required to do or cause to be done any act, matter or thing, such act, matter or thing shall be done by the Owner at its sole expense.

Entire Agreement

14. This Covenant is the entire agreement between the parties and the Municipality has made no representations, warranties, guarantees, promises, covenants or agreements to or with the Owner other than those expressed in writing in this Covenant.

Amendment

15. No amendment to this Covenant is valid unless in writing and executed by the parties.

Interpretation

16. In this Covenant:
- 16.1 wherever the singular or masculine is used the same shall be construed as meaning the plural or the feminine or the body corporate or politic where the context or the parties hereto so require;
 - 16.2 every reference to a party is deemed to include heirs, executors, administrators, successors, assigns, officers and employees of such parties wherever the context so requires or allows; and
 - 16.3 the headings are inserted for reference and convenience only and must not be used to construe or interpret the provisions hereof.

Severance

17. All provisions of this Covenant are to be construed as covenants and should any section or lesser portion of this Covenant be held invalid or unenforceable by a court of competent jurisdiction, the said portion shall be severed and the invalidity or unenforceability of such section or portion shall not affect the validity of the remainder which shall remain binding on the Owner and shall charge the Land and be enforceable to the fullest extent of the law.

Time

18. Time is of the essence of this Covenant.

Interest in Land

19. This Covenant shall charge the Land pursuant to Section 219 of the *Land Title Act* and the burden of all the covenants herein shall run with the Land and charge the Land and every part into which the Land may be divided or subdivided.

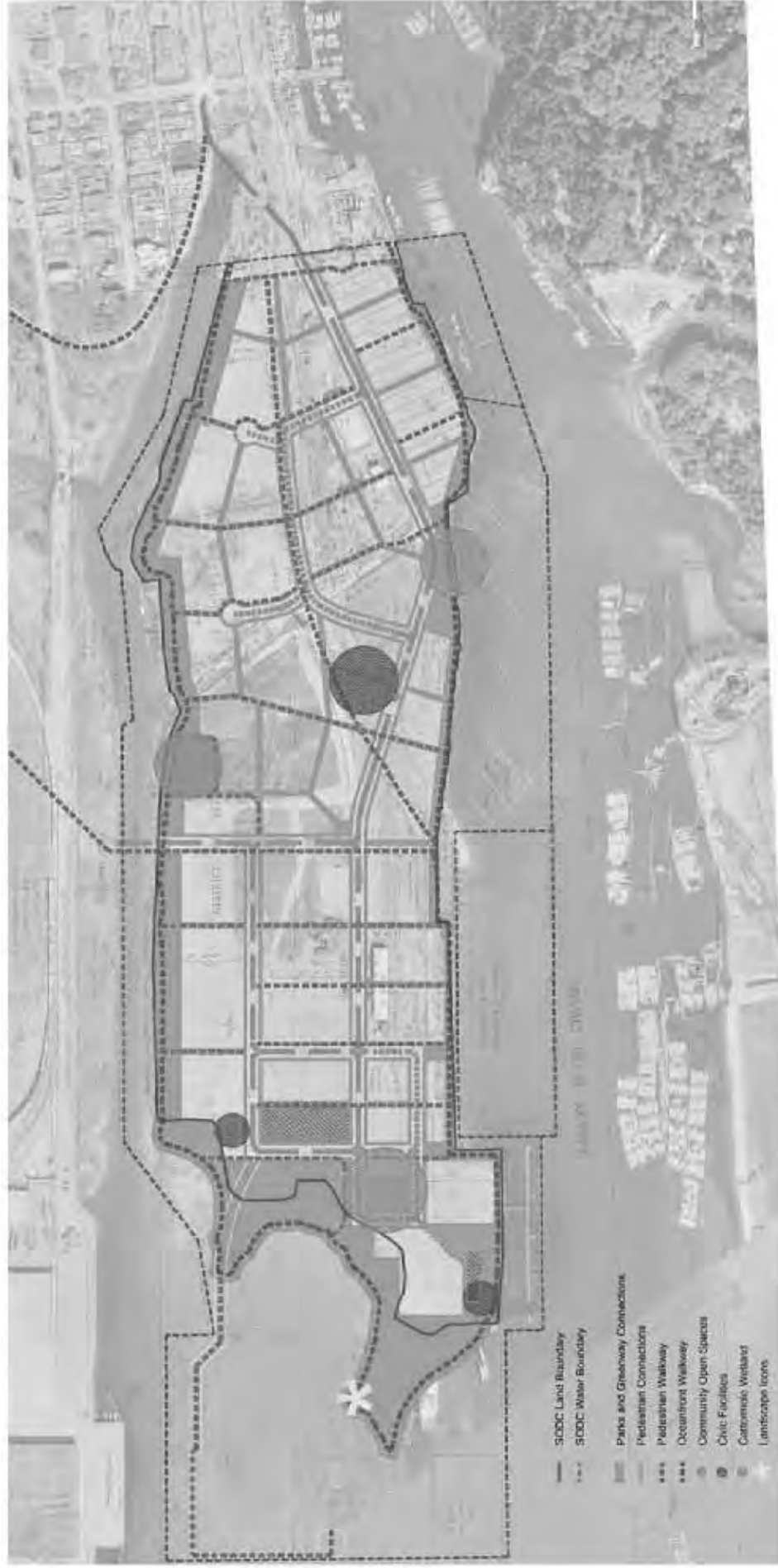
Enurement

20. This Covenant shall enure to the benefit of and be binding upon the parties hereto.

Execution

21. As evidence of their agreement to be bound by the above terms the parties each have executed and delivered this Covenant under seal by executing Part 1 of the *Land Title Act* Form C to which this Covenant is attached and which forms part of this Covenant.

SCHEDULE "O" – AREA PLAN SCHEDULE H



PARKS, PUBLIC SPACES & COMMUNITY FACILITIES

SCHEDULE H