

## DISTRICT OF 100 MILE HOUSE

### BYLAW NO. 1257

#### **A bylaw to regulate and require the provision of works and services in connection with the subdivision and development of land**

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The Council of the District of 100 Mile House, in open meeting assembled, enacts as follows:

1. In this bylaw,

“Approving Officer” means the person appointed to that position under the *Land Title Act*.

“Building Inspector” means a person appointed as a building inspector as defined in Building Bylaw No. 695.

“Consulting Engineer” means a professional engineer engaged by a Developer to design, oversee the construction of and certify the completion of works and services required by this bylaw, prepare as-constructed drawings of works and services or prepare preliminary servicing information.

“Developer” means, as the context requires, the owner of land in respect of which a subdivision application or building permit application has been made.

“Director” means the person appointed to the position of Director of Engineering and Community Services by the Council.

“MMCD” means the Municipal Infrastructure Design Guideline Manual and the Master Municipal Specifications and Standard Detail Drawings in Volume II of the Platinum Edition of the Master Municipal Construction Documents published by the Master Municipal Construction Documents Association, and includes:

- (a) the definitions of such terms used in the Master Municipal Specifications and Standard Detail Drawings as are set out in the General Conditions in Volume II; and
- (b) all documents supplemental to the Master Municipal Specifications, the Standard Detail Drawings and the relevant definitions set out in the General Conditions that are issued from time to time by the Association,

but excludes all references to measurement and payment in the Master Municipal Specifications.

“Security” means cash or a clean, unconditional, irrevocable and automatically renewing letter of credit drawn on a chartered bank or credit union having a branch in the District at which demand may be made on the letter of credit.

2. No person shall subdivide land in the District unless the works and services required by this bylaw have been provided by the Developer to the satisfaction of the Director, or the Developer has entered into an agreement with the District to construct and install the required works and services by a date specified in the agreement, and provided to the District Security in the amount determined by the Director, having regard to the cost of installing and paying for the works and services and including 15% in respect of contingencies.
3. Section 2 does not apply:
  - (a) to a subdivision whose sole purpose is to dedicate land for a highway or public park or to create a parcel to be used for utility purposes only; or
  - (b) in relation to works and services of any type, in cases where the Director determines that the need for the works or services is not directly attributable to the subdivision, or to buildings likely to be constructed in the subdivision.
4. No person shall construct a building or structure in the District for which a building permit is required unless the works and services required by this bylaw have been provided by the Developer to the satisfaction of the Director, or the Developer has entered into an agreement with the District to construct and install the required works and services by a date specified in the agreement, and provided to the District Security in the amount determined by the Director, having regard to the cost of installing and paying for the works and services and including 15% in respect of contingencies.
5. Section 4 does not apply in relation to works and services of any type, in cases where the Director determines that the need for the works or services is not directly attributable to the building for which a building permit application has been made.
6. The Director may:

(a) from time to time, prescribe the form of agreement referred to in sections 2 and 4, provided that each such agreement shall require the Developer to:

- i. maintain the works and services for a period of at least one year following the completion of construction, and to repair and make good all defects and deficiencies appearing in the works and services during that period;
- ii. provide to the District throughout the one-year period performance Security in the amount determined by the Director, which amount may not exceed 10 percent of the amount provided in relation to the construction of the works and services;
- iii. provide to the District as-constructed drawings of the works and services in a form specified by the Director;
- iv. carry third party liability insurance in an amount and form acceptable to the District's Director of Finance, in respect of claims arising out of death, personal injury or damage arising from the construction of the works and services; and
- v. indemnify the District and save it harmless in respect of all costs and expenses it may incur as a result of faulty workmanship or defective material in the works and services in respect of which the District has provided notice to the Developer prior to the District's final acceptance of the works and services;

(b) execute and deliver such agreements on behalf of the District, and

(c) require that such agreements be drafted in a form that is registrable under s. 219 of the *Land Title Act* against title to the land being subdivided or built upon.

7. The works and services required by this bylaw are the following:

(a) highways and lanes, boulevards including street trees and other landscaping, boulevard crossings, culverts, transit bays, sidewalks, walkways, highway and walkway bridges, curbs and gutters, traffic signs and signals, street lighting and conduit and vaults for underground wiring, all in accordance with Sections 1.0 and 2.0 of Schedule B, and the District's official community plan shall be used in applying the road classifications in Table 1 of Schedule B and the

District's zoning bylaw shall be used in applying the roadway construction requirements in Table 2 of Schedule B;

(b) water distribution systems connected to the District's water distribution system including, without limitation, fire hydrant systems, valves and valve chambers, meters and meter chambers, pump stations and reservoirs, all in accordance with Schedule A and Sections 1.0 and 5.0 of Schedule B;

(c) sewage collection systems connected to the District's sewage collection system including, without limitation, lift stations, manholes and sewage holding facilities, all in accordance with Schedule A and Sections 1.0 and 3.0 of Schedule B, except where the District has approved on-site sewage disposal in accordance with Schedules A and C; and

(d) drainage collection systems connected to the District's drainage collection system including, without limitation, enclosed storm sewers, catch basins, manholes, ditches, gates, stormwater retention and detention facilities, and environmental control facilities, all in accordance with Schedule A and Sections 1.0 and 4.0 of Schedule B.

8. The works and services described in section 7 must, in all cases, be provided on that portion of any highway or lane immediately adjacent to the parcel that is the subject of the subdivision or building permit application, as the case may be, unless additional requirements are imposed under section 16.
9. The works and services required by sections 2 and 4 and under section 16 must be designed, constructed and installed at the cost of the Developer to the standards set out in the MMCD as varied or supplemented by Schedule B, except to the extent that such standards may have been varied by development variance permit or board of variance order.
10. If works and services of the type described in section 7 are already in existence on or in the highway or lane adjacent to a parcel being subdivided or on which a building is proposed to be constructed, and the works and services do not comply with the standards specified in section 9, the Developer must alter the works and services so that they comply with the standards unless an exemption is provided under section 1.4 of Schedule B, and the provisions of sections 2 and 4 regarding agreements and Security apply to the alterations.
11. The Director may require a Developer to pay to the District, in lieu of constructing or altering works and services required by this bylaw, cash in

the amount determined by the Director to be the cost of constructing or altering the works and services as of the time of approval of the subdivision or issuance of the building permit, if the Director determines on the basis of sound civil engineering practice or cost considerations that the works should be constructed or altered at a later time or concurrently with the construction or alteration of works and services serving adjacent or nearby parcels of land, and in such cases the District shall deposit the funds into a reserve fund established for the construction or alteration of the works and services.

12. The works and services required by this bylaw shall be provided in dedicated highways, unless the Director has approved the location of the works and services in a statutory right of way granted to the District, in which case the statutory right of way, including any required plan of right of way, must be prepared at the cost of the Developer, in terms satisfactory to the Director and the District Solicitor, and deposited concurrently with the deposit of the subdivision plan in the case of a subdivision application and prior to the issuance of an occupancy permit in the case of a building permit application.
13. No person shall commence the construction or installation of works or services required by this bylaw until the Director has approved the design and specifications for the works and services, which shall be prepared at the Developer's cost by a Consulting Engineer in accordance with the MMCD and this bylaw and submitted to the Director in such form as the Director may require.
14. The Director may require a Developer making a preliminary application for subdivision to provide to the Approving Officer such information, prepared by a Consulting Engineer, as the Approving Officer may require, to establish whether the proposed subdivision can comply with this bylaw.
15. The Director may approve the designs and specifications for and the installation of works and services constructed on a Developer's land without the prior approval of the Director, if the Director is satisfied that the design and construction fully comply with this bylaw, and for that purpose the Director may require the Developer to:
  - (a) remove, uncover or re-construct at the Developer's cost such portions of the works and services as the Director may specify;
  - (b) engage a Consulting Engineer at the Developer's cost to inspect the works and services, conduct tests and investigations, certify to the Director that the works and services comply with this bylaw and prepare as-constructed drawings; and

- (c) enter into an agreement with the District dealing with the matters specified in section 6(a)(i) and (ii) of this bylaw.

16. The Council delegates to the Director the powers of the Council under the *Local Government Act* to:

- (a) require a Developer to construct excess or extended services as defined in section 939 of the Act;
- (b) determine whether the cost to the District to provide the excess or extended services would be excessive and, in that event, that the cost must be paid by the Developer;
- (c) determine the benefit of the excess or extended service that may be attributed to each of the parcels of land that will be served by the services; and
- (d) impose latecomer charges under section 939 of the Act including interest at the rate of 7 percent.

17. For the purpose of section 16, the Director may execute and deliver on behalf of the District agreements with Developers regarding the collection and remittance of latecomer charges, which agreements may be combined with works and services agreements as referred to in sections 2 and 4.

18. The Council delegates to the Approving Officer the authority to:

- (a) vary the minimum highway frontage for subdivision under s. 944 of the *Local Government Act*; and
- (b) deal with applications for conversion to strata title under s. 242 of the *Strata Property Act* .

19. The Approving Officer, Building Inspector and Director are authorized to enter on property and premises within the District to ascertain whether the requirements of this bylaw are being met.

20. The provisions of this bylaw are applicable only to applications received after the date this bylaw is adopted.

21. Subdivision and Development Servicing Bylaw 515, 1990 is repealed.

22. This bylaw may be cited as “Works and Services Bylaw No. 1257”.

READ A FIRST TIME this 13th day of May, 2014.

READ A SECOND TIME this 13<sup>th</sup> day of May,2014.

READ A THIRD TIME this 13<sup>th</sup> day of May,2014.

ADOPTED this 22<sup>nd</sup> day of July ,2014.

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Mayor

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Corporate Administrator

**Schedule A: SERVICE LEVELS**

The *District* requires provision of different categories of *works* or *services* subject to the given *zoning* of the land being *subdivided* or *developed* in conformance with the following table of minimal service levels:

<b>ZONING</b> * of subject land	<b>Watermain</b>	<b>Sanitary sewer</b>	<b>Septic</b>	<b>Storm Sewer</b>	<b>Open Ditch</b>	<b>Underground Wiring</b>	<b>Overhead Wiring</b>	<b>Ornamental Street Lighting</b>	<b>Pole Mount Street Lighting</b>
<b>R1 R2 R3 R4 R5 R6</b>	Yes	Yes	ALT	Yes		Yes		Yes	
<b>ER1 ER2</b>	Yes	Yes			Yes	Yes		ALT	Yes
<b>A1 A2 A3</b>	ALT	ALT	ALT		Yes		Yes		Yes
<b>I-1 I2 I3 I4</b>	ALT	ALT	ALT		Yes		Yes		ALT
<b>P1 P2 P3 P4</b>	Yes	Yes		Yes		Yes		Yes	
<b>C1 C2 C3 C4 C7 C8</b>	Yes	Yes		Yes		Yes		Yes	
<b>C6</b>	Yes	Yes	ALT	Yes	Alt	Yes	ALT	Yes	Yes

**Notes**

**Yes:** indicates that this is a required *work* and *service*.

**Alt:** indicates that this is an alternate service level that may be acceptable to the *District* subject to site particulars.

**\*Zoning:** refers to *zone* abbreviations as set out in the District of 100 Mile House Zoning Bylaw No. 801, 1999



**WORKS AND SERVICES**

**BYLAW NO. 1257, 2013**

**SCHEDULE B**

**SUPPLEMENTARY CONDITIONS &**

**MMCD VARIATIONS**

## SCHEDULE B: SUPPLEMENTARY CONDITIONS & MMCD VARIATIONS

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## **1.0 GENERAL PROVISIONS**

### **1.1 Service Connections**

Each *subdivision* or *development* shall have a water, storm, and sanitary sewer service connection to *District utilities* in conformance with Drawing S1 of Schedule B.

### **1.2 Highways**

Each *highway* shall be designed to the applicable service level standard under Table 1 of Schedule B unless expressly varied by the *Director* or by Development Variance Permit.

### **1.3 Underground Utilities**

Power, cable, and telecommunications shall be underground except as exempted by the *Director*, under 1.4 below, or by Development Variance Permit.

### **1.4 Service Level Exemptions**

Notwithstanding the requirements for *works* and *services* in this bylaw, the *Director* may relax requirements for underground power and telecommunication; provision of ornamental street lighting, as well as the construction of sidewalk, curb, and gutter, and allow *subdivision* or *development* of land fronting an existing *highway* complete with all *works* and *services* to a level of service equal to the nearest occupied and *developed lot* provided that:

- a) future *subdivision* or *development* potential of the *subject land* which would be served by the continuation of the *works* and *services*, serves four or less *lots*;
- b) total *development* area is incapable of future expansion by reasons of topography, adjacent *development*, or other reasons as determined by the *Approving Officer*; and
- c) minimum 8.5 metres width of asphaltic concrete is provided for all new required *roadways* or a minimum six metres width where existing *works* and *services* already serve both the existing *lots* and the *subject land*.

**1.5** For the purposes of 1.4 above, where a proposed *subdivision* or *development* is located in equal proximity to two or more differing levels of work and services, the highest level of service of the nearest *developed lot* shall prevail as the minimum level of service for the *subject land*.

### **1.6 Connection to *District* Mains**

MMCD s. 02721 – 3.8, 02731 – 3.8, 02666 – 3.23, and 02732 – 3.16 are deleted and replaced with the following:

Prior to or at commencement of construction, the *Developer* and/or *Contractor* must confirm the existing line and elevation of all *District* mains at the points of *connection*.

Any discrepancy between the design drawings and site conditions shall be reported to the *District* immediately and work shall cease pending instructions from the *District*.

## 2.0 HIGHWAYS

### 2.1 Highway Cross Section Requirements

The minimum standard of *highway* development is as set out in Table 5.1, MMCD, and as illustrated by Drawings inclusive attached at the end of Schedule B.

**Table 1**  
**Minimum Standard Highway Cross Section Requirements**

Road Classification	Right-of-Way Width (m)	Pavement Width Curb-to-Curb Including Median (m)	Curb Type	No. of Sidewalks	Parking
<b>ARTERIAL</b>					
Divided-4 lane	28	20	Barrier	2	N/A
Divided – 6 lane	35	27	Barrier	2	N/A
Undivided – 4 lane	25	15	Barrier	2	N/A
Rural	20	7.3 + shoulders	N/A	N/A	N/A
<b>COLLECTOR</b>					
Commercial and Industrial	25	15	Barrier	2	Both Sides
Minor Collector	20	12	Barrier	2	Off-Peak
Multi-Family Residential	22	12.2	Barrier	2	Both Sides
Single Family Residential					
Urban	20	11	Barrier	2	Both Sides
Rural	20	7.3 + shoulders	N/A	N/A	One Side N/A
<b>LOCAL</b>					
Commercial	20	11	Barrier	2	Both Sides
Industrial	20	11	Barrier	N/A	Sides
Multi-Family	20	11	Barrier	2	N/A
Single Family					
Urban	16	8.5	Rollover	1	Both Sides
Rural	16	7.3 +Shoulders	N/A	N/A	Both Sides N/A
<b>LANE</b>	6	5.2	Rollover	N/A	N/A
<b>WALKWAY AND BIKE PATH</b>	3	2.5	N/A	N/A	N/A

**2.2 Cul-de-Sacs**

2.2.1 MMCD s. 5.8 Design Guideline Manual is deleted and replaced with the following:  
 No cul-de-sac in any urban area shall exceed a length of 200 metres measured from the beginning of the turnaround to the right-of-way line of the nearest intersecting *highway* having more than one access. If an emergency access is provided, the maximum length of any cul-de-sac shall not exceed 280 metres.

2.2.2 The following minimum radii shall apply to cul-de-sac turnarounds:

Road	Paved Radius	ROW Radius
Residential	11.0	15.5
Commercial	14.0	17.0
Industrial	15.0	18.5

2.2.3 A sidewalk shall be required along one side of the cul-de-sac. The sidewalk must be extended to connect to a walkway or emergency access to other roads where applicable.

2.2.4 The design of a cul-de-sac is not strictly limited to the standards under 2.2 and as per Drawing H6 attached to this Schedule; the *Consulting Engineer* may propose an alternative design subject to review and approval by the *Director*.

**2.3 Roadway Construction Requirements**

2.3.1 MMCD s. 5.16.5 Design Guideline Manual is deleted and replaced with the following:  
 The minimum pavement structure for asphaltic concrete (AC) pavement shall be as per Table 2 below:

**TABLE 2: Minimum Roadway Construction Requirements**

CLASSIFICATION	MINIMUM THICKNESS
<b>Local – R Zones</b>	75 mm asphalt surface course
<b>A Zones</b>	75mm base course
<b>ER Zones</b>	400mm sub-base
<b>Local – P Zones</b>	35mm asphalt surface course
<b>I Zones</b>	40mm asphalt lower course
<b>C Zones</b>	100mm base course
	400mm sub-base

<b>Collector</b>	35mm asphalt surface course 40mm asphalt lower course 100mm base course 450mm sub-base
<b>Arterial</b>	40mm asphalt surface course 60mm asphalt lower course 100mm base course 450mm sub-base

### 2.3.2 Asphalt Tie-in and Rehabilitation Requirements

The *Consulting Engineer* shall submit for approval by the *Director*, a plan defining and illustrating the proposed cutting and tie in of new *highways* to the existing asphalt and road system, including any asphalt rehabilitation.

Where asphalt cutting is required for new or replaced service *connections*, the *Director* shall determine the level of rehabilitation and extent of asphalt overlay.

## 2.4 *Half Road Requirements*

2.4.1 Director may permit the dedication and construction of half roads as per Drawing H5 to provide access to new lots created by a plan of subdivision subject to the following conditions:

- a) the *highway* dedication is adequately wide and in no case, less than 10 metres wide;
- b) the road and utility alignments do not require significant deviation from the standard and adjacent alignments;
- c) the remainder of the *highway* can reasonably be expected to be dedicated constructed in an acceptable timeframe;
- d) if required, the property owner of the opposite *half road* cooperates via a temporary easement or permanent highway dedication adequate to enable the construction of the *works* and *services*;
- e) all underground *works* and *services* are extended to the opposite side of the *half road* at sole cost of the *Developer* such that servicing of the opposite *half road* does not require cutting and trenching in future;
- f) there is sufficient road width to provide for safe two-way traffic; and
- g) all other required *works* and *services* are provided.

2.4.2 Any negotiations with the property owner of the opposite *half road* shall be the sole responsibility of the *Developer*.

## 2.5 Emergency Access

- 2.5.1 The emergency access required under section 2.1 shall connect from the cul-de-sac to an adjacent *highway* as per design shown on Drawing H7 attached to Schedule B.
- 2.5.2 MMCD s. 5.0 Design Guideline Manual is supplemented with the following:  
Emergency access must support a minimum wheel axle bearing load of 9.1 tonnes with a concrete or asphalt travel surface; chain link fencing on both sides; bicycle baffle or removable restriction post at each end, as per Drawing H7.
- 2.5.3 Emergency access design, surfacing, and provision for fencing are at the discretion of the *Director*; however, vehicular restriction devices must be provided as required to control non-emergency vehicles.

## 2.6 Curb Returns

MMCD s. 5.5.2 design guideline manual is deleted and replaced with the following:  
Minimum curb return radii shall be:

	<b>Local</b>	<b>Collector</b>
Arterial	9.0 m	9.0 m
Collector	7.5 m	7.5 m
Local	6.0 m	7.5 m

## 2.7 Sidewalks

MMCDA 5.10 Minimum sidewalk width of 1.5 m is replaced with Minimum sidewalk width of 2.0 m.

## 2.8 Driveways

Supplemental to *MMCD* s. 5.13 Design Guideline Manual for driveways the following shall apply:

- a) no more than one driveway access to maximum six metres width shall be permitted for all Residential zoned parcels where the land use comprises of single family dwellings; a second driveway on a corner lot may be allowed at the discretion of the *Director*;
- b) no more than two driveway accesses of maximum six metres width each shall be permitted for parcels where the land use comprises of side by side duplex dwellings;
- c) the location, extent, and number of driveways for commercial, multi-family, civic, rural, and institutional zones shall be at the discretion of the *Director* or as per Development Permit or Development Variance Permit as approved by *Council*; and



- d) residential driveway access serving corner *lots* shall be a minimum of 15 metres from the curb or edge of *roadway*, or as determined by the *Director* where curb offsets do not meet this bylaw.

## 2.9 Concrete Inspection and Testing

MMCD s. 03300 – 1.6 and 02523 – 1.5 are supplemented with the following:

The *Developer* may be required to undertake concrete testing to ensure that it meets specifications as follows:

- a) Strength Tests: The concrete supplier to maintain strength test monitoring on the mix being supplied in accord with CSA CAN3 – A23.1, Sections 17.2.1, 17.4, 17.5 and 17.6. Results MUST be immediately provided to the *District*;
- b) Slump Tests: A minimum of two slump tests will be taken daily and a slump test will be taken with each mix proportion or strength test sampling. The test method will be as specified in CSA CAN3 – A23.2-5C;
- c) Air Content: A minimum of two tests of air content will be taken daily and air content will be taken with each mix proportion on strength test sampling. The test method will be as specified in CSA CAN3 – A23.2 – 4C;
- d) Mix Proportions – The mix proportions submitted by the supplier will be verified at the plant or by cement wash out. A minimum of one test will be taken for each 50 cubic metres of concrete placed. For miscellaneous work involving small pours, one test will be made for each 10 cubic metres of concrete placed. Any deviation beyond 10% in the mix proportions submitted will result in rejection of the concrete.

## 2.10 Street Tree Standards

2.10.1 The following street trees are recommended for District of 100 Mile House street right-of-ways. Other varieties may be considered upon approval of the *Director*.

- a) These **small street trees** typically have a crown not exceeding **30 feet tall** and a **spreading habit**. The following trees are considered small street trees and may be allowed without an approved root guard in a planting strip at least 4 feet wide, unless otherwise noted. **These are the only trees allowed where there are overhead utility lines.**
  - 1. Royalty Crabapple (Malus 'Royalty')
  - 2. Radiant Crabapple (Malus 'Radiant')
  - 3. Makamik Crabapple (Malus 'Makamik')
  - 4. Shurbert Chokecherry (Prunus virginiana 'Schubert')
  - 5. Amur Maple (Acer ginnalla)
  - 6. Mayday (Prunus padus commutate) single stem
- b) These **small narrow street trees** typically have a crown not exceeding **30 feet tall** and have a **narrow growing habit**. The following trees are considered small

street trees and may be allowed without an approved root guard in a planting strip at least 4 feet wide unless noted.

1. Crimson Sentry Maple (*Acer platanoides* 'Crimson Sentry') **Use Root Barrier**
2. Red Cascade Mountain Ash (*Sorbus Americana* 'Dwarfscrown')
3. Snowbird Hawthorn (*Crataegus x mordenensis* 'Snowbird')

- c) These **medium narrow street trees** typically have a crown not exceeding **45 feet** and with a **narrow growing habit**. The following may be allowed without an approved root guard in a planting strip at least 5 feet wide and with an approved root guard in a planting strip less than 5 feet wide unless noted.

1. Columnar Norway Maple (*Acer platanoides* 'Columnare') **Use Root Barrier**

- d) These **medium street trees** typically have a crown not exceeding **45 feet** in height and a **spreading habit**. The following trees may be allowed without an approved root guard in a planting strip at least 5 feet wide and with an approved root guard in a planting strip less than 5 feet wide unless noted.

1. Red Maple (*Acer rubrum*) (any variety) **Use Root Barrier**
2. Little Leaf Linden (*Tilia cordata* 'Green Spire')
3. Northwood Maple (*Acer rubrum* 'Northwood") **Use Root Barrier**
4. Crimson King Norway Maple (*Acer platanoides* 'Crimson King') **Use Root Barrier**
5. Patmore Green Ash (*Fraxinus pennsylvanica* 'Patmore')
6. Pin Cherry (*Prunus pennsylvanica*)

- e) **Boulevard trees** typically have a crown exceeding **60 feet tall** and similar **spreading habit**. The following trees may be allowed in a planting strip at least 10 feet wide regardless of the use of a root guard.

1. Paper Birch (*Betula papyrifera*)
2. Burr Oak (*Quercus macrocarpa*)

- f) **Specialty trees**. Many other tree varieties, too numerous to list here are possible. Other varieties of trees, including edible plants, may be allowed, but are subject to approval by the *Director*.

#### 2.10.2 Prohibited Street Trees

The use of the following trees within the street right-of-way is prohibited unless approved by the *Director*.

1. Silver Maple (*Acer saccharinum*)
2. Weeping Willows (*Salix* spp.)
3. Fir (*Pseudotsuga*)
4. Pine Pinus)
5. Poplar (*Populus deltoides*, *Populus trichocarpa*, *Populus nigra* 'Italicas')

### 2.10.3 Root Barriers and Planting Space Width

Use of root barriers may be waved when recommended, based on soil types, width of planting strip, and thickness of sidewalk and curb. Root barriers do not guarantee protection from damage but have been shown to delay lifting from roots for many years when properly installed. A review by the *Director* is recommended when root barrier installation is considered.

Planting trees in **planting widths narrower than four feet** is generally not recommended. However, when no alternative is possible, consult the *Director* for planting and species recommendations. Narrow planting widths severely limit the health and longevity of street tree plantings.

## 3.0 SANITARY SEWER

### 3.1 Force Main

*MMCD* s. 3.0 Design Guideline Manual is supplemented with the following:

In conjunction with sanitary pumping facilities, the following criteria are required in the design of force main systems:

**Velocity** - At the lowest pump delivery rate anticipated to occur at least once per day, a cleansing velocity of at least 0.9 m/sec should be maintained. Maximum velocity should not exceed 3.5 m/sec.

**Air Relief Valve** - An automatic air relief valve shall be placed at the high points in the force main to prevent air locking.

### 3.2 Temporary Cleanouts

*MMCD* s. 3.14 Design Guideline Manual is supplemented with the following:

Temporary Cleanouts may be provided at terminal sections of a main provided that future extension of the main is proposed or anticipated, and the length of sewer to the downstream manhole does not exceed 45 metres, and the depth of pipe does not exceed two metres at the terminal point. Temporary cleanouts shall not be considered a permanent structure. Temporary Cleanouts shall be in conformance with Drawing S2 attached to Schedule B.

### 3.3 Materials

*MMCD* s. 02725 – 2.1.7 specification is supplemented with the following:

Sanitary manhole covers will be bolted and marked “*sanitary sewer*”.

### 3.4 Connections to Existing Mainline Pipes

*MMCD* s. 02731 – 3.8 specifications are supplemented with the following:

The works may be connected to the existing system at the start of construction provided that the existing system can be suitably plugged from the works under construction. Removal of the plug to the existing system shall not be made prior to testing and flushing. Written authorization must be given by the *Director* for removal of the plug.

### **3.5 Minimum Building Elevation (MBE)**

All drawing submissions shall clearly indicate *MBE* for each new lot where a gravity connection to the *District* sanitary sewer may be made and the habitable portion of the building is above the system hydraulic grade line.

## **4.0 DRAINAGE**

### **4.1 Temporary Cleanouts**

*MMCD* s. 4.12.12 Design Guideline Manual is supplemented with the following:

Temporary Cleanouts may be provided at terminal sections of a main provided that future extension of the main is proposed or anticipated and that the length of sewer to the downstream manhole does not exceed 45 metres, and the depth of pipe does not exceed two metres at the terminal point. Temporary Cleanouts shall not be considered a permanent structure and must be in conformance to Drawing D2 attached to Schedule B.

### **4.2 The Minor System**

*MMCD* s. 4.4.1 Design guideline Manual is deleted and replaced with the following:

The Minor System shall consist of pipes, gutters, catch basins, *driveways*, culverts, open channels, water courses and storm management facilities designed to carry flows of a 10 year return frequency.

### **4.3 Connections to Existing Mainline Pipes**

*MMCD* s. 02721 – 3.8 specifications are supplemented with the following:

The works may be connected to the existing system at the start of construction provided that a plug is installed suitable to stopping the passing of debris and silts into the existing system. Permission must be given by the *Director* to removal of the plug. Under no condition shall *connection* to an existing system, ditch or *watercourse* permit the discharge of silt, gravel or debris into those systems. The storm sewer service *connection* must be in conformance with Drawing D1 attached to Schedule B.

### **4.4 Catch Basins & Manhole Covers**

*MMCD* s. 02725 – 2.1.7 specifications are supplemented with the following:

Storm manhole covers will be marked “storm sewer” and catch basins shall be constructed in conformance to Drawing D3 attached to Schedule B.

#### **4.5 Splash Pads**

*MMCD* s. 4.12.14 Design guideline Manual is supplemented with the following:

Provided that the site is graded away from the building, where soil conditions permit and where surface water does not flow to adjacent *lots*, roof drainage may be discharged to the ground and dispersed via splash pads at the downspouts for single family residential structures. The preceding does not however necessarily relieve the *Developer* from the requirements for storm sewer *connection* and *storm water management plan*.

#### **4.6 Minimum Building Elevation (MBE)**

All drawing submissions shall clearly indicate *MBE* for each new *lot* where a gravity *connection* to the *District* storm system may be made and the habitable portion of the building is above the system hydraulic grade line.

#### **4.7 Storm Water Management Plan**

*MMCD* s. 4.2 and 4.3 Design Guideline Manual is supplemented with the following:

A Storm Water Management Plan or an Integrated Storm Water Management Plan shall be provided by the Consulting Engineer where required by the *Director* regardless of subject land area.

### **5.0 WATERWORKS**

#### **5.1 Use of *District* Water**

*MMCD* s. 02721 – 3.11.2, 02731 – 3.11.2, 02666 – 3.18.3, 02732 –3.16 are deleted and replaced with the following:

Under no circumstances may any *Contractor* use *District* water for testing or flushing purposes without the written permission of the *Director*. If such permission is granted, the *connection* shall be undertaken by *District* crews or under professional supervision to ensure no backflow or siphoning of water occurs.

#### **5.2 Connecting to Existing Waterworks Mains**

*MMCD* s. 02721 – 3.8, 02731 – 3.8, 02666 – 3.23, and 02732 – 3.16, are deleted and replaced with the following:

All *connections* to the existing *District waterworks* system are to be made by *District* crews or under direct supervision of the *Consulting Engineer* and *District* representative, and authorized in writing by the *Director*. The *Developer* shall make all

necessary arrangements with the *District* for scheduling of this work. To prevent damage to existing utilities, the last 300mm over the utility must be dug by hand.

### **5.3 Per Capita Design**

*MMCD* s. 2.3 Design Guideline Manual is deleted and replaced with the following:

The water distribution system shall be designed according to the following minimum standards:

- |                                    |                                |
|------------------------------------|--------------------------------|
| a) Average annual daily demand (A) | 700 litres per capita per day  |
| b) Maximum day demand (D)          | 2000 litres per capita per day |
| c) Peak Hour demand (H)            | 2780 litres per capita per day |

### **5.4 Hydrants**

*MMCD* s. 02666 – 2.6.2 Design Guideline Manual is deleted and replaced with the following:

All *District* hydrants shall be equivalent in all respects to Canada Valve or Terminal City C711P compression type fire hydrants and shall be equipped with two 64mm nominal I.D., 8 threads per 25.4mm, conforming to the B.C. Standard hose thread and one 130mm O.D. pumper port conforming to the American National Fire Hose Coupling Threads.

### **5.5 Service Connections**

All water service *connections* and service boxes must conform to Drawing W1 attached to Schedule B.

### **5.6 Flushing, Testing and Disinfection Procedure**

*MMCD* s.02666 – 3.17.4 is deleted and replaced with the following:

Chlorinated water flushed from the mains shall be treated in such a manner that it does not pose a threat to the aquatic life in the receiving water for fish bearing streams. If there is a possibility that the chlorinated discharge will cause damage to the environment, a neutralizing chemical shall be applied to the water to be wasted to thoroughly neutralize the residual chlorine. Disposal of chlorinated water into the *sanitary sewer* must be by slow release only and is subject to prior approval by the *Director*.

### **5.7 Water Sampling Station**

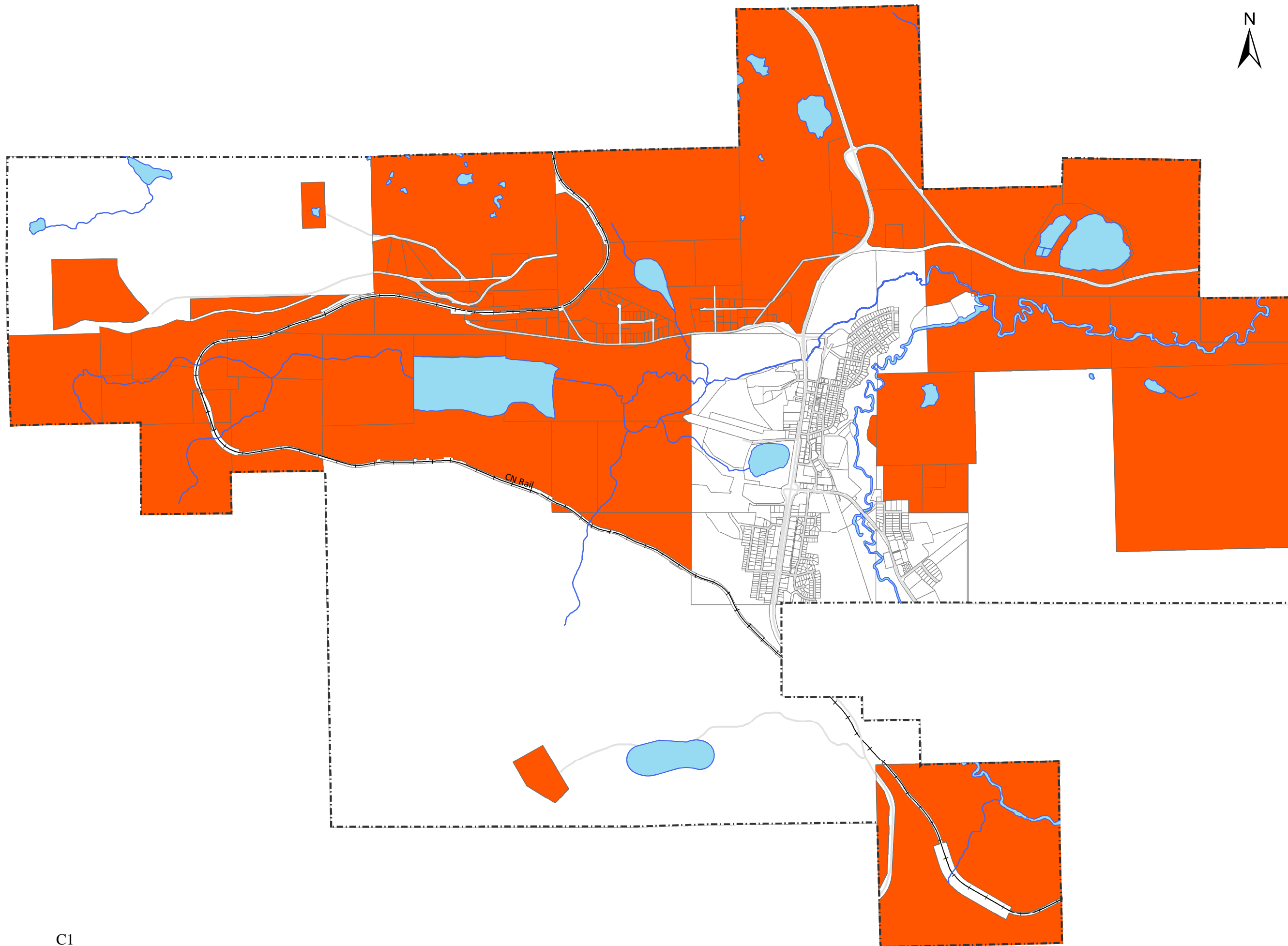
All required water sampling stations must be constructed in conformance to Drawing W3 attached to Schedule B.



 District  
Boundary

 Alternate  
Sanitary  
Servicing  
Area \*\*

 DOHM  
Parcels



\*\*On Site Septic  
System may be  
permitted

Schedule C  
Bylaw 1257, 2013  
Infrastructure Design  
and Construction  
**Alternate Sanitary  
Servicing Areas**

0 0.2 0.4 0.8  
Km