

THE CORPORATION OF THE CITY OF FERNIE



**SUBDIVISION AND DEVELOPMENT SERVICING BYLAW NO. 2514
2024**

April 15, 2024

SUBDIVISION AND DEVELOPMENT SERVICING BYLAW NO. 2514 2024

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SECTION 1 – AUTHORIZATION AND CITATION

WHEREAS the **Local Government Act**, R.S.B.C., provides that Council may, by bylaw, regulate and require the provision of works and services in respect of the subdivision **and development** of land.

NOW THEREFORE, the Municipal Council of the Corporation of the City of Fernie, in open meeting assembled enacts as follows:

- 1.1** This bylaw may be cited as the City of Fernie ***“Subdivision and Development Servicing Bylaw No. 2514”***

SECTION 2 –INTERPRETATION

2.1 DEFINITION

In this bylaw, unless the context requires otherwise:

"Act" means Local Government Act, Land Title Act, Health Act, and any other Act named in this Bylaw and found in the Revised Statutes of British Columbia, as amended or replaced both before and after the date of this Bylaw.

"Applicant" means the Owner as defined in this bylaw or a person authorized in writing by the Owner to apply for the approval under this bylaw.

"Approving Officer" means any person duly authorized by the Municipal Council to act as Approving Officer pursuant to the provisions of the Land Title Act.

"Boulevard" means that portion of a highway between the curb lines or the lateral boundary lines of a roadway and the adjoining property or between curbs on median strips or islands, but does not include curbs, sidewalks, ditches, or driveways.

"Building Regulations" means the Building Bylaw No. 1760 as amended or replaced.

"City" or "City of Fernie" means The Corporation of the City of Fernie;

"City Engineer" means the engineer responsible for development review at the City of Fernie.

"Community Sewer System" means a sanitary sewer, or a system of sewage disposal works which is owned, operated and maintained by the municipality.

"Council" means the Municipal Council of the City of Fernie.

"Cul-de-sac" means a highway with only one point of intersection with another highway, and which terminates in a vehicle-turning area and is designed to be permanently closed except for a lane or a walkway, by the pattern of subdivision.

"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.

"Developer's Engineer" means the Professional Engineer engaged by the developer to design and prepare drawings for construction of works in a subdivision or development, or their authorized representative.

"Development" includes, but is not limited to:

- 1) Construction of, addition to or alteration of a building or other structure, except interior construction or alteration, including, without limitation:
 - a) new building construction;
 - b) building additions and alterations, including alterations to exterior materials;
 - c) construction of, addition to or alteration of accessory buildings and structures, including sheds and other structures; or
 - d) construction of, addition to or alteration of retaining walls;
- 2) Alteration of land, including, without limitation:
 - a) site clearing or removal of vegetation;
 - b) landscaping, including planting and clearing;
 - c) site grading;
 - d) tree cutting;
 - e) placement of fill, or disturbance of soils, rocks or other native materials;
 - f) installation, construction or alteration of flood protection or erosion protection works;
 - g) installation, construction or alteration of roads, trails, docks, wharves or bridges;
 - h) installation, construction or maintenance of drainage, hydro, water, sewer or other utilities or utility corridors, including underground sprinkler or irrigation systems; and
- 3) Subdivision of land.

"Drainage System" means a system of works designed and constructed to control the flow of storm water and/or ground water.

"Frontage" means the length of a lot boundary which immediately adjoins a highway other than a lane or a walkway.

"Highway" includes a street, road, lane, bridge, viaduct, and any other way open to public use. Except for highways created under Section 4 of the Highways Act, the width of a highway is measured from lot line to lot line. A highway does not include private easements on private property.

"Lane" means a highway 6 meters or less in width intended to provide secondary access to parcels of land. A lane is not to be considered a partial street.

"Lot" means a parcel.

"MMCD" means the edition of the Master Municipal Construction Document published by the Master Municipal Construction Documents Association, versions described in Schedule A

"Municipality" means the City of Fernie or the area within the municipal boundary.

"Owner" shall have the same meaning as defined in the Community Charter.

"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.

"Potable Water" means water which is approved for drinking purposes by the Drinking Water Officer appointed by the Interior Health Authority.

"Professional Engineer" means a person who is registered or duly licensed as such under the provisions of the Engineers and Geoscientists Act of British Columbia.

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

"Service Level" means the standard of municipal services required for development of subdivisions and other developments not requiring subdivision under the provisions of this bylaw.

"Street" means a highway except a lane, trail, or walkway.

"Subdivision" means the division of land into two or more parcels by plan or apt descriptive words.

"Walkway" means a highway intended to be used by pedestrian and non-motorized traffic.

"Watercourse" means any natural or man-made depression with well-defined banks and a bed 0.6 metres or more below the surrounding land that serves to give direction to a current of water at least six months of the year or having a drainage area of two square kilometers or more upstream of the point of consideration.

"Zone" means an area created by the Zoning Bylaw of the City of Fernie as amended or replaced both before and after the effective date of this 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 City of Fernie Zoning Bylaw, or any regulation or Schedule to the enactment and in case of conflict the Local Government Act shall prevail.

DRAFT - April 15, 2024

SECTION 3 - ADMINISTRATION AND ENFORCEMENT

3.1 COMPLIANCE WITH BYLAW

No person shall subdivide or undertake Development in the City of Fernie except in compliance with the provisions of this Bylaw.

3.2 AUTHORIZATION TO ENTER ON LANDS BEING SUBDIVIDED

Officers of the City of Fernie, or their designates are authorized to enter, at all reasonable times, upon the lands for which an application to subdivide has been made, in order to ascertain whether the provisions of this Bylaw are being met, subject to the provisions of the *Community Charter*.

3.3 APPLICANT'S RESPONSIBILITY AND OTHER LEGISLATION

Nothing in this Bylaw shall relieve an Applicant from the responsibility to comply with every law, regulation or by-law, applicable to their Development. Neither the granting of a permit nor the issuance or review of any plans, specifications or documents or any inspection made by any City employee shall in any way relieve the Applicant from compliance with all laws, regulations or bylaws.

3.4 SEVERABILITY

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

3.5 APPLICATION FEE

An applicant for subdivision approval shall submit with the application a fee in the amount as prescribed by the *"Development Application Fees Bylaw No. 2008*, as amended or replaced.

3.6 VIOLATION and PENALTY

- .1 Any person who contravenes, violates, or fails to comply with any provision of this Bylaw, or who suffers or permits an act or thing to be done in contravention or violation of this Bylaw, or fails to do anything required by this Bylaw, or carries out, causes or permits to be carried out any development in a manner prohibited by or contrary to any of the provisions of this Bylaw, or fails to comply with an order, direction or notice given under this Bylaw, or prevents or obstructs or attempts to prevent or obstruct the authorized entry of an officer on property under Section 2 commits an offence, and shall be liable upon conviction:

(a) to a fine of not more than Ten Thousand (\$10,000.00) dollars or

(b) a fine imposed under the Municipal Ticket Information Bylaw as amended from time to time

.2 In addition to any fine imposed, the City may seek reimbursement for the cost of any prosecution, and seek any other penalty or order be imposed pursuant to the Community Charter or Offence Act as amended from time to time.

.3 If an offence continues for more than one day, each day that the offence continues constitutes a separate and distinct offence.

.4 Nothing in this Bylaw limits the City from utilizing any other remedy that is otherwise available to the City by law.

.5 The City hereby designates this Bylaw as a Bylaw that may be enforced by Bylaw Enforcement Officers, the Chief Administrative Officer, or their delegates, and R.C.M.P. Officers by means of a ticket in the form prescribed for that purpose by the Community Charter.

.6 Any person designated as a Bylaw Enforcement Officer pursuant to the Municipal Ticket Information Bylaw as amended from time to time is hereby authorized and empowered to enforce the provisions of this Bylaw.

3.7 SCHEDULES FORM PART OF BYLAW

Schedules A through E are attached to and form part of this Bylaw.

SECTION 4 - SUBDIVISION AND DEVELOPMENT REQUIREMENTS AND REGULATIONS

4.1 LAND DEDICATION - SUBDIVISION

4.1.1 HIGHWAY ALLOWANCES

- (a) When the Applicant proposes a Highway dedication in a plan of Subdivision, the Approving Officer will consider the sufficiency of the Highway dedication by determining the road classifications shall be determined, in accordance with this Bylaw.
- (b) The Applicant shall provide, without compensation, land for Highway dedication in accordance with the Land Title Act

4.1.2 PARKLAND DEDICATION ON SUBDIVISION

- (a) If required by the provisions of the Local Government, Act., an Applicant for subdivision of land shall, at the option of the Applicant, provide park land of an amount up to 5% of the land being subdivided and in a location acceptable to the Approving Officer, or, pay to the City an amount that equals the market value of the land that may be required for park land purposes as determined by the provisions of the Local Government Act.

4.1.3 EXPENSE OF SERVICES TO BE BORNE BY OWNER

Unless otherwise provided in this Bylaw, all works and services required in this Bylaw shall be constructed and installed at the expense of the Owner or Applicant.

4.1.4 SECURITY AND DEVELOPMENT AGREEMENT REQUIRED

- (a) All works and services to be constructed and installed to serve any development or proposed subdivision of any lands shall be constructed and installed as prescribed in Schedules A to E hereto at the expense of the Applicant prior to the approval of such subdivision by the Approving Officer. A plan of subdivision may receive approval prior to the completion of the construction and installation of the required works and services where the Applicant deposits a bond or a letter of credit in the form as contained in Schedule D, with the City of Fernie in the amount of One Hundred and Twenty-Five Percent (125%) of the cost of installing all the works and services required as estimated by the Developer's Engineer before the subdivision plan is finally approved by the Approving Officer, and enters into a form of agreement with the City as contained in Schedule D hereto for subdivisions pursuant to the Land Title Act of the Province of British Columbia, to do all things required to carry out and construct the necessary works and services.

- (a) Where the owner of land is required to construct and install works and services in accordance with the provisions of this Bylaw, the owner shall:
- (i) operate and maintain the works constructed and installed for the periods specified in Schedule D.
 - (ii) provide the City with a non-refundable payment for the Inspection and Administration Fee, as specified in Schedule D.
 - (iii) provide the City with a bond or a letter of credit in the amount of ten percent (10%) of the cost of installing and paying for all the works and services required as estimated in 4.1.4 a. The bond or letter of credit shall be held as security against unsatisfactory operation of the works and services during the maintenance periods specified in Schedule D.
 - (iv) construct and install all the works and services required by this Bylaw to the satisfaction of the City Engineer.
- (b) The City reserves the right to deny building permits or occupancy permits if works and services are not completed to the satisfaction of the City.

4.2.2 EXCESS OR EXTENDED CAPACITY

Pursuant to the Local Government Act, the City may require that an Applicant provide excess or extended services to provide access to or service land other than the land being subdivided or developed.

4.2.3 DESIGN AND FIELD REVIEW OF CONSTRUCTION BY A PROFESSIONAL ENGINEER

All engineering drawings required in this Bylaw for works and services, shall be prepared by a Professional Engineer registered to practice in the Province of British Columbia.

The Applicant shall engage a Professional Engineer to carry out all necessary field reviews and inspections during the construction of works and services required as a condition of subdivision or development approval. The Professional Engineer shall submit a report in the format set out in Schedule D of this bylaw certifying that the works and services have been carried out in general compliance with this Bylaw and the plans, drawings and supporting documents submitted in support of the subdivision or development application which were accepted by the City.

All applications for subdivision or development shall include a letter of commitment from the Applicant in the format set out in Schedule D of this bylaw, that a Professional Engineer has been engaged to carry out all necessary design works and undertake all field services for the subdivision or development.

SECTION 5 - SERVICING REQUIREMENTS

5.1 GENERAL

- 5.1.1 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.
- 5.1.2 Unless otherwise approved by 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.
- 5.1.3 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, according to the established service level, as set out in Schedule A:
- (a) 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 and Schedules B and C.
 - (b) Active Transportation Infrastructure, Boulevards, Streetlighting
Active Transportation Infrastructure, 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.
 - (c) 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 and obtain and demonstrate that all regulatory approvals necessary have been secured.
 - (d) 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.

(e) 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 City. 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.

(f) Power, Communication, Gas and other Third Part Utilities

Power, communication, gas and other third-party utilities shall be constructed underground from the tie-in point to the termination of the last lot in accordance with the standards set by each utility provider. The location of shallow utilities shall be shown on the design drawings.

- 5.1.4 If, in the opinion of the City 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 City approval, to make a cash payment to the City, in the amount estimated by the Developer's Engineer as the design construction and installation value of the Works and Services. The City 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 City.

5.2 STATUTORY RIGHTS-OF-WAY

- 5.2.1 For the purpose of constructing and installing or maintaining Works and Services, statutory rights-of-way in the form of the City'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:

- (a) B.C. Land Surveyor costs;
- (b) legal fees;
- (c) registration costs and fees including Land Titles Office fees.

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

5.3 EXCEPTIONS TO SERVICING REQUIREMENTS

5.3.1 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.

5.3.2 Subdivisions for Specific Purpose

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

- (a) Highway dedication;
- (b) park land;
- (c) a parcel for the installation of public utilities and related structures and equipment;

5.4 WORKS AND SERVICES IMPRACTICAL TO BUILD

5.4.1 If it is not practical to build all or part of the required Works and Services until a project of greater scope proceeds, and;

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 City Engineer. Instead, the Developer may provide the City with security in the form of cash, certified cheque or irrevocable Letter of Credit in an amount, accepted by the City Engineer, to equal the cost of designing, constructing and providing the Work or Service. The funds will be placed by the City in a reserve fund until they are used to provide or complete the Work or Service.

5.5 LEVELS OF WORKS AND SERVICES REQUIREMENT

The Developer must provide all municipal services including roads conforming to the typical road cross sections and required standards, to the Levels of Service specified in Schedule A.

5.6 LATECOMERS

If the City requires the owner of land that is to be subdivided or developed to provide excess or extended services, the costs of providing the excess or extended services may be subject to cost recovery through latecomer charges pursuant to the Local Government Act.

SECTION 6 - ENACTMENT

6.1 APPLICABILITY OF PREVIOUS BYLAW

The provisions of this bylaw shall have no force and effect with respect to Development that has been issued a Preliminary Layout Approval for subdivision of land by the Approving Officer of the Corporation of the City of Fernie, a Building Permit, or a development permit authorizing the alteration of land, prior to the effective date of this bylaw by the Mayor and Council of the Corporation of the City of Fernie, and the provision of Subdivision and Development Servicing Bylaw No. 1727, as amended, shall continue to apply to such Development.

6.2 EFFECTIVE DATE

This Bylaw shall come into effect the 1st day of September 2024.

INTRODUCED AND

Read a FIRST time this day of 20____.

Read a SECOND time this day of 20____

Read a THIRD time this day of 20____

FINALLY PASSED AND ADOPTED this day of 20____

Mayor

Corporate Officer

SCHEDULE A

SUBDIVISION AND DEVELOPMENT SERVICING BYLAW NO. 2514
2024

GENERAL REQUIREMENTS

SCHEDULE A
GENERAL INFORMATION, DESIGN CRITERIA & SUBMISSION
REQUIREMENTS

- 1.0 GENERAL INFORMATION**
- 2.0 GENERAL DESIGN CRITERIA**
- 3.0 SERVICE LEVELS**

DRAFT - April 15, 2024

SECTION 1 - GENERAL INFORMATION

1.1 INTRODUCTION

- a) Schedule A to the Subdivision and Development Servicing Bylaw identifies the General Information required by the City of Fernie.

1.2 SCOPE AND USE OF SCHEDULE A

- a) Schedule A provides specifications for Development within the City.
- b) The onus is on the Developer to ensure that their designs meet the provisions of this bylaw.
- c) Master Municipal Construction Documents, 2019 (MMCD)

The provisions of the Bylaw are to be applied in conjunction with the MMCD as set out herein,

Where the provisions of this Bylaw are in conflict with the MMCD Specifications, the provisions of this Bylaw take precedence, unless otherwise authorized by a Development Variance Permit.

All works and services shall be completed in accordance with the following Portions of the MMCD, unless specifically modified herein.

- Volume II Master Municipal Specifications - Division 01, 03, 26, 31 to 34 inclusive including any relevant definitions in the Master Municipal General Conditions and excluding all Provisions Pertaining to Measurement and Payment, Guarantee/Maintenance ;
- Volume II Standard Detail Drawings

The Following items within Division 01, 03, 26, 31 to 34 are to be synonymous with alternative definitions as described below as they pertain to this bylaw

- Owner shall be synonymous with the Applicant as defined within this bylaw
- Contract Administrator shall be synonymous with Developer's Engineer as defined within this bylaw
- Contract Drawings shall be synonymous with Drawings prepared by the Developer's Engineer and approved by the City.

- d) Master Municipal Construction Documents (MMCD), Design Guideline Manual, 2022 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 City.

Where the provisions of this Bylaw are in conflict with the Master Municipal Design Guideline manual, the provisions of this Bylaw take precedence.

SECTION 2 - GENERAL DESIGN CRITERIA

2.1 INTRODUCTION

- 2.1.1 The purpose of this section is to outline the minimum standards and requirements the City will accept in the design and submission for Works and Services.
- 2.1.2 It is the specific intent of the City to receive quality submissions for design of Works and Services and Record submissions. It is required that whenever site development or underground works are proposed, the Developer's Engineer must arrange for a pre- design meeting to ensure compliance with the latest City standards, specifications and policies.
- 2.1.3 Incomplete or substandard design submissions will be returned to the Developer's Engineer. A subsequent re-submission which remains incomplete or sub-standard will result in a request to meet with the Developer's Engineer, the Developer and the City Engineer.
- 2.1.4 Where a question arises, please contact the City Engineer for clarification, in writing.
- 2.1.5 All submissions shall reflect and comply with the following:
 - a. All applicable requirements of this Bylaw.
 - b. All applicable requirements of the City, including but not limited to:
 - i. The Official Community Plan
 - ii. The current Zoning Bylaw(s)
 - iii. The current Building Bylaw
 - c. Be designated and dimensioned in Standard Metric units.
- 2.1.6 All engineering and technical submissions are subject to an independent peer review. The City reserves the right to retain independent consultant(s) for peer reviews on any and all portions of submissions. All costs associated with these peer reviews will be the Owners responsibility.

2.2 GEOTECHNICAL AND HYDROGEOLOGICAL DESIGN CONSIDERATIONS

- 2.2.1 The Developer's 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 TRAFFIC IMPACT CONSIDERATIONS

- 2.3.1 The City may require the Applicant to provide a traffic impact study to determine the impact of development generated traffic on the existing transportation network and to identify any required upgrades to the transportation network as a result of the development.

2.4 OFF-SITE UTILITIES IMPACT CONSIDERATIONS

- 2.4.1 The City may require the Applicant to provide an off-site utilities impact analysis to determine the impact of development utility services on the existing utility network and to identify any required upgrades to the utility network as a result of the development.

2.5 SURVEY INFORMATION

- 2.5.1 Anyone employed by the Developer or the City of Fernie must have permission from the registered Owner before entering private property.
- 2.5.2 All surveys shall be to elevation and coordinates derived from the Geodetic Datum, Geodetic Survey of Canada and NAD83.
- 2.5.3 A topographic contour plan to 1.0 m intervals shall be provided. 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 benchmark or GPS control point with elevation shall be shown in each design drawing.
- 2.5.4 Originating benchmarks and integrated survey monuments shall be noted on all plans as well as those to be established in the work.
- 2.5.5 Copies of legible field notes shall be made available to the City upon request.
- 2.5.6 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.
- 2.5.7 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.
- 2.5.8 Where applicable, roadway cross sections and other pertinent features will be required. The section shall include centerline, edge of pavement or gutter line, edge of shoulder, ditch invert, top of ditch, property line, and an existing ground elevation inside property line.

2.6 DESIGN DRAWING SUBMISSION

- 2.6.1 All drawings submitted to the City shall be prepared in metric, on standard A1
- Schedule A – General Requirements - Page 5 of 10

sheets/scales, in accordance with the following requirements and all other applicable requirements of this Bylaw.

2.6.2 All drawings submitted to the City shall be signed and sealed by a Professional Engineer registered under the Association of Professional Engineers and Geoscientists of British Columbia.

2.6.3 The Developer's 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.

2.6.4 All drawings submitted to the City 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 City.

2.6.5 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:

a) Cover Sheet

The Cover Sheet shall note the Developer's Engineer's name, the Developer's name, the City 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.

b) Key Plan

The Key Plan shall be at a 1:500 scale and shall note all proposed services, including street lighting and shallow utilities. 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.

c) Storm Water Management 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.

d) Water

Plan and profile drawings shall show all grades, inverts, curves, radii, valves, hydrants, bends, and other features. All tie-in connections shall be fully detailed with dimensioned spool lengths, restraints, valves, fittings and all other construction details. 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.

e) 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.

f) 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.

g) 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.

h) 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 centerline, 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.

i) 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 City Standards and Specifications and the appropriate design criteria. Any street lighting plan(s) should be accompanied with the photometric calculations.

j) Construction Details

Construction Details shall show a proposal for construction which are not covered or specifically detailed in the City Standards and Specifications or as per MMCD. Where there is a City 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 City Standard Drawing.

k) Lot Grading Plan

Lot Grading Plans shall meet all requirements as set out in the Standard Drawings. 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 Developer's Engineer and approved by the City 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.

l) Erosion and Sediment Control Plan

Erosion and Sediment Control Plan shall be shown at 1:500 scale and shall illustrate the extents of tree clearing, grubbing and stripping locations, onsite and offsite sediment and erosion control features such as silt fencing, sediment basins, construction vehicle wash facilities and maintenance stockpile storage locations. Drawings shall provide details and notes describing the installation and maintenance of all features and shall provide protection of sensitive areas, watercourses and all other environmental features. Plan shall identify any works and services required by other approval authorities' requirements.

m) Signage and Line Painting

Signage and Line Painting plan to be submitted and included with the lane marking and signage. Street names are subject to approval by the City of Fernie.

n) Landscape and Streetscape Design

Landscape and Streetscape Design Plan shall be provided where boulevard plantings or street furniture is proposed. The drawings shall include a planting schedule and details of any street furniture proposed.

2.6.6 Notwithstanding the previously detailed requirements, the following additional information is to be noted in design submissions to the City of Fernie:

- a) The size, grade, inverts, and type of material on profile sections, based on the same chainage as indicated on the plan drawings;
- b) The locations, off-sets, curvatures, size and identification of the mains noted on the

Plan sections;

- i. the clearance between mains at cross-over points;
- ii. 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.);
- iii. in rural subdivisions, with an open ditch drainage system, note the size of (future) driveway culverts required to conform to the design.

2.6.7 All design submissions shall be submitted together as one complete package with all supporting information from the Developer's Engineer and other consultants including a PDF copy and AutoCAD to the City.

a) The first complete design submission shall consist of:

- i) two complete sets of drawings;
- ii) Geotechnical and soils investigation report (to verify road structure design);
- iii) Photometrics (lighting calculations) for street lighting plans if

- specifically required by the City Engineer;
- iv) Traffic Impact Study, if specifically required by the Approving Officer;
- v) Off-Site Utilities Impact Analysis, if specifically required by the Approving Officer;
- vi) all applicable utility hydraulic calculation and structural calculations (water, sanitary, storm sewer);
- vii) any additional design briefs identified as necessary by the City Engineer;
- viii) Construction and installation cost estimate (under seal of the Developer's Engineer).

- b) Subsequent design submissions requiring changes to the previous submission shall consist of:

- i) two complete sets of drawings;
- ii) a complete construction cost estimate;
- iii) all submissions subsequent to first submission shall have highlighted any changes made by the Developer's Engineer which are in addition to "Red Line" changes required by the City;
- iv) Items "Red Lined" must be addressed by the Developer's Engineer. Failure to do so will result in submissions being returned.

2.6.7 All design and record drawings to be submitted based on MMCD standards.

- a) Digital drawing submissions shall follow the latest MMCD standard for AutoCAD symbols, layers & line types, with drawing creation using MMCD AutoCAD templates.

2.7 CONSTRUCTION COST ESTIMATE CALCULATIONS

2.7.1 The construction cost estimate shall be broken down in a format as defined in MMCD.

2.7.2 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.

2.8 SERVICE CONNECTION CARDS

2.8.1 The Developer's Engineer will provide service connection cards for each development. Service Connection Cards are considered part of the Record submission and shall be provided in the preferred format of the City at that time. Each service connection card is to indicate clearly and accurately the following information:

- a) the location, depth, size and material of construction of each City utility connection
- b) the City project number
- c) legal plan number and/or lot number
- d) civic address (if established)

2.9 RECORD SUBMISSIONS AND ASSET MANAGEMENT SCHEDULE

- 2.9.1 The following procedures are required in the delivery of Record Submissions and Asset Management Schedules to the City.
- 2.9.2 The Developer's 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 City review.
- 2.9.3 One marked-up set of the Record paper prints will be returned to the Developer's Engineer for revision. If there are minor changes, it may be requested that the prints with the revisions noted, be submitted for City acceptance. If there are numerous amendments, it is likely that the Developer's Engineer will be required to resubmit two sets of revised paper prints for a second review.
- 2.9.4 The Developer's 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.
- 2.9.5 The City shall receive all documentation in 2.9.3 & 2.9.4 prior to issuing Substantial Performance for the project unless otherwise approved by the Approving Officer.
- 2.9.6 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 City. 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 a PDF copy is to be submitted in a format as prescribed by the City.
- 2.9.7 Geotechnical Investigation Report
A finalized copy of the Geotechnical Report, signed and sealed by the Developer's Engineer.
- 2.9.8 Traffic Impact Study
A finalized copy of the Traffic Impact Study, signed and sealed by the Developer's Engineer.
- 2.9.9 Off-Site Utilities Impact Analysis
A finalized copy of the Off-Site Utilities Impact Analysis, signed and sealed by the Developer's Engineer.

SECTION 3 – SERVICE LEVELS

- 3.1 Except for subdivisions and developments described in Section 5, Paragraph 5.3 Exceptions to Servicing Requirements, the following levels of service shall be provided in all new subdivisions and developments:

Description	Water	Sanitary Sewer	Storm Water Drainage	Roads	Street Lighting	Hydro, Telephone, Cable
Urban	Municipal	Municipal	Curb with underground	As per classification and Standard Drawings	Full illumination	Underground
Rural	Municipal	Municipal	Overland with ditches	As per classification and Standard Drawings	Full illumination	Underground

- 3.2 All areas shall be considered as Urban except for those with a Rural Zone Designation as per the Zoning Bylaw No. 1750 – Schedule A, as amended or replaced.

SCHEDULE B

**SUBDIVISION AND DEVELOPMENT SERVICING BYLAW NO. 2514
2024**

DETAILED DESIGN CRITERIA

SCHEDULE B
DESIGN CRITERIA

2.0 WATER DISTRIBUTION

3.0 SANITARY SEWERS

4.0 STORMWATER MANAGEMENT

5.0 ROADS

6.0 ROADWAY LIGHTING

SECTION 2.0 – WATER DISTRIBUTION

The purpose of this section is to supplement and clarify existing design guidelines as described in MMCD Design Guidelines. The designer must comply with all requirements included in reference documents and described herein, unless specifically pre-approved otherwise by the City Engineer.

2.1 GENERAL

- a) Engineers retained by the Developer to design the works and services must consult with the City Engineer to determine what existing information may be of assistance to them.
- b) The water system design is to be done using a calibrated water model acceptable to the City unless the systems design, as determined by the City Engineer, is not complex.
- c) Watermains greater than 400mm diameter require specific approval from the City Engineer.
- d) Approval from Interior Health is required prior to construction, installation, alteration or extension of a water system.

2.2 METERING

- a) Strata lots, including bare land strata lots, shall provide the meter at the property line, or as directed by the City Engineer. All meter chambers shall be protected against freezing.
- b) All meters, where required, shall be supplied and installed by the Developer under the direct supervision of the City staff. Refer to Approved Products List for acceptable meters.
- c) Where developments require water meters to be installed outside of buildings, the outside meter chambers, vaults or enclosures shall include the same requirements as listed in MMCD under valve chambers with the following additional items:
 - i) watertight structures;
 - ii) drainage and ventilation;
 - iii) protection against freezing;
 - iv) adequate access and interior space for maintenance and equipment removal with minimum headroom of 2.0 m;
 - v) full open access to avoid confined space restrictions;
 - vi) permanent ladder to WorkSafeBC regulations;
 - vii) piping primed and painted with a rust-inhibiting paint;

- viii) meter bypass;
- ix) remote radio reading capability;
- x) additional requirements as identified by the City Engineer.

2.3 PER CAPITA DEMAND

- a) As a replacement to the MMCD values, the design criteria noted in Table 2.3.1 must be used. Where the flow characteristics of the development area are substantially different, the criteria may be modified with written approval from the City Engineer.

Table 2.3.1 – Per Capita Demand	
Average daily demand, domestic flow	500 litres/capita/day
Maximum daily demand, domestic flow	2x average day demand
Peak hour demand, domestic flow	3x average day demand

2.4 NON-RESIDENTIAL DEMAND

- a) Non-residential demand shall be as indicated by MMCD.

2.5 FIRE FLOWS

- a) Where a difference arises between MMCD minimum requirements and the current edition of the “Water Supply for Public Fire Protection – A Guide to Recommended Practice” published by Fire Underwriters Survey, the more stringent requirements shall take precedence.

2.6 DESIGN FLOWS

- a) Design for water distribution systems shall be based on MMCD methodology.

2.7 WATER PRESSURE

- a) Water pressures shall be based on MMCD methodology.

2.8 HYDRAULIC DESIGN

- a) Hydraulic design shall follow MMCD methodology.
- b) Where the existing water system network is inadequate to provide minimum flow and pressure on a property, installation of supplementary mains may be required and may necessitate the provision of rights-of-way in favour of the City.
- c) Minimum watermain size shall be the more stringent of requirements stated in MMCD or as demonstrated by a comprehensive hydraulic network analysis.

2.9 MINIMUM PIPE DIAMETER

- a) Minimum pipe diameters are to be as specified by MMCD.

2.10 DEAD ENDS

- a) Where dead ends are unavoidable and approved by the City, sizes for blowoffs and blow downs are to be as indicated by MMCD with additional provisions for erosion control and protection of receiving environments.
- b) In no instance shall a permanent dead end exceed 200 m in length.

2.11 MINIMUM DEPTH OF COVER

- a) Minimum depth of cover shall be 2.4m in addition to meeting all other requirements specified by MMCD.
- b) Maximum cover over pipe to be 3.0m with prior approval from the City Engineer and supported by load calculations.

2.12 GRADE

- a) Criteria for pipe grades shall be as specified by MMCD requirements.

2.13 CORROSION PROTECTION

- a) Corrosion protection and assessment of corrosive soils shall as indicated in MMCD.

2.14 VALVES

- a) In addition to the location of valves specified by MMCD, valves are required at the following;
 - i) **4** valves at "X" intersection;
 - ii) **3** valves at "T" intersection, including hydrant branch tees;
 - iii) At both ends of a utility Right-of-Way, water course boundary line, Provincial Highway or rail Right-of-Way;
 - iv) It is possible to isolate a section of water main by operating no more than 4 valves;
 - v) Additional valving may be required due to phasing of subdivision development and as determined by the City Engineer.
- b) Resilient seat gate valves are required on mains smaller than 450 mm diameter.

2.15 HYDRANTS

- a) The Developer's Engineer must consider the existing, and intended use in the area and ensure that adequate spacing is provided in accordance with

- b) Hydrants shall be located as specified by MMCD in addition to being not more than 90 m apart in commercial, industrial and institutional areas.
- c) The 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.
- d) Hydrant access provisions may be required and placed strategically and shall be reviewed and approved by the City Engineer. 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 standard drawings.
- e) For cul-de-sac roads, hydrants shall be located at the last lot before the cul-de-sac bulb.

2.16 BLOW-OFFS AND BLOWDOWNS

- a) Blow-offs and blowdowns are to be provided as specified by MMCD.

2.17 TEST POINTS

- a) Test Points shall be installed on all watermains as specified by MMCD at strategic locations approved by the City Engineer.
- b) Install test point assemblies as per manufacturers' recommendations.

2.18 AIR VALVES

- a) Air valves must be installed under conditions indicated by MMCD.

2.19 THRUST RESTRAINTS

- a) Thrust restraint shall be provided as specified by MMCD.
- b) If mechanical joint restraints are used, the design drawings shall indicate the number of joint restraints required to resist the thrust at the fittings.
- c) Thrust block design calculations and soil bearing pressures must be shown on the design drawings.
- d) Mechanical joint restraints shall be used on all water main joints designated by the City 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 City Engineer.

2.20 CHAMBERS

- a) Chambers shall be designed with accommodations as stipulated in MMCD.

2.21 SERVICE CONNECTIONS

- a) Service connection size shall be as indicated by MMCD.
- b) All water connections for industrial, commercial and institution land use shall have a double check valve installed on the private system.
- c) Main stops must be staggered and placed such that saddle locations are no closer than the manufacturers specified distance apart along the main line for the pipe material used.
- d) Services and curb stops must have a minimum cover of 2.4 m and must not be deeper than 3.0 m.
- e) Each unit of a duplex must be serviced individually, including duplex strata developments. A carriage house shall be serviced from the main service connection or through the main residence.
- f) Services made of copper shall include thaw wire as per Schedule E Approved Products List.

2.22 ALIGNMENTS AND CORRIDORS

- a) Curved mains will not be permitted. Joint deflections shall be as per MMCD requirements.
- b) Water main extensions shall extend to and terminate at the furthest property line of the last lot it services complete with blow-off as per standard drawing.
- c) Tracer wire or metallic warning tape is required on all PVC watermains and shall be installed per the manufacturer's specification.

2.23 RESERVOIRS

- a) The pre-design and detailed design of a reservoir must incorporate all requirements specified by MMCD and the following;
 - i) Approval from Interior Health prior to construction;
 - ii) A Programmable Logic Controller (PLC) control system connected to the City of Fernie SCADA system;
 - iii) Must be cleaned and disinfected to AWWA requirements prior to potable water use;
 - iv) Manuals to be supplied as per "Manuals" section;

2.24 PUMP STATIONS

- a) The pre-design and detailed design of a pump station must incorporate all requirements specified by MMCD and the following;
 - i) Manuals to be provided as per “Manuals” section;
 - ii) A Programmable Logic Controller (PLC) control system connected to the City of Fernie SCADA system;

2.25 PRESSURE REDUCING VALVE (PRV) STATIONS

- a) The predesign and detailed design of a PRV station must incorporate all requirements specified by MMCD and the following;
 - i) Manuals to be provided as per “Manuals” section;

2.26 MANUALS

- a) Supply (3) copies of operating and maintenance manuals in the following format:
 - 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.
- b) Contents to include:
 - i) Title sheet, labeled “Operation and Maintenance Instructions”, and containing project name and date;
 - ii) Table 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
 - vii) Installations, including a digital PDF and AutoCAD (latest version) format are required;
 - viii) 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;
 - ix) Full description of entire mechanical, electrical and alarm system operation;
 - x) Names, addresses and telephone numbers of all major sub-contractors and suppliers;
 - xi) Commissioning report showing pressures, flows, current draw for all possible operating conditions;
 - xii) All SCADA programming shall be provided to the City in digital

2.27 FACILITY ACCESS

- a) All-weather vehicular access must be provided to all reservoirs, PRV's 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% unless approved by the City Engineer.

2.28 CROSS CONNECTION CONTROL

- a) All developments shall meet the AWWA Canadian Cross Connection Control Manual (latest edition).
- 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.
- c) 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 3.0 – SANITARY SEWERS

The purpose of this section is to supplement and clarify existing design guidelines as described in MMCD Design Guidelines. The designer must comply with all requirements included in reference documents and described herein, unless specifically pre-approved otherwise by the City Engineer.

3.1 GENERAL

- a. Engineers retained by a Developer to design the works and services must consult with the City Engineer to determine what existing information may be of assistance to them.
- b. The sanitary sewer system is to be designed using a calibrated sanitary sewer model acceptable to the City Engineer, unless the City Engineer determines the system is not complex.
- c. The downstream capacity of the existing system must be confirmed. This may require modelling of the existing system. The Developer is responsible for all costs to confirm the downstream capacity and may require a deposit to be paid to the City for this work to be done by others.
- d. Private onsite sewage disposal systems are not permitted in the City of Fernie. The sewage collection system on any parcel shall be constructed and connected to the community sewer system consistent with a site servicing plan approved by the City Engineer.

3.2 PER CAPITA FLOW

- a) Per capita flow shall be as specified in MMCD except for the following;
 - i. Residential Average Dry Weather Flow Rate = 350 L/d/c

3.3 NON-RESIDENTIAL FLOWS

- a) Non-residential flow shall be as specified in MMCD.

3.4 PEAKING FACTOR

- a) The peaking factor shall follow MMCD methodology.

3.5 INFILTRATION

- a) Infiltration allowance shall follow MMCD methodology.

3.6 DESIGN FLOW

- a) The sanitary sewer system must be designed based on MMCD methodology.

3.7 PIPE FLOW FORMULAS

- a) Design for gravity sewers and force-mains shall be calculated using MMCD methodology.

3.8 FLOW VELOCITIES

- a) The minimum velocity shall be as indicated by MMCD.

3.9 ALIGNMENT

- a) Alignment of sewers shall follow MMCD methodology.

3.10 MINIMUM PIPE DIAMETER

- a) The minimum permitted size of pipe shall be as indicated by MMCD:

3.11 MINIMUM GRADE

- a) The minimum grade of any sewer is governed by MMCD except as stipulated in 3.11.a i.
 - i) The upstream section of a residential sewer servicing a design population of 25 or less shall have a minimum grade of 1.0%.

3.12 CURVED SEWERS

- a) Curved sewers shall only be considered in exceptional situations to the maximum indicated in MMCD provided a functioning tracer wire is installed over the curved section between manholes and shall require review on a case-by-case basis by the City Engineer

3.13 DEPTH

- a) The depth of sewers shall follow all MMCD considerations except that; Minimum cover shall be 1.5m.

3.14 MANHOLES

- a) **Locations**
 - ii) Manholes are required as indicated by MMCD.
 - iii) Sanitary manhole rim elevations in off-road areas must be designed to be a minimum of 150mm above the surrounding finished grade.
 - iv) Manholes located outside road Right-of-Ways must be identified with a steel marker post painted red with offset dimension noted on the post.

b) Hydraulic Details

- i) Hydraulic flow at manholes shall follow MMCD.

3.15 ODOUR CONTROL

- a) Odour controls shall follow MMCD methodology in addition to meeting the following criteria;
 - i) Dissolved sulphide maximum limit at any point in the system is to be 0.5 mg/L
 - ii) odour unit intensity when measured 10.0 m from any gravity main, force main, manhole and lift station or other sewer facility during summer conditions with winds between 2-10 km/h.
 - iii) 0.0 unity intensity where sewer facilities are within 100 m of houses, parks or walkways.

3.16 SERVICE CONNECTIONS

- a) Service connections shall meet all MMCD requirements and shall include an inspection chamber with a cast-iron lid at the surface rated for vehicle loading. A 3-4" gap is required between the PVC stand pipe and internal lip of the cast iron frame.
- b) Pump connections, if permitted, shall terminate at property line into a gravity sanitary sewer line service or to a manhole. Pumped connections will not be permitted to connect to a sanitary sewage force main.
- c) Minimum grade from property line to sanitary sewer main shall be as indicated in MMCD except:
 - i) 100 mm diameter pipe slope to be a minimum of 2.0%

3.17 LOCATIONS AND COORIDORS

- a) The location of sanitary sewers shall follow the requirements specified in MMCD.
- b) Except for conditions noted in 3.17.c, Right-of-Ways or Easements shall be surfaced and graded accordingly to allow access for City maintenance vehicles to repair or replace the utility and shall be registered on title.
- c) Where there is no infrastructure that would require occasional maintenance by the City of Fernie, such is the case where only one pipe is present within the utility Right-of-Way or Easement, the requirement for access by maintenance vehicles may be waived by the City Engineer.
- d) Sewer main extensions shall extend past the furthest property line of the last serviced lot with sufficient distance to eliminate future impact on developed lots and/or temporary cul-de-sacs.

3.18 PUMP STATIONS

- a) The pre-design and detailed design of a pump station must incorporate all requirements specified by MMCD and the following;
 - i) A Programmable Logic Controller (PLC) control system connected to the City of Fernie SCADA system;
 - ii) Manuals to be supplied as per section 2.26 in the water design criteria;
 - iii) Minimum storage between the high-level alarm and the start of overflow under the more critical of:
 - a. Minimum 1 hour in wet well at average wet weather flow; OR
 - b. Minimum 1 hour in wet well and influent pipes at peak wet weather flow;
 - iv) Station to allow removal of pumps using hoist truck with 1.8 m boom;
 - v) Odour control may be required when criteria in Section 3.15 is exceeded;

3.19 LOW PRESSURE SEWERS

- a) Low pressure sewers may be permitted by the City under special circumstances.

3.20 FORCEMAIN DESIGN

- a) Design of force mains shall follow the methodology stated in other sections as well as the following additional considerations;
 - i) An automatic air relief valve must be placed at high points in the force main to prevent air locking;
 - ii) 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;
 - iii) 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;
 - iv) Valve used on force mains shall be plug valves sufficient for long term use in a corrosive environment.
 - v) All force mains must be designed to prevent damage from superimposed loads, or from water hammer or column separation phenomena.

- vi) For non-metallic force mains, a tracing wire shall be installed for the purpose of locating the force main.

DRAFT - April 15, 2024

SECTION 4.0 – STORMWATER MANAGEMENT

The purpose of this section is to supplement and clarify existing design guidelines as described in MMCD Design Guidelines. The designer must comply with all requirements included in reference documents and described herein, unless specifically pre-approved otherwise by the City Engineer.

4.1 GENERAL

- a. The presence of an existing City drainage facility or natural channel does not imply that such is a suitable or adequate point of discharge. The Developer's Engineer shall confirm that downstream capacity is adequate. Where existing downstream facilities are inadequate to handle the increased flow from the proposed development, an alternate design is required. At no time, however, will direct discharge be permitted without adequately addressing stormwater quality and quantity. It must be shown that all existing or downstream drainage facilities are capable of handling the drainage from the development.
- b. 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.
- c. 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 City Engineer.
- d. Engineers retained by the Developer to design the works and services must consult with the City to determine what existing information may be of assistance to them.
- e. Critical and long-term infrastructure shall be designed carry a 20% increase in rainfall intensities for respective return period storms.
- f. It is the Developer's Engineer's responsibility to ensure that they obtain true and accurate elevations for the Development of the site.

4.2 STORM WATER CONTROL PLAN

- a. All Developments require a Stormwater Control Plan as outlined in MMCD, in addition to considering the following:
 - i. Detention storage volumes;
 - ii. Groundwater infiltration;
 - iii. Proposed lot grading;
 - iv. Meet the requirements of the City's OCP Watercourse Protection Development Permit Area policies when the Development is situated within those areas.

4.3 MINOR AND MAJOR SYSTEMS

- a. Each drainage system shall follow MMCD methodology except;
 - 4.3.1.a. The Minor system shall be capable of conveying runoff from the ten-year return period storm.
 - 4.3.2a. The Major system shall be capable of 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 City Engineer.

4.4 RUNOFF ANALYSIS

- a. Runoff analysis shall follow MMCD methodology.

4.5 SITE AND LOT GRADING

- a. Site and lot grading shall follow MMCD methodology.

4.6 MINIMUM BUILDING ELEVATIONS (MBE)

- a. MBE shall follow MMCD methodology.

4.7 RATIONAL METHOD

- a. Calculation of peak flow using the Rational Method shall follow MMCD methodology.

4.8 HYDROGRAPH METHOD

- a. Calculation of peak flow using the Hydrograph Method shall follow MMCD methodology.

4.9 MINOR SYSTEM DESIGN

- a. The Minor system design shall follow MMCD methodology with the following exceptions;
 - 4.9.1 Level of Service
 - a. The 1:10 year storm shall be used to design the minor drainage system without surcharging.
 - 4.9.2 Minimum Pipe Diameter
 - a. Minimum pipe diameter shall be as noted in Table 1.

Table 1– Minimum Pipe Diameter	
Description	Minimum Pipe Diameter (mm)
Storm Drainage Main	300
Catch Basin Leads/Double Catch Basin Leads	200/250

4.9.3 Curved Sewers

- a. Curved storm sewers shall only be considered in exceptional situations to the maximum indicated in MMCD provided a functioning tracer wire is installed over the curved section between manholes and shall require review on a case-by-case basis by the City Engineer

4.9.4 Service Connections

- a. Service connections may be permitted into manholes if inspection chambers installed to MMCD standards and shall include a backflow prevention device at property line.

4.10 MAJOR SYSTEM DESIGN

- a. The Major system design shall follow MMCD methodology.

4.11 RUNOFF CONTROLS

- a. All developments which are within the study boundary of a City approved stormwater or drainage plan must conform to the objectives and recommendations of the approved plan.
- b. If necessary, 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 Wet Detention Ponds.
- c. Additional Stormwater Source Controls are described in the publication Stormwater Source Control Design Guidelines 2012 (Metro Vancouver) 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 City:
 - i. Soakaway Manhole System, with design supported by a hydro-geotechnical engineering report concerning groundwater quality.

- d. Runoff controls are required to meet the objectives indicated in the sections entitled Storm Management and Discharge Rates and Quality of MMCD.
- e. 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.
- f. The use of French Drains shall only be permitted where the topography and soil conditions are proven adequate to the acceptance of the City Engineer. A soils report will be required to support the design.
- g. Infiltration-based runoff controls shall not be used in the following conditions:
 - i. 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;
 - ii. Areas where the post-development wet season groundwater table is less than 600 mm below the base of infiltration trenches;
 - iii. Areas where existing dwellings do not have foundation drains;
 - iv. Is within any Hazard Land Development Permit Area
- h. Wet Detention Ponds
 - Wet Detention Ponds shall meet MMCD requirements and the following design guidelines:
 - i. A geotechnical report is required to assess any slope stability risks and impacts to downstream lands related to groundwater recharge.
 - ii. 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 or prone to algae growth, dry detention ponds, pipe-based, stormwater detention systems may be considered, but only if approved by the City.
 - iii. 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 with adequate controls for beaver activity or other undesirable habitats established by resulting from simple wet detention pond designs. Aesthetics and multiple-use aspects should be emphasized throughout the design.
 - iv. All vegetation within the low-level pool, pond and surrounding buffer shall conform to the detention pond landscaping criteria.
 - v. The surface area of the permanent low-level pool should represent at least 1.0% of the total developed area.
 - vi. 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 City approved stormwater or drainage plan, refer to the appropriate plan for approved discharge rates.

- vii. 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.
- viii. 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.
- ix. Where identified by the City's OCP or as required by the City through the development approval process, pedestrian trails shall meet the City Trail Standards and include a 6.0m wide Right-of-Way around the perimeter of the pond with an all-weather surface. Pedestrian trail access shall not be greater than 10%.
- x. 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. 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 City.
- xi. A minimum of 4 signs shall be installed around the perimeter of the wet detention pond to meet the requirements of the City Signage Bylaw with the following wording:

DANGER!

Water levels are subject to sudden
change Please KEEP OUT

For information, call the City of Fernie - Operations Department- 250-423-6817

i. Infiltration Swales

Infiltration Swales shall meet the supplementary specifications 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 side-slope 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.

j. Rain Gardens

Rain Gardens shall meet 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.

k. Pervious Pavers

Pervious Pavers shall meet 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.
- ii. Partial Infiltration – designed so that some water may infiltrate into the underlying soil while the remainder is drained by perforated pipes
- iii. Partial Infiltration with Flow Restrictor – designed with a perforated pipe and flow restrictor located at the bottom of the drain rock reservoir.

l. Infiltration Trench

Infiltration Trench systems shall meet the supplementary specifications, Drawing, 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 drain rock 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.

m. Pollution Control Devices

The requirements for Pollution Control Device such as oil/grit separators and oil/water separators are stipulated in MMCD and must meet the following additional 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 pollution control device 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 watertight.

4.12 EROSION AND SEDIMENT CONTROL (ESC)

- a. An Erosion and Sediment Control Plan is required for all developments and shall follow MMCD methodology in addition to the following considerations;
 - i. The Developer's 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.
 - ii. All sediment control devices must be situated to provide ready access for cleaning and maintenance.
 - iii. Proposed sediment 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.
 - iv. A checklist for erosion and sediment controls is provided in Appendix A.

4.13 DRAINAGE PUMP STATIONS

- a. Drainage Pump Stations shall be minimized and other options should be thoroughly considered to avoid pump stations wherever practical. The designer should obtain approval from the City Engineer prior to commencing design. Should one be approved, design as per requirements stipulated under Sanitary Pump Station Design.

4.14 HYDROGEOLOGICAL INVESTIGATION

- a. A hydrogeological investigation shall follow MMCD methodology and is required for all hillside developments or when groundwater infiltration is proposed.

NATURAL WATERCOURSES

- b. All proposals for works affecting natural watercourses must be forwarded to and approved by the appropriate regulatory agencies including, but not limited to, the City of Fernie.

SECTION 5.0 – ROADS

The purpose of this section is to supplement and clarify existing design guidelines as described in MMCD Design Guidelines. The designer must comply with all requirements included in reference documents and described herein, unless specifically pre-approved otherwise by the City Engineer.

5.1 GENERAL

- 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 and MMCD.
- b. Engineers retained by the Developer to design the works and services must consult with the City Engineer to determine what existing information may be of assistance to them.
- c. The design and arrangement of roads shall consider snow removal and snow storage operations.
- d. Prior to commencing detailed design, the Developer's Engineer must consult with the City Engineer with respect to classification, road cross 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.

5.2 ROAD CLASSIFICATIONS

- a. MMCD summarizes the general requirements for each road classification which shall be read in conjunction with Schedule C Standard Drawings found within this Bylaw.

5.3 CROSS-SECTION ELEMENTS

- a. Road cross sections shall follow Schedule C Standard Drawings and MMCD unless otherwise approved by the City Engineer.
- b. 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 City Engineer.
- c. Locations and types of proposed Street trees should be included in the design for review and approval.
- d. Boulevards shall be graded to drain towards the curb at a minimum of 2.0% and a maximum of 8.0%
- e. The design of streetscape improvements shall consider the items listed below and approved by the City Engineer. 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. Shrubs and other plant materials;
 - iii. Paving stones in a variety of materials;
 - iv. Bioswales or infiltration trenches

5.4 ALIGNMENTS

- a. Road alignment criteria shall follow MMCD except in the following;

5.4.1 Grade

- a. Maximum road grades are as shown in MMCD for cold climate conditions which is generally 2% less than shown in Table 5.4.
- b. Maximum road grades not defined in MMCD shall be;

Table 5.4.1 – Maximum Roadway Grades	
Roadway Classification	Maximum Grade
Cul-de-sac:	
- Uphill	10%
- Downhill	8%
Cul-de-sac Bulb	6%

5.4.2 Vertical Curves

- a. Vertical curves shall be provided at all grade changes greater than 0.5%.

5.5 INTERSECTIONS

- a. Intersection design shall follow MMCD.

5.6 ROUNDABOUTS

- a. Roundabout design shall follow MMCD.

5.7 RAILWAY GRADE CROSSINGS

- a. Railway grade crossings design shall follow MMCD.

5.8 TRAFFIC CONTROL DEVICES

- a. Traffic control devices, signs and pavement markings are to be designed in accordance with the current edition of the TAC Manual of Uniform Traffic Control Devices for Canada.

5.9 CUL-DE-SACS

- 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.
- b. Maximum length of cul-de-sac streets to be consistent with MMCD. With special approval from the City Engineer, maximum length may be 250 m when there is alternate access provided (e.g., emergency access road).
- 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 and hammer heads will not be accepted.

5.10 TRAFFIC BARRIERS

- a. Traffic barriers shall follow TAC Guidelines.

5.11 SIDEWALK AND PEDESTRIAN CROSSINGS

- 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.

- b. The minimum width for concrete sidewalk shall be as per the typical road cross sections shown in schedule C, excluding the curb. At occasional locations where conflicts may occur (such as power poles, hydrants, signs, etc.) the width can reduce as approved by the City Engineer.

5.12 BIKEWAYS

- a. Bikeway design shall follow MMCD.
- b. Shall incorporate Considerations from the City of Fernie Active Transportation Master Plan.

5.13 TRANSIT FACILITIES

- a. Transit facility design shall follow MMCD.

5.14 DRIVEWAYS

- a. All lots must be provided with an access driveway in accordance with MMCD except in the following;

5.14.2 Number of Driveways:

- a. For Rural, Commercial, Industrial, Institutional, Comprehensive and Multifamily developments, upon the demonstrated need, the City Engineer may approve more than one access but not more than one access for every 25m of adjacent road frontage.

5.14.3 Driveway Location and Widths

- a. The edge of residential driveways adjacent to interior lot lines shall be no closer than 2.0m.
- b. Provision of adequate sight distance for all driveways should be considered in accordance with TAC Geometric Design Guidelines for Canadian Roads.
- c. Maximum width of driveway is 6.0 m for residential driveways and 9.0m for all other driveways.
- d. 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.

5.14.4 Driveway Grades:

- a. Between the back of curb (or road edge in the absence of a curb) and property line, the maximum driveway grade is 8%; and,
- b. For driveways with grades over 8%, cross section drawings are required every 5m along the driveway.
- c. The transition grades into private property shall follow MMCD.

- d. Driveway grades are to be set such that minimum cover, as described in other sections of the Bylaw, is maintained over utilities within the boulevard.

5.15 CLEARANCES

- a. Clearances shall follow MMCD.

5.16 UNDERGROUND UTILITY LOCATIONS

- a. Underground utility locations shall follow MMCD and Schedule C Standard Drawings.

5.17 PAVEMENT STRUCTURES

- a. Pavement structure design shall follow MMCD and confirmed adequate for the site by a qualified Geotechnical Engineer.

5.18 BRIDGES

- a. Bridge design shall follow MMCD and prepared by a qualified Structural Engineer.

5.19 HILLSIDE STANDARDS

- a. Road design in hillside areas shall follow MMCD. Maximum road grades cannot be increased without special considerations for cold climate conditions.

5.20 TRAFFIC CALMING

- a. Traffic calming measures shall be employed as appropriate and at the direction and approval of the City Engineer to maximize road safety and are to be designed in accordance with MMCD.

5.21 STREET PARKING

- a. Design of street parking is to follow MMCD.
- b. Allocation of street parking is to follow the Standard Drawings and in consultation with the City Engineer.

5.22 TRAILS

- a. Trails shall conform to the criteria in the City of Fernie Trails Master Plan, the Standard Drawings and Schedule D of the OCP.

SECTION 6.0 – ROADWAY LIGHTING

The purpose of this section is to supplement and clarify existing design guidelines as described in MMCD Design Guidelines. The designer must comply with all requirements included in reference documents and described herein, unless specifically pre-approved otherwise by the City Engineer.

6.1 GENERAL

- a. Documents and drawings are to be submitted to the City Engineer for approval. The City'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
- b. All power wiring and communications cabling in new subdivisions 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 City Engineer.
- c. 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.
- d. Developer shall be required to submit 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 City Engineer.

6.2 CODES, RULES, STANDARDS AND PERMITS

- a. Street lighting systems shall be designed as per MMCD.

6.3 ROADWAY AND PEDESTRIAN CRITERIA

- a. The criteria shall follow MMCD methodology.

6.4 LIGHTING MEASUREMENTS

- a. The design shall follow MMCD methodology.

6.5 VARIABLE LIGHTING CRITERIA

- a. Lighting criteria shall follow MMCD except the following:

6.5.1 Light Sources and Luminaires.

- a. The Luminaire shall be chosen from Approved Products List.

6.6 STREET LIGHTING

- a. Street lighting levels shall follow MMCD methodology.

6.7 SIDEWALK LIGHTING

- a. Sidewalk lighting shall follow MMCD methodology.

6.8 INTERSECTION LIGHTING

- a. Intersection lighting shall follow MMCD methodology.

6.9 CROSSWALK LIGHTING

- a. Crosswalk lighting shall follow MMCD methodology.

6.10 WALKWAYS

- a. Walkway lighting shall follow MMCD methodology.

6.11 ROUNDABOUT LIGHTING

- a. Roundabout lighting shall follow MMCD methodology.

6.12 TUNNEL LIGHTING

- a. Tunnel lighting shall follow MMCD methodology.

6.13 POLES

- a. Pole design shall follow MMCD methodology and the following considerations:
 - i. All poles must be hot dip galvanized, and may require powder coat finish if directed so by the City Engineer at the beginning of the project;
 - ii. All poles shall be located within a maximum of 0.6m from property corners.

6.14 POLE FOUNDATIONS

- a. Pole foundations shall follow MMCD methodology.

6.15 LUMINAIRES

- a. Luminaires shall follow MMCD requirements and shall be consistent with the Approved Products List

6.16 POWER SUPPLY AND DISTRIBUTION

- a. Power Supply and Distribution shall follow MMCD requirements except the following:
- i. Wiring to be stranded copper with RWU90 insulation.
 - ii. The Designer shall refer to Section 10 of MMCD Design Guidelines, for further clarifications if Adaptive lighting systems are proposed for a project.

6.17 DESIGN

- a. Lighting Design shall follow MMCD methodology and additional requirements stipulated below.
- i. Decorative street lighting may be required for commercial and residential subdivisions. Designer shall use light standards from City of Fernie Standard Drawings FRN-E01 to FRN-E03
 - ii. Minimum cover requirements for conduits shall be as follows.
 - 1. 750mm for conduit designed under curb or sidewalk
 - 2. 900mm for conduit designed under non-vehicular area
 - 3. 1200mm for conduit designed under all road, lane, and industrial and commercial crossings
 - iii. 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.
 - iv. All electrical utilities shall be installed in accordance with the standard road cross sections unless otherwise approved by the City Engineer.
 - v. 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.
 - vi. 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 centerline of the road-way.
 - vii. All electrical surface and sub-surface appurtenances shall be designed and located a minimum of 1.0 m from other street fixtures, landscaping and infrastructure. Electrical appurtenances must not be located directly above water mains or water service connections.

- viii. Cable design shall consider a minimum of eight (8) streetlights per electrical connection to accommodate future extension of the street lighting system.
- ix. All wiring and conductors shall be RWU90 stranded copper.

DRAFT - April 15, 2024

SCHEDULE C

**SUBDIVISION AND DEVELOPMENT SERVICING BYLAW NO. 2514
2024**

STANDARD DRAWINGS

SCHEDULE C

STANDARD DRAWINGS

Table 1.1 identifies specific City of Fernie Standard Drawings which take precedence over MMCD drawings. Specific clarification to MMCD drawings is provided in Table 1.2.

Table 1.1 City of Fernie Standard Drawings

Drawing Number	Drawing Name
GENERAL DETAILS	
FRN – G01	SERVICE CONNECTION CARD TEMPLATE
STORM AND SANITARY SEWERS	
FRN – S01	INTENSITY DURATION FREQUENCY IDF CURVES
FRN – S02	STANDARD CATCHBASIN DETAIL
FRN – S03	BARRIER CURB AND GUTTER AT CATCH BASIN
FRN – S04	TYPICAL PERFORATED DRAIN FOR LOWERING WATER TABLE
FRN – S05	TYPICAL LOT GRADING DETAIL
FRN – S06	MR-10 MANHOLE INSPECTION PORT LID
WATERWORKS	
FRN – W01	STANDARD WATERMAIN REALIGNMENT
FRN – W02	WATER, SEWER, AND STORM SERVICE IN COMMON TRENCH
CONCRETE AND MISCELLANEOUS DETAILS	
ROADWORKS	
FRN – R01	URBAN LOCAL ROAD TYPICAL SECTION
FRN – R02	URBAN COLLECTOR ROAD TYPICAL SECTION
FRN – R03	RURAL LOCAL ROAD TYPICAL SECTION
FRN – R04	RURAL COLLECTOR ROAD TYPICAL SECTION
FRN – R05	CUL-DE-SAC BULB LAYOUT – WITH SNOW STORAGE
FRN – R06	CUL-DE-SAC BULB LAYOUT – WITHOUT SNOW STORAGE
FRN – R07	WALKWAY, EMERGENCY ACCESS AND LANE

ELECTRICAL

- FRN – E01 DECORATIVE STREET LIGHT WITH HERITAGE ARM
 FRN – E02 DECORATIVE STREET LIGHT WITH 10' ARM AND PENDANT LUMINAIRE
 FRN – E03 DECORATIVE STREET LIGHT WITH 2' ARM AND PENDANT LUMINAIRE

Table 1.2 Clarification to MMCD drawings

Drawing Number	Drawing Name	Clarification
----------------	--------------	---------------

GENERAL DETAILS

STORM AND SANITARY SEWERS

- | | | |
|----|--|---|
| S4 | INSIDE DROP MANHOLE
SANITARY SEWER
SERVICE
CONNECTION | 1. ONLY ALTERNATIVE
ARRANGEMENT IS ACCEPTABLE
2. INSPECTION CHAMBER TO BE
LOCATED ON PROPERTY LINE |
| S7 | | 1. CAST IRON LID TO BE TRAFFIC
LOAD RATED – SEE SCHEDULE E
APPROVED PRODUCTS LIST |
| | INSPECTION CHAMBER FOR
100 TO 200 SANITARY
SEWER
CONNECTION | 2. SERVICE TO EXTEND TO 3.0 m
PAST PROPERTY LINE |
| S9 | | |

WATERWORKS

- | | | |
|-----|--|--|
| W2a | WATER SERVICE CONNECTION-
SERVICE BOX | 1. CAST IRON LID TO BE TRAFFIC
LOAD RATED – SEE SCHEDULE E
APPROVED PRODUCTS LIST
2. SERVICE TO EXTEND TO 3.0 m
PAST PROPERTY LINE |
|-----|--|--|

CONCRETE AND MISCELLANEOUS DETAILS

ROADWORKS

ELECTRICAL

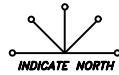
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DRAFT - April 15, 2024

CITY OF FERNIE PROPERTY SERVICE CONNECTION RECORD

HOUSE # STREET OR AVENUE LOT # BLOCK # PLAN # NAME OF DEVELOPMENT AREA

RECORD DRAWING



SHOW STREET NAMES AND ALL UTILITIES INSTALLED

REMARKS ON OTHER UTILITES ENCOUNTERED

WATER

INSTALLATION DATE

DAY MONTH YEAR

SERVICE SIZE

SERVICE TYPE

DIST. FROM PL TO MAIN

DIST. PL TO CURBSTOP

DIST FROM _ _ PL

TYPE OF CURB BOX

TYPE OF SADDLE

MAIN SIZE

MAIN TYPE

TYPE OF SURFACE

DEPTH OF WATER TABLE

SOIL LOG

SANITARY SEWER

INSTALLATION DATE

DAY MONTH YEAR

SERVICE SIZE

SERVICE TYPE

DIST. FROM PL TO MAIN

RISER HEIGHT

FITTING AT MAIN

DEPTH AT PL

DISTANCE FROM DOWNSTREAM M.H. TO FITTING ON MAIN

DIST. FROM PL

DIST. PL TO INSPECTION PORT

MAIN SIZE

MAIN TYPE

TYPE OF SURFACE

DEPTH OF WATER TABLE

SOIL LOG

STORM SEWER

INSTALLATION DATE

DAY MONTH YEAR

SERVICE SIZE

SERVICE TYPE

DIST. FROM PL TO MAIN

DIST FROM _ _ PL

TYPE OF SADDLE

MAIN SIZE

MAIN TYPE

DEPTH OF WATER TABLE

GENERAL COMMENTS

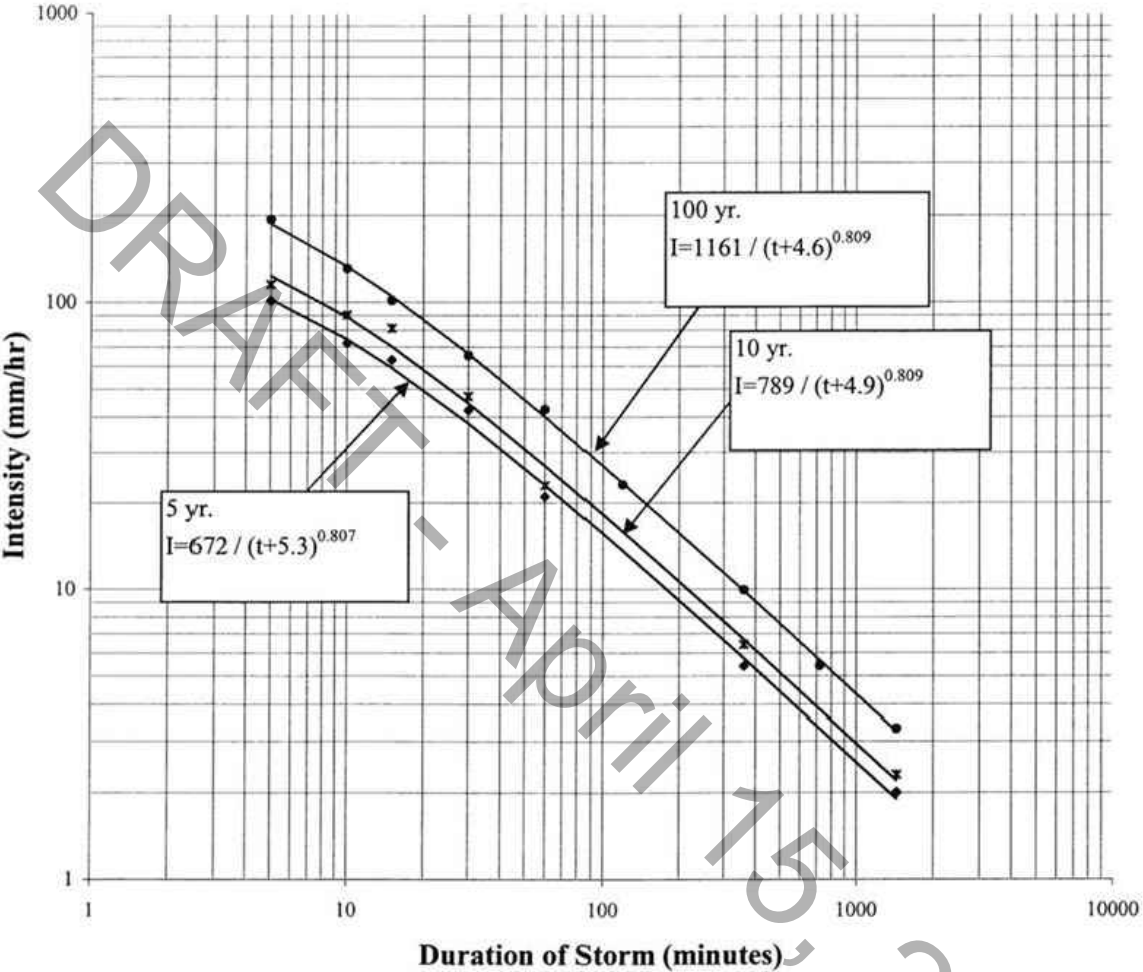


SERVICE CARD TEMPLATE

01	07/23	ISSUED FOR APPROVAL	RF	AB
00	02/17	DRAFT BYLAW SUBMISSION	JN	
NO.	DATE	REVISIONS	BY	APP'D

DATE	SCALE	CAD FILE	DWG. No.
FEB 2017	NTS	FRN_G01	FRN-G01

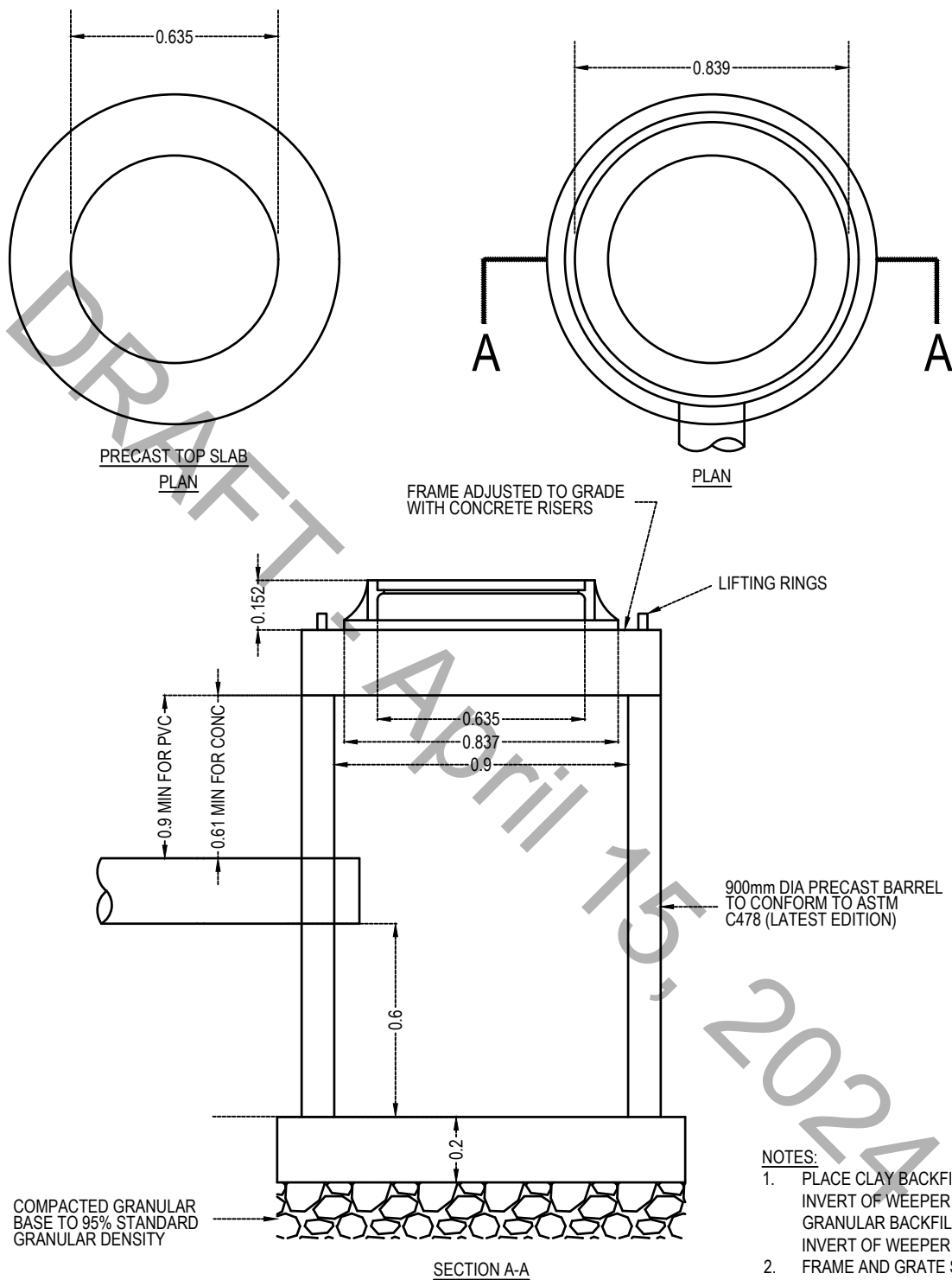
City of Fernie - Storm Intensity Duration Frequency



01	07/23	ISSUED FOR APPROVAL	RF	AB	
00	02/17	DRAFT BYLAW SUBMISSION	JN		
NO.	DATE	REVISIONS	BY	APP'D	

INTENSITY DURATION FREQUENCY
IDF CURVES

DATE	SCALE	CAD FILE	DWG. No.
FEB 2017	NTS	FRN_S01	FRN-S01



UNITS ARE IN METERS
UNLESS OTHERWISE NOTED

NOTES:

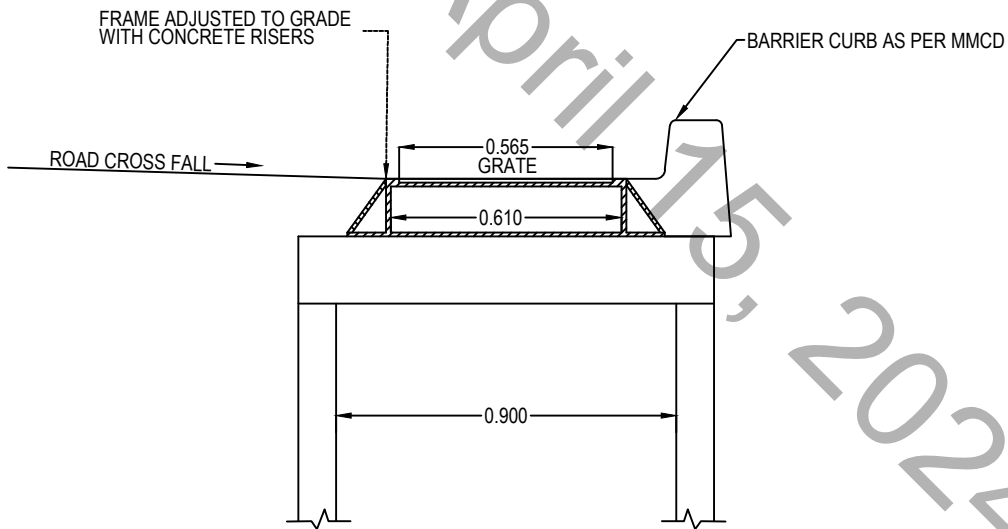
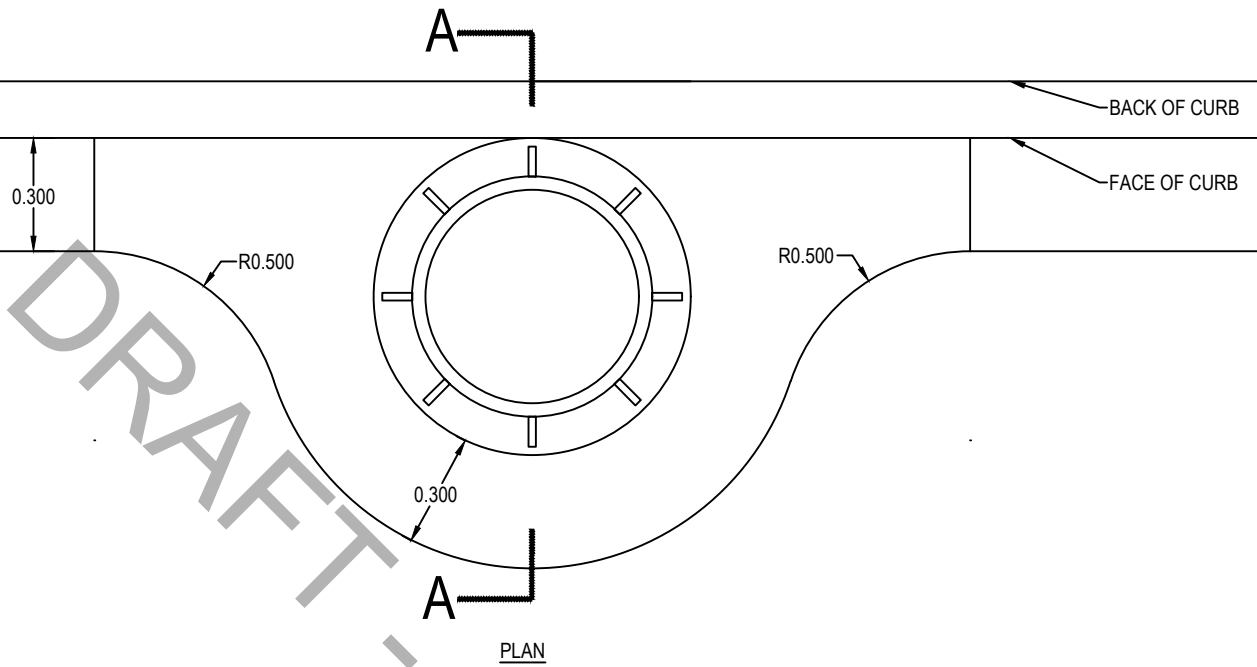
1. PLACE CLAY BACKFILL BELOW INVERT OF WEEPER HOLES AND GRANULAR BACKFILL ABOVE INVERT OF WEEPER HOLES.
2. FRAME AND GRATE SHALL BE AS PER SCHEDULE E APPROVED PRODUCTS LIST.



STANDARD CATCHBASIN DETAIL

01	07/23	ISSUED FOR APPROVAL	RF	AB	
00	02/17	DRAFT BYLAW SUBMISSION	JN		
NO.	DATE	REVISIONS	BY	APP'D	

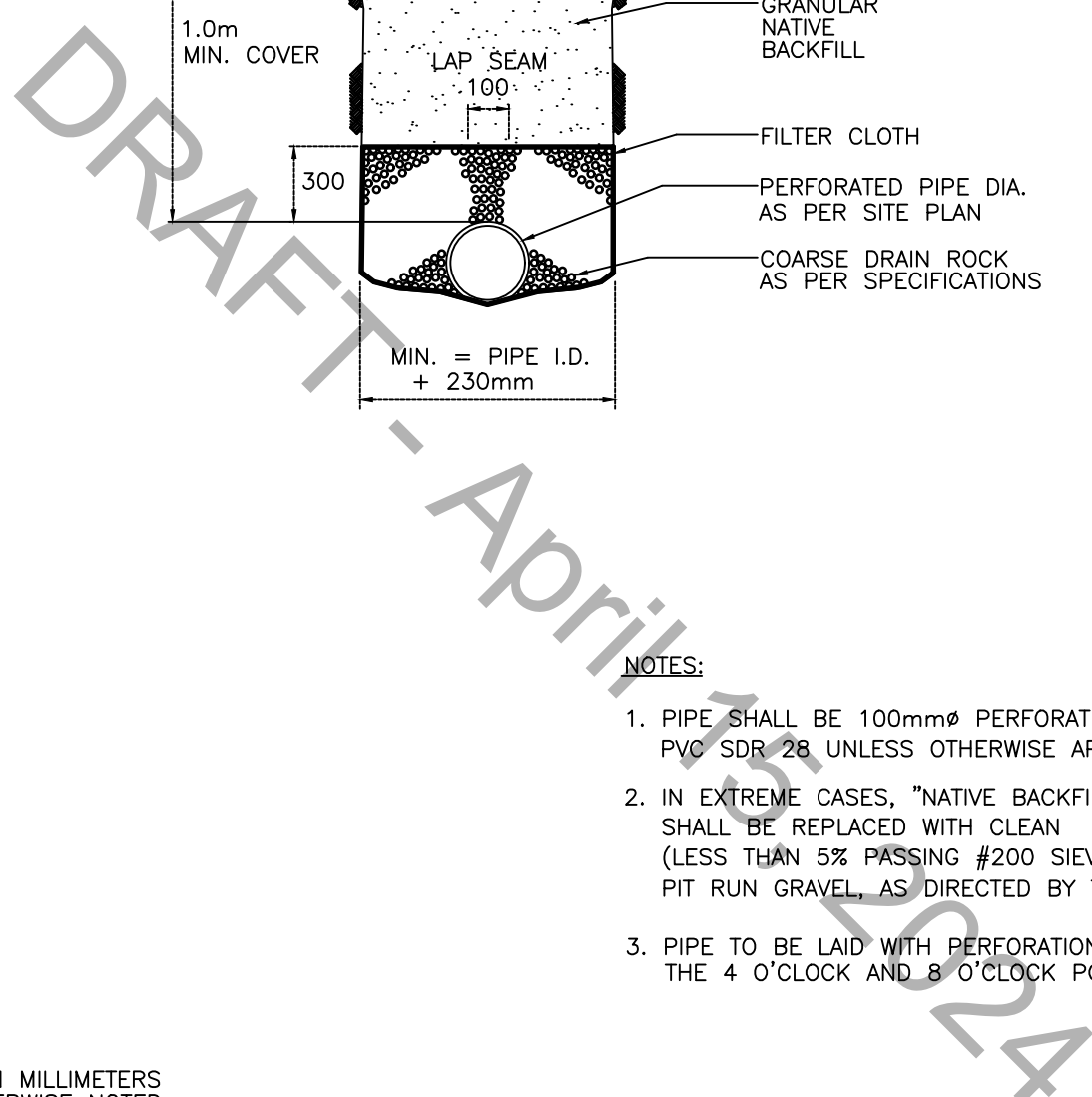
DATE	SCALE	CAD FILE	DWG. No.
FEB 2017	1:20	FRN_S02	FRN-S02



01	07/23	ISSUED FOR APPROVAL	RF	AB	
00	02/17	DRAFT BYLAW SUBMISSION	JN		
NO.	DATE	REVISIONS	BY	APP'D	

**BARRIER CURB AND GUTTER AT
CATCH BASIN**

DATE	SCALE	CAD FILE	DWG. No.
FEB 2017	1:20	FRN_S03	FRN-S03



1. PIPE SHALL BE 100mmØ PERFORATED PVC SDR 28 UNLESS OTHERWISE APPROVED.
2. IN EXTREME CASES, "NATIVE BACKFILL" SHALL BE REPLACED WITH CLEAN (LESS THAN 5% PASSING #200 SIEVE) PIT RUN GRAVEL, AS DIRECTED BY THE ENGINEER.
3. PIPE TO BE LAID WITH PERFORATIONS DOWN IN THE 4 O'CLOCK AND 8 O'CLOCK POSITIONS.

The logo for the City of Fernie, British Columbia, featuring the word "FERNIE" in a large, stylized, black serif font. Below it, the words "CITY OF FERNIE" and "BRITISH COLUMBIA" are written in a smaller, black, sans-serif font.

					TYPICAL PERFORATED DRAIN FOR LOWERING GROUNDWATER TABLE
01	07/23	ISSUED FOR APPROVAL	RF	AB	
00	02/17	DRAFT BYLAW SUBMISSION	JN		
DATE		SCALE		CAD FILE	DWG. No.
FEB 2017		NTS		FRN_S04	FRN-S04
NO.	DATE	REVISIONS	BY	APP'D	

DRIVEWAY/ACCESS LOCATIONS

MINIMUM SET BACKS
AS PER ZONEING

MAX VARIANCE ABOVE
MINIMUM FLOOR ELEV.

PROP. C.B. LOCATION AND
DESIGN TOP OF FRAME ELEV.

PROP. GRD. ELEV'S

PROP. SWALE BY
BUILDER (MINIMUM
GRADE 1%) SEE DETAIL

STORM INV @ P/L
SANITARY INV @ P/L
GROUND WATER ELEVATIONS IF AVAILABLE

MIN. BLDG. ELEV
(SEE NOTE BELOW)

ORIGINAL GRD. ELEV.

FINISHED GRD. ELEV.

EX. GRD. CONTOUR

DIRECTION OF
OVERLAND DRAINAGE

SHADED AREAS REPRESENT
LOCATIONS WHERE FILL
EXCEEDS 0.5m IN DEPTH

LAWN DRAIN AND SODDED SWALES
WITHIN ALL PRIV. EASEMENTS
CONSTRUCTED BY CONTRACTOR.
LAWN DRAIN SIZE AS NOTED
SWALE AS DETAILED

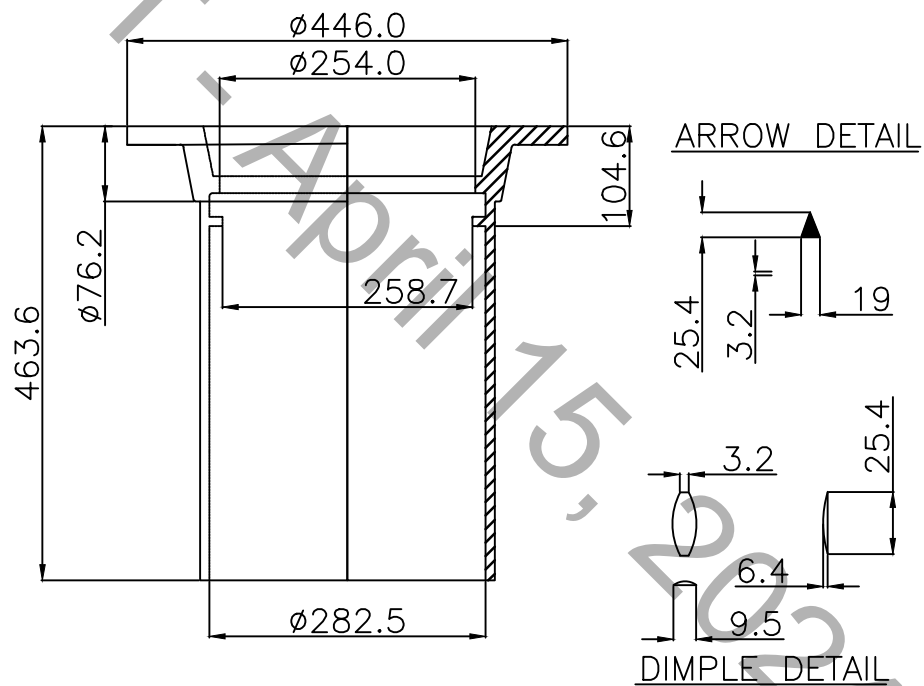
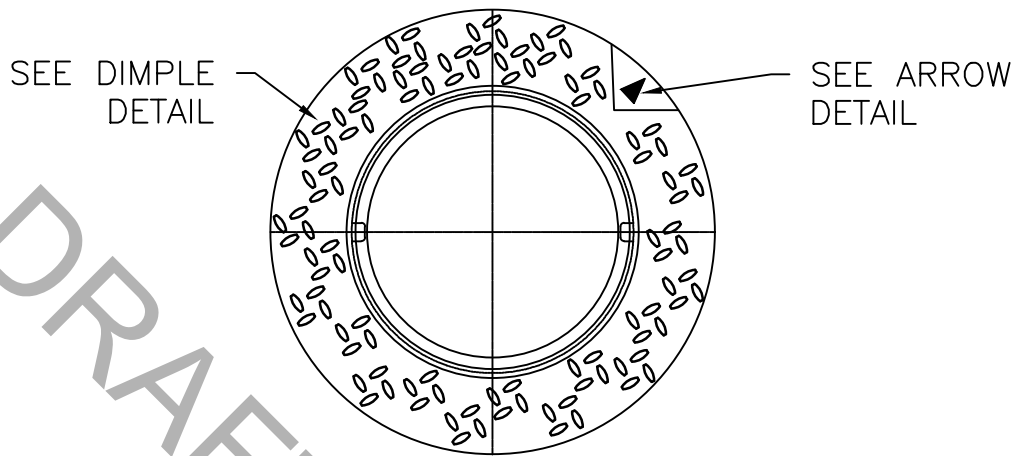
MBE DENOTES: (ELEV IN BOX)
MIN. TOP OF CONCRETE SLAB ELEVATION OR
UNDERSIDE OF FLOOR JOISTS ELEVATION
IN CRAWLSPACE. CRAWLSPACES SHALL NOT
BE USED FOR STORAGE OF GOODS OR
EQUIPMENT DAMAGED BY FLOOD WATERS.
REFERENCE FLOOD CONSTRUCTION LEVEL/LOT



01	07/23	ISSUED FOR APPROVAL	RF	AB	
00	02/17	DRAFT BYLAW SUBMISSION	JN		
NO.	DATE	REVISIONS	BY	APP'D	

TYPICAL LOT GRADING DETAIL

DATE	SCALE	CAD FILE	DWG. No.
FEB 2017	NTS	FRN_S05	FRN-S05



NOTES:

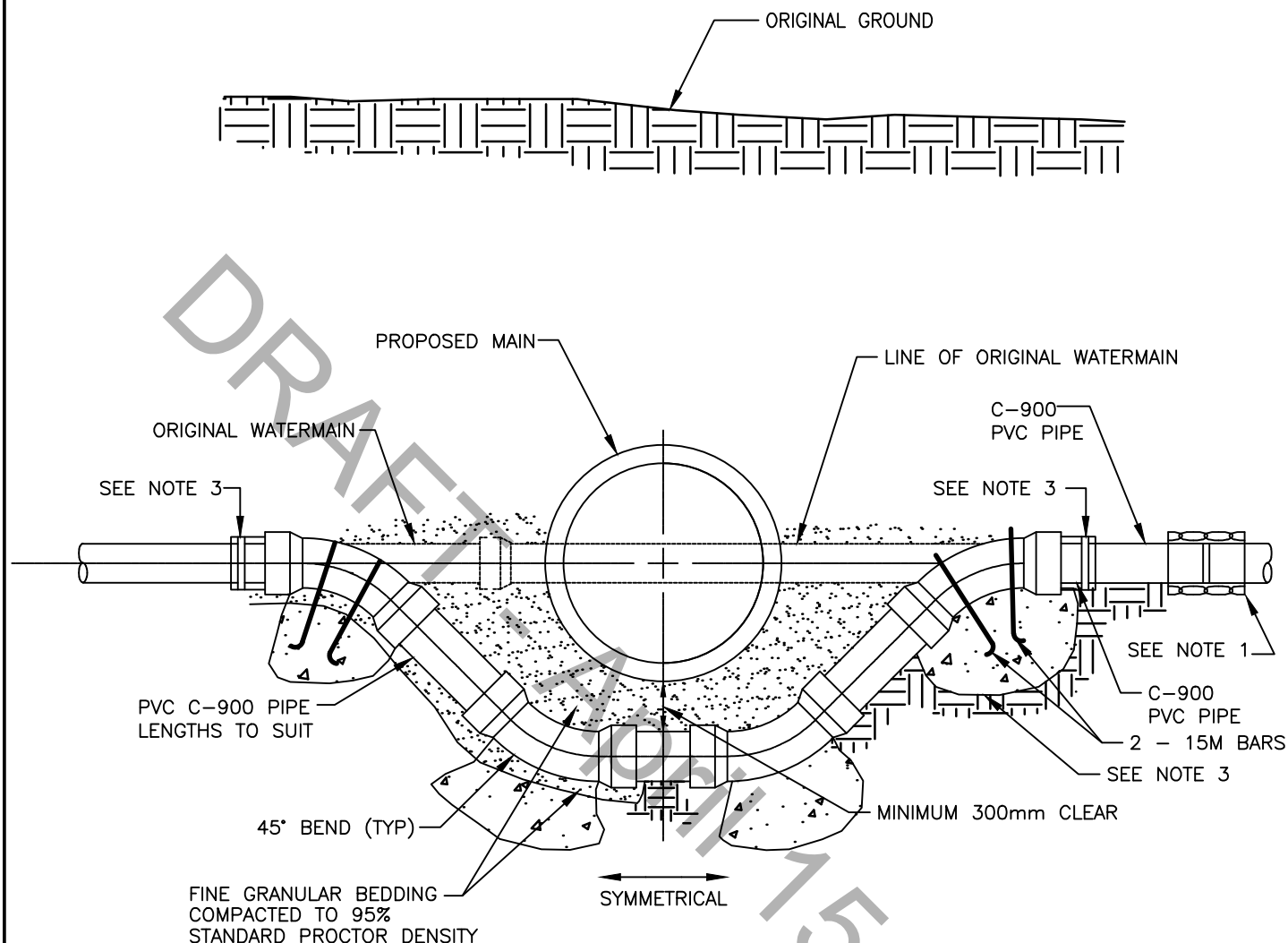
UNITS ARE IN MILLIMETERS
UNLESS OTHERWISE NOTED



01	07/23	ISSUED FOR APPROVAL	RF	AB	
00	01/23	DRAFT BYLAW SUBMISSION	CH		
NO.	DATE	REVISIONS	BY	APP'D	

MR-10 MANHOLE INSPECTION
PORT LID

DATE	SCALE	CAD FILE	DWG. No.
FEB 2017	NTS	FRN_S06	FRN-S06



NOTES:

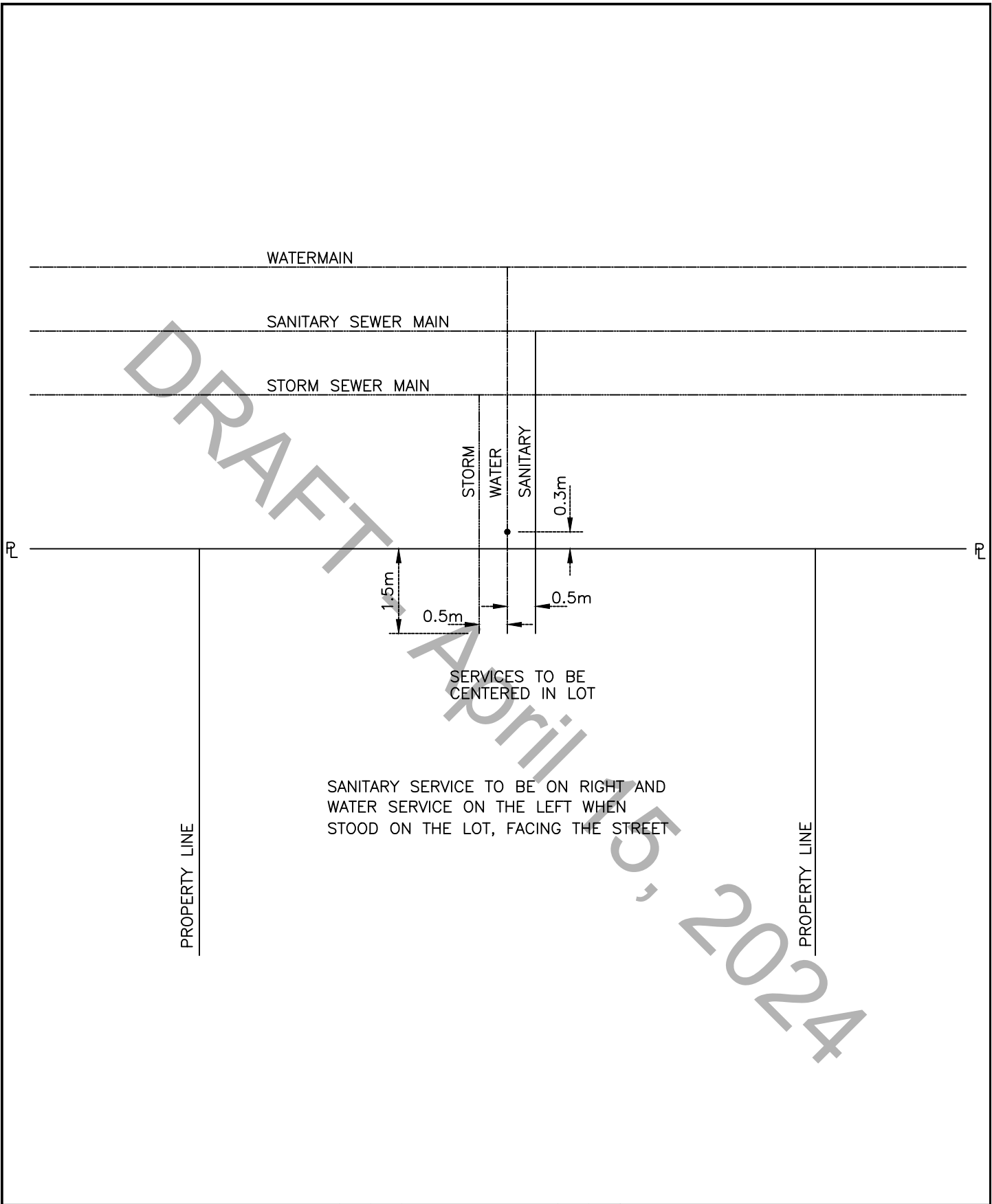
1. APPROVED STAINLESS STEEL REPAIR CLAMPS MAY BE USED TO FACILITATE CONNECTION TO EXISTING WATERMAINS.
2. CONNECTIONS SHALL BE LEFT EXPOSED UNTIL WATERMAIN JOINTS ARE PROVEN DRIP-TIGHT.
3. SERIES 1390 UNIFLANGE JOINT RESTRAINER OR APPROVED EQUAL.



01	07/23	ISSUED FOR APPROVAL	RF	AB	
00	02/17	DRAFT BYLAW SUBMISSION	JN		
NO.	DATE	REVISIONS	BY	APP'D	

**STANDARD WATERMAIN
REALIGNMENT**

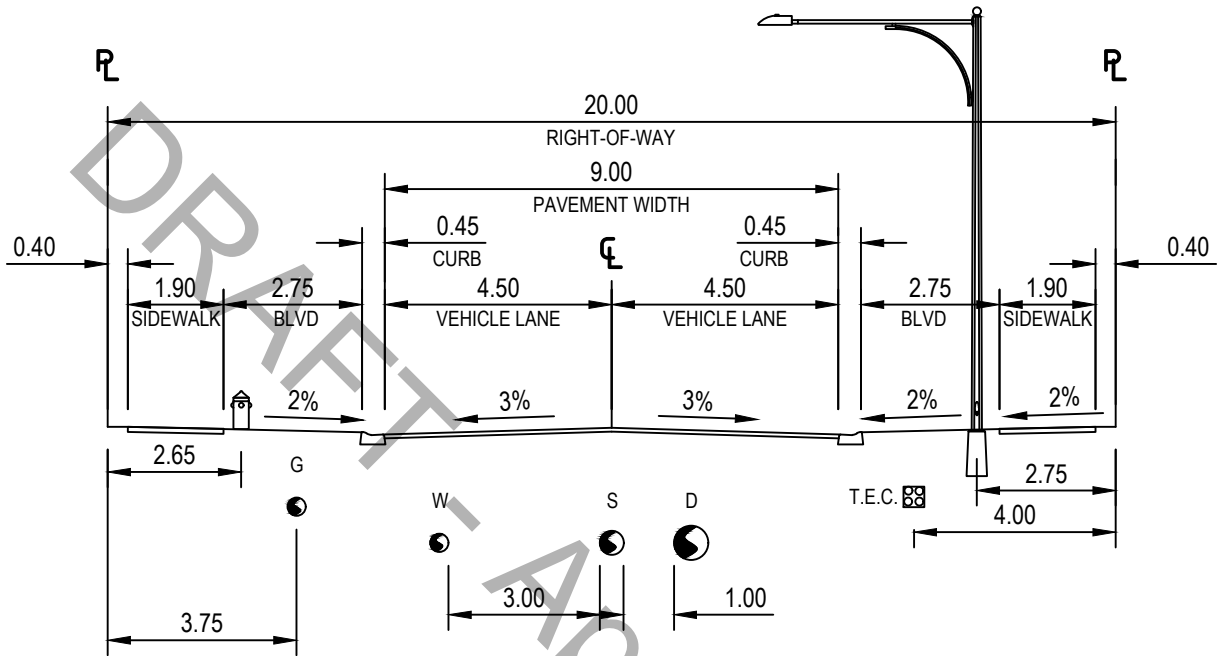
DATE	SCALE	CAD FILE	DWG. No.
FEB 2017	NTS	FRN_W01	FRN-W01



01	07/23	ISSUED FOR APPROVAL	RF	AB	
00	02/17	DRAFT BYLAW SUBMISSION	JN		
NO.	DATE	REVISIONS	BY	APP'D	

WATER SEWER AND STORM
SERVICE IN COMMON TRENCH

DATE	SCALE	CAD FILE	DWG. No.
FEB 2017	NTS	FRN_W02	FRN-W02



LEGEND:

CL	CENTRELINE
PL	PROPERTY LINE
BLVD	BOULEVARD
C	CABLE
D	STORM SEWER
E	ELECTRICAL
G	GAS
S	SANITARY SEWER
T	TELEPHONE
W	WATER

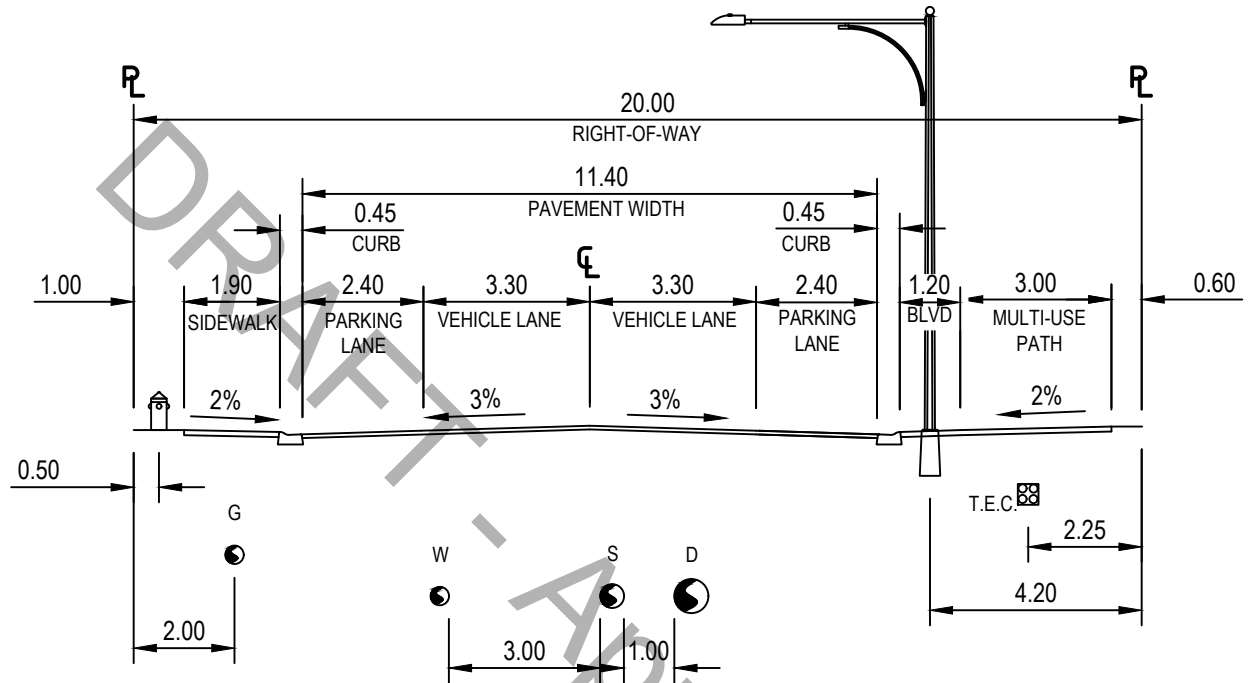
NOTES:

1. ROAD GRADE FROM CENTRELINE TO EDGE OF PAVEMENT IS 3%.
2. BARRIER / ROLLOVER CURB AND GUTTER AS PER MMCD STD. DWG. C4.
3. SIGNAGE TO BE LOCATED INSIDE BOULEVARD.



URBAN LOCAL ROAD

00	01/23	DRAFT BYLAW SUBMISSION	CH		DATE	APR 2017	SCALE	1:150	CAD FILE	FRN_R01	DWG. No.	FRN-R01
NO.	DATE	REVISIONS	BY	APP'D								



LEGEND:

CL	CENTRELINE
PL	PROPERTY LINE
BLVD	BOULEVARD
C	CABLE
D	STORM SEWER
E	ELECTRICAL
G	GAS
S	SANITARY SEWER
T	TELEPHONE
W	WATER

NOTES:

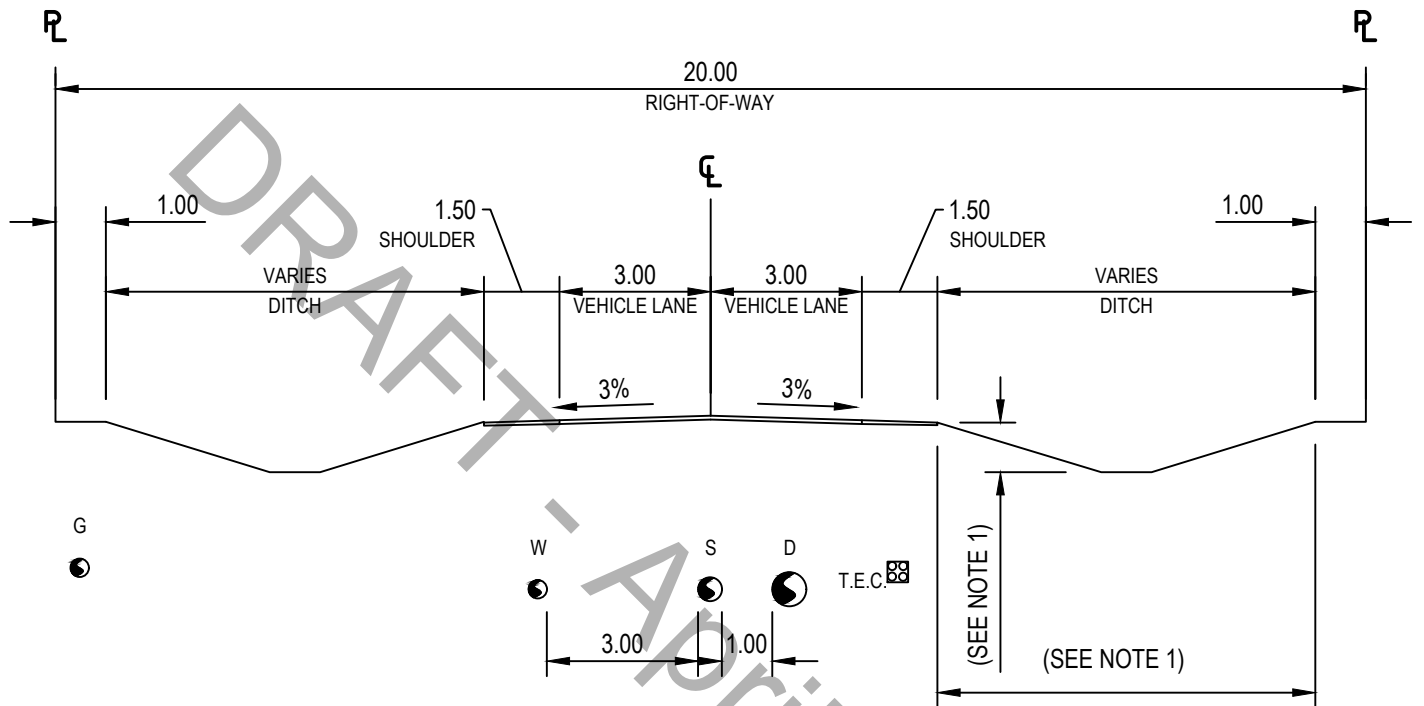
1. HYDRANTS SHALL BE LOCATED ON OPPOSITE SIDE OF STREET AS MULTI-USE PATH.
2. ROAD GRADE FROM CENTRELINE TO EDGE OF PAVEMENT IS 3%.
3. BARRIER / ROLLOVER CURB AND GUTTER AS PER MMCD STD. DWG. C4.
3. SIGNAGE TO BE LOCATED INSIDE BOULEVARD.



URBAN COLLECTOR

01	07/23	ISSUED FOR APPROVAL	RF	AB
00	01/23	DRAFT BYLAW SUBMISSION	CH	
NO.	DATE	REVISIONS	BY	APP'D

DATE	SCALE	CAD FILE	DWG. No.
APR 2017	1:150	FRN_R02	FRN-R02



LEGEND:

CL CENTRELINE
 PL PROPERTY LINE
 BLVD BOULEVARD
 C CABLE
 D STORM SEWER
 E ELECTRICAL
 G GAS
 S SANITARY SEWER
 T TELEPHONE
 W WATER

NOTES:

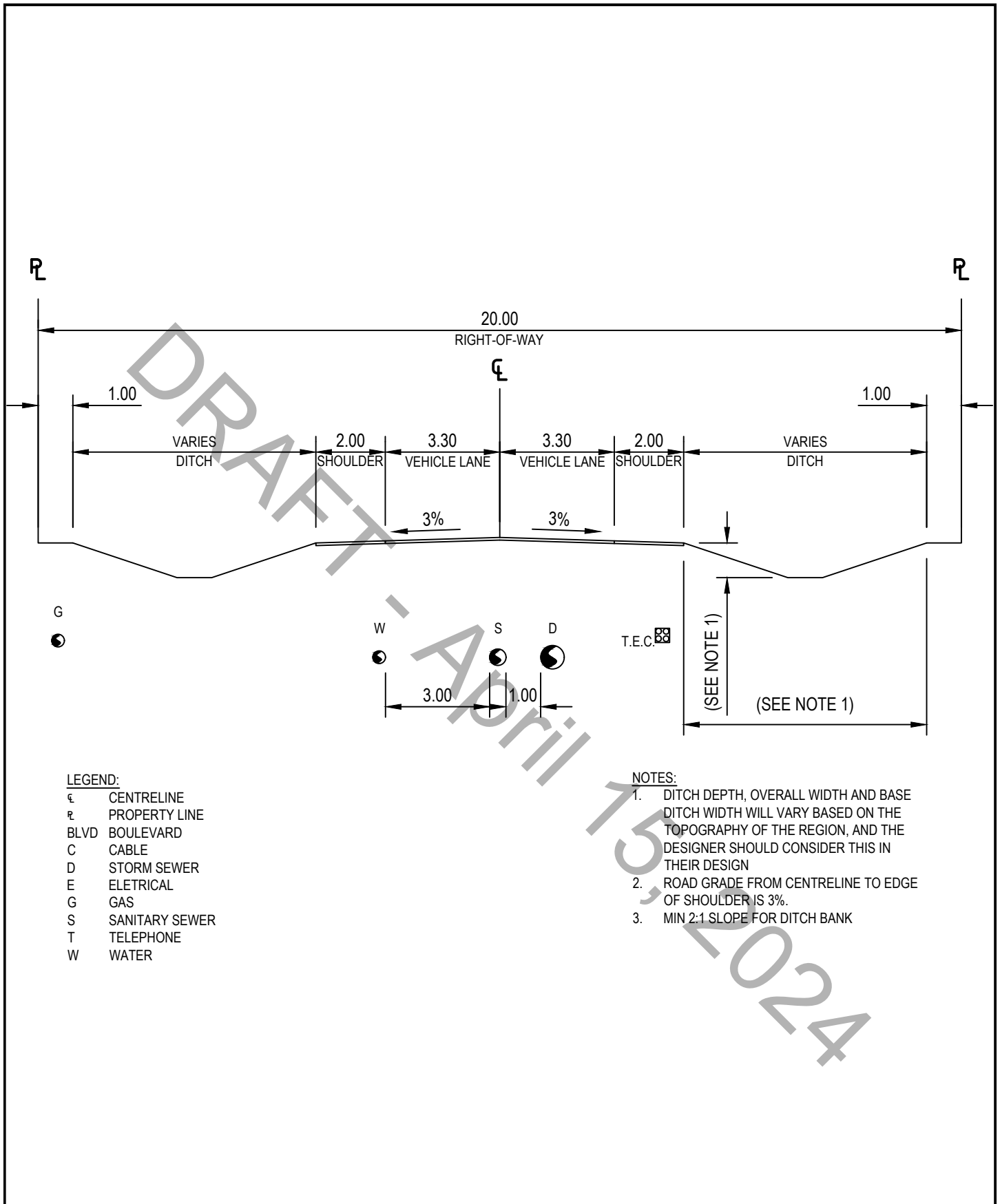
1. DITCH DEPTH, OVERALL WIDTH AND BASE DITCH WIDTH WILL VARY BASED ON THE TOPOGRAPHY OF THE REGION, AND THE DESIGNER SHOULD CONSIDER THIS IN THEIR DESIGN
2. ROAD GRADE FROM CENTRELINE TO EDGE OF SHOULDER IS 3%.
3. MIN 2:1 SLOPE FOR DITCH BANK



01	07/23	ISSUED FOR APPROVAL	RF	AB	
00	01/23	DRAFT BYLAW SUBMISSION	CH		
NO.	DATE	REVISIONS	BY	APP'D	

RURAL LOCAL ROAD

DATE	SCALE	CAD FILE	DWG. No.
APR 2017	1:150	FRN_R03	FRN-R03



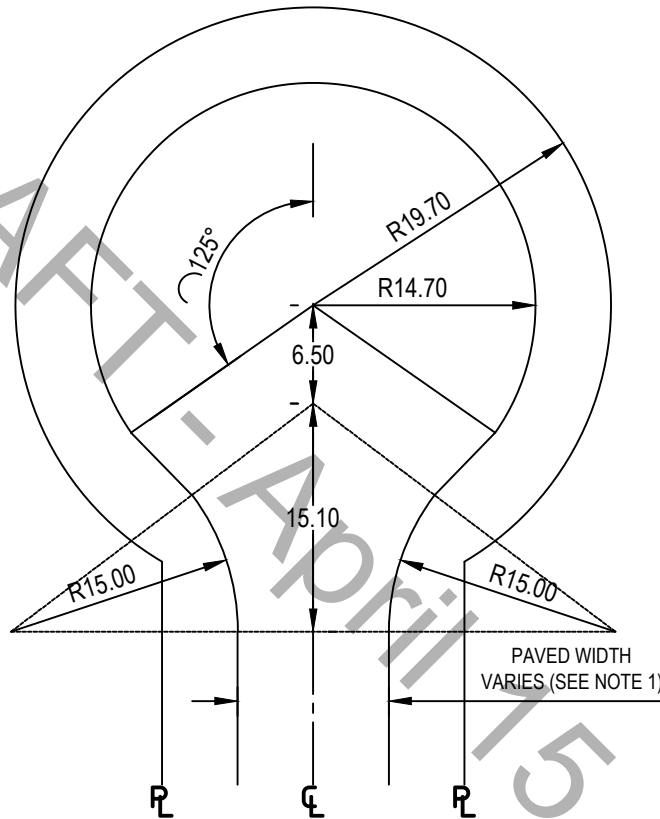
- LEGEND:**
- CL CENTRELINE
 - PL PROPERTY LINE
 - BLVD BOULEVARD
 - C CABLE
 - D STORM SEWER
 - E ELETRICAL
 - G GAS
 - S SANITARY SEWER
 - T TELEPHONE
 - W WATER

- NOTES:**
1. DITCH DEPTH, OVERALL WIDTH AND BASE DITCH WIDTH WILL VARY BASED ON THE TOPOGRAPHY OF THE REGION, AND THE DESIGNER SHOULD CONSIDER THIS IN THEIR DESIGN
 2. ROAD GRADE FROM CENTRELINE TO EDGE OF SHOULDER IS 3%.
 3. MIN 2:1 SLOPE FOR DITCH BANK



01	07/23	ISSUED FOR APPROVAL	RF	AB	
00	01/23	DRAFT BYLAW SUBMISSION	CH		
NO.	DATE	REVISIONS	BY	APP'D	

RURAL COLLECTOR							
DATE	SCALE	CAD FILE	DWG. No.				
APR 2017	1:150	FRN_R04	FRN-R04				



NOTES:

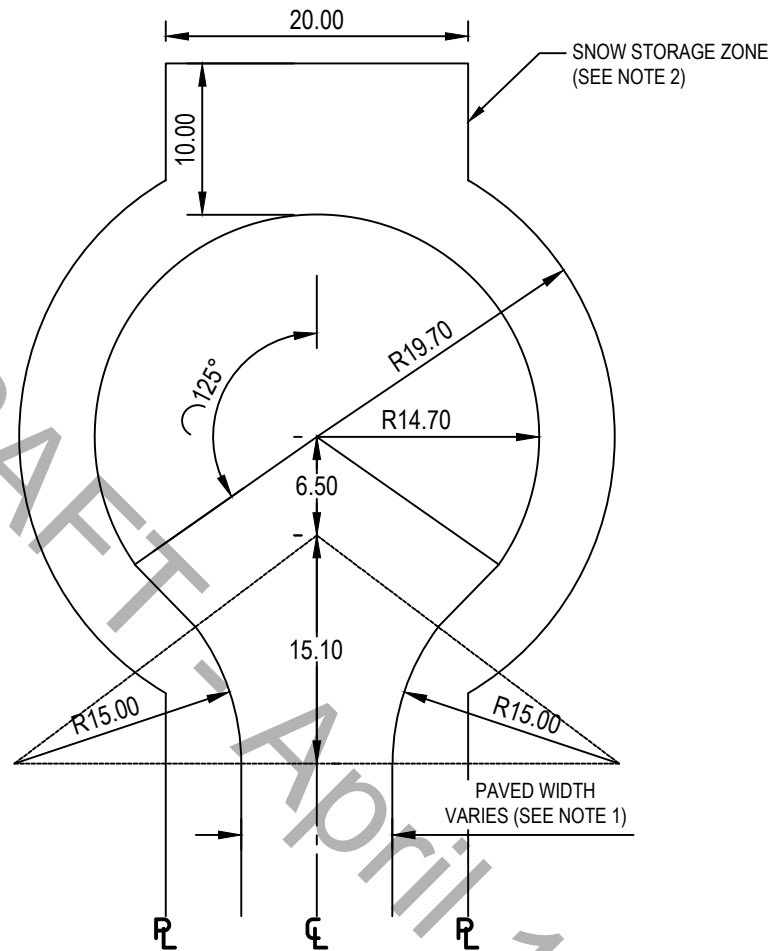
1. THE ROAD CONNECTED TO THE CUL-DE-SAC BULB SHALL BE CONSTRUCTED AS PER CLASSIFICATION STANDARD.



01	07/23	ISSUED FOR APPROVAL	RF	AB	
00	04/17	DRAFT BYLAW SUBMISSION	JN		
NO.	DATE	REVISIONS	BY	APP'D	

**CUL-DE-SAC BULB LAYOUT
WITHOUT SNOW STORAGE**

DATE	SCALE	CAD FILE	DWG. No.
APR 2017	1:500	FRN_R05	FRN-R05



NOTES:

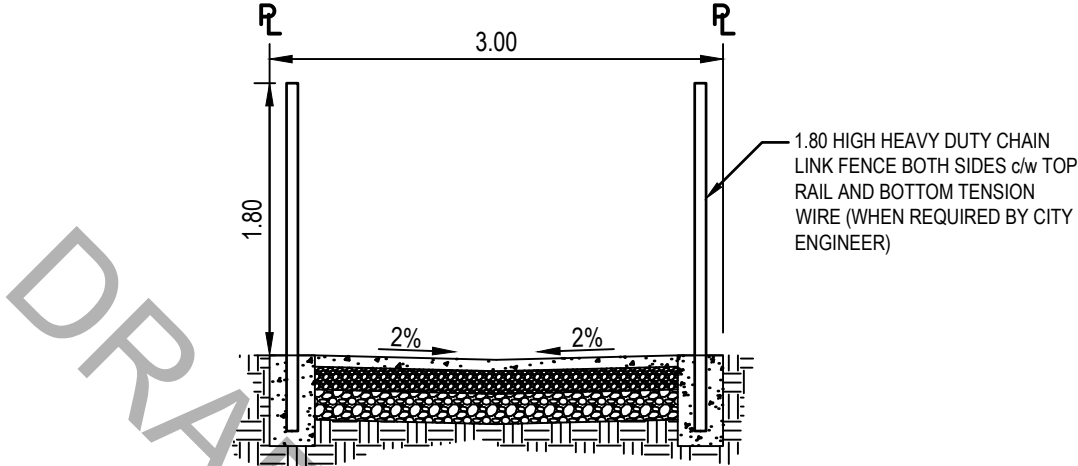
1. THE ROAD CONNECTED TO THE CUL-DE-SAC BULB SHALL BE CONSTRUCTED AS PER CLASSIFICATION STANDARD.
2. SNOW STORAGE ZONE:
 - ELEVATIONS OF SNOW STORAGE ZONE NOT TO BE GREATER THAN ROAD GRADE AND HAVE AN EFFECTIVE AREA OF NOT LESS THAN 200 m²
 - LOCATION CAN BE ADJUSTED TO SUIT TOPOGRAPHY AND DRAINAGE
 - NO DRIVEWAY ACCESS WILL BE ALLOWED THROUGH SNOW STORAGE ZONE
 - NO UTILITY OBSTRUCTIONS



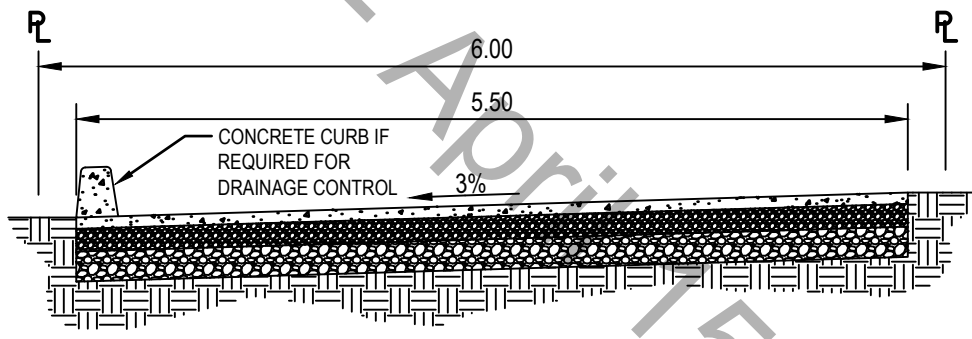
01	07/23	ISSUED FOR APPROVAL	RF	AB	
00	04/17	DRAFT BYLAW SUBMISSION	JN		
NO.	DATE	REVISIONS	BY	APP'D	

CUL-DE-SAC BULB LAYOUT WITH SNOW STORAGE

DATE	SCALE	CAD FILE	DWG. No.
APR 2017	1:500	FRN_R06	FRN-R06



WALKWAY, EMERGENCY ACCESS



LANE

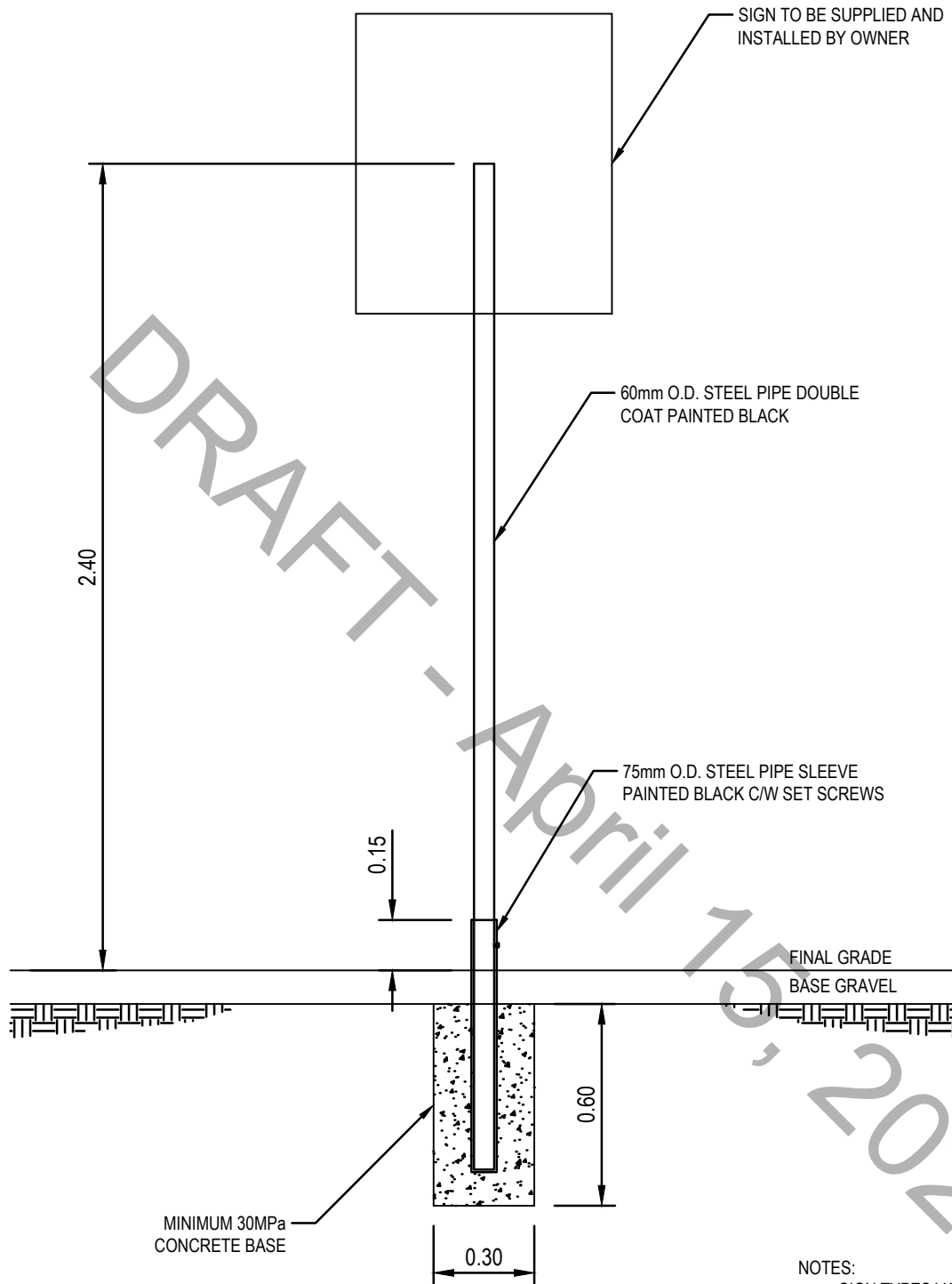
- NOTES:
- REMOVABLE LOCKED BOLLARD AS PER MMCD STANDARD DETAIL C12. TO BE INSTALLED AT BOTH ENDS OF THE WALKWAY WHERE IT JOINS OTHER HIGHWAYS



01	07/23	ISSUED FOR APPROVAL	RF	AB	
00	04/17	DRAFT BYLAW SUBMISSION	JN		
NO.	DATE	REVISIONS	BY	APP'D	

WALKWAY, EMERGENCY ACCESS
AND LANE

DATE	SCALE	CAD FILE	DWG. No.
APR 2017	NTS	FRN_R07	FRN-R07



NOTES:

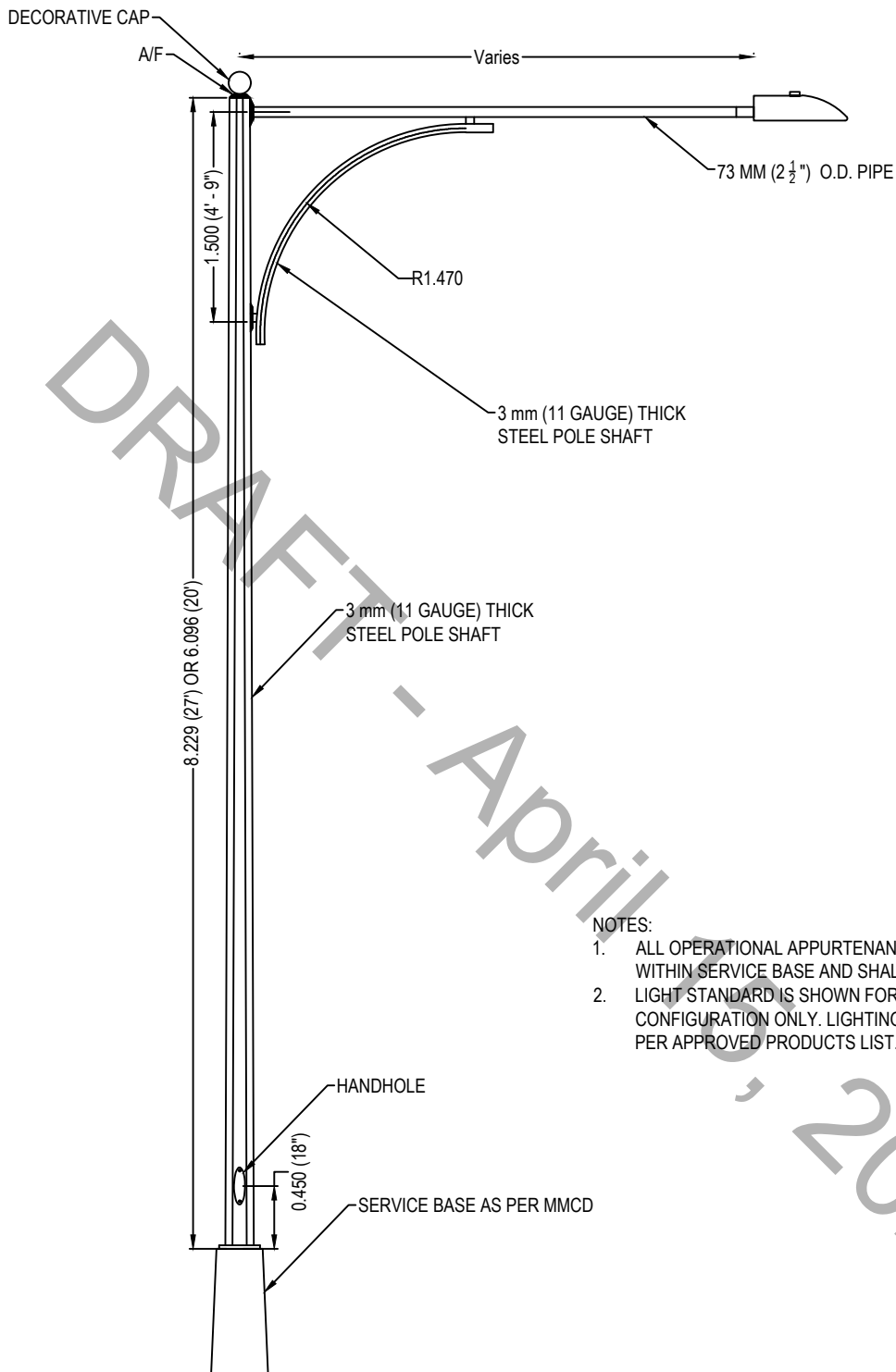
- SIGN TYPES VARY
- STEEL PIPE SLEEVE AND STEEL POLE SHALL BE PRIMED PRIOR TO FINAL COATS
- INSTALL HORIZONTAL BOLT OR WELD PLATE AS ANCHOR TO CONCRETE BASE



STANDARD SIGN BASE AND POLE
DETAIL

01	07/23	ISSUED FOR APPROVAL	RF	AB
00	04/17	DRAFT BYLAW SUBMISSION	JN	
NO.	DATE	REVISIONS	BY	APP'D

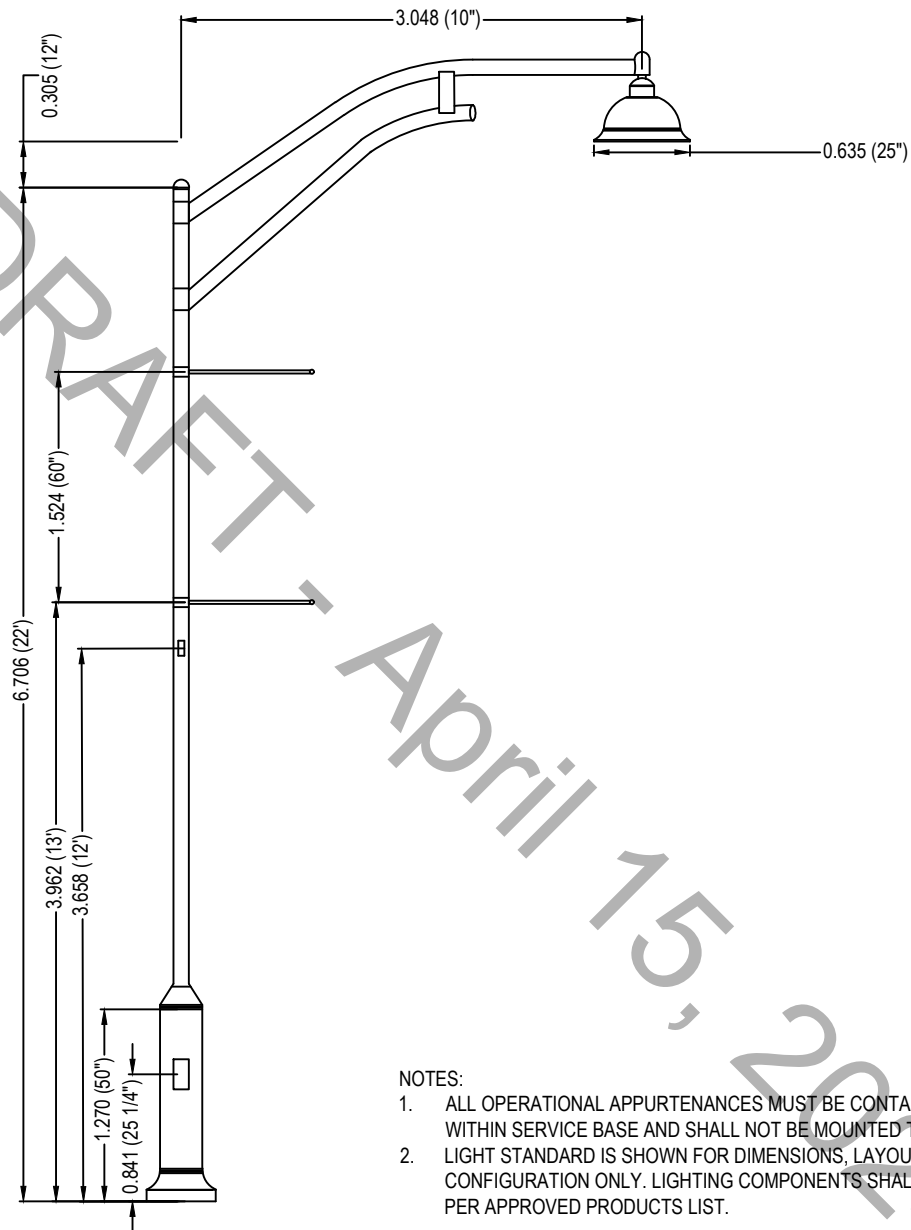
DATE	SCALE	CAD FILE	DWG. No.
APR 2017	NTS	FRN_R08	FRN-R08



01	07/23	ISSUED FOR APPROVAL	RF	AB	
00	02/17	DRAFT BYLAW SUBMISSION	JN		
NO.	DATE	REVISIONS	BY	APP'D	

DECORATIVE STREET LIGHT WITH HERITAGE ARM

DATE	SCALE	CAD FILE	DWG. No.
FEB 2017	NTS	FRN_E01	FRN-E01



NOTES:

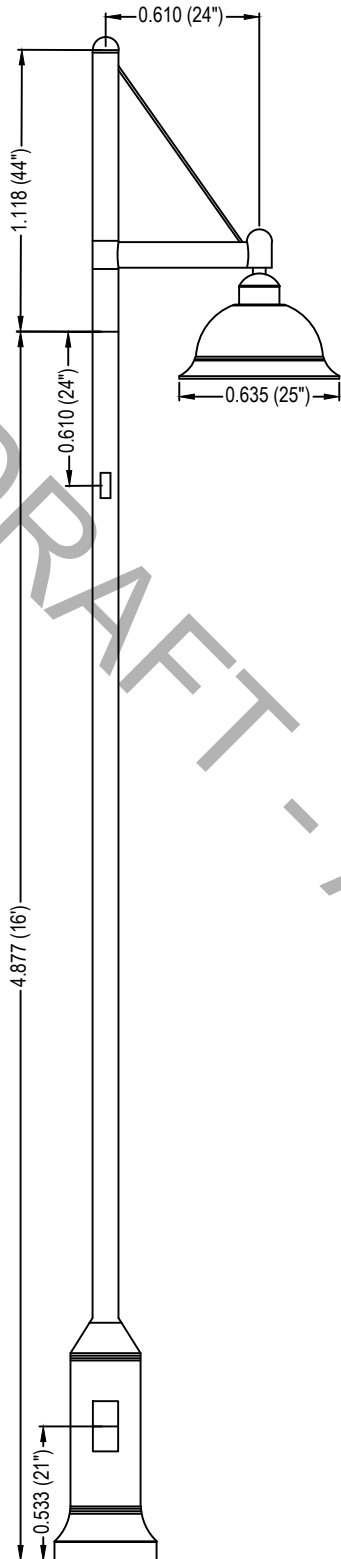
1. ALL OPERATIONAL APPURTENANCES MUST BE CONTAINED WITHIN SERVICE BASE AND SHALL NOT BE MOUNTED TO POLE.
2. LIGHT STANDARD IS SHOWN FOR DIMENSIONS, LAYOUT AND CONFIGURATION ONLY. LIGHTING COMPONENTS SHALL BE AS PER APPROVED PRODUCTS LIST.



01	07/23	ISSUED FOR APPROVAL	RF	AB	
00	02/17	DRAFT BYLAW SUBMISSION	JN		
NO.	DATE	REVISIONS	BY	APP'D	

DECORATIVE STREET LIGHT WITH
10' ARM AND PENDANT LUMINAIRE

DATE	SCALE	CAD FILE	DWG. No.
FEB 2017	NTS	FRN_E02	FRN-E02



NOTES:

1. ALL OPERATIONAL APPURTENANCES MUST BE CONTAINED WITHIN SERVICE BASE AND SHALL NOT BE MOUNTED TO POLE.
2. LIGHT STANDARD IS SHOWN FOR DIMENSIONS, LAYOUT AND CONFIGURATION ONLY. LIGHTING COMPONENTS SHALL BE AS PER APPROVED PRODUCTS LIST.



01	07/23	ISSUED FOR APPROVAL	RF	AB	
00	02/17	DRAFT BYLAW SUBMISSION	JN		
NO.	DATE	REVISIONS	BY	APP'D	

DECORATIVE STREET LIGHT WITH
2' ARM AND PENDANT LUMINAIRE

DATE	SCALE	CAD FILE	DWG. No.
FEB 2017	NTS	FRN_E03	FRN-E03

SCHEDULE D
SUBDIVISION AND DEVELOPMENT SERVICING BYLAW NO. 2514
2024

FORMS AND AGREEMENTS

SCHEDULE D
SUBDIVISION AND DEVELOPMENT SERVICING BYLAW NO. 2514
2024
LIST OF FORMS AND AGREEMENTS

STANDARD AGREEMENTS

Agreement D-1 Subdivision and Development Servicing Agreement (Template)

STANDARD FORMS

Form D-1	Permission to Construct
Form D-2	Certificate of Inspection
Form D-3	Certificate of Substantial Performance
Form D-4	Certificate of Total Performance
Form D-5	Final Acceptance Certificate
Form D-6	List of Inspections
Form D-7	Letter of Credit (Sample)

GENERAL

The appended Subdivision and Development Servicing Agreement template is typical of the agreement that will be executed between the City 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.

DRAFT - April 15, 2024

THIS AGREEMENT made this day of , 20

BETWEEN: **The Corporation of the City of Fernie**, a City incorporated under the Local Government Act of British Columbia, and having its Municipal offices at PO Box 190, 501 Third Avenue, Fernie BC V0B 1M0.

(Hereinafter called the “City”)

AND:

(Hereinafter called the “Developer”)

WHEREAS:

- A. The Developer is the registered Owner of lands within the City of Fernie 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 Land Title Act Covenants.

DEVELOPER TO DO WORK:

1. The Developer acknowledges, covenants and agrees with the City:

- a) to construct, install and provide all the Works and Services listed and shown on Appendices A and B hereto, as approved by the City, in accordance with the standards contained in the City's Subdivision and Development Servicing Bylaw No. 2514, 2024 (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 City, and to the satisfaction of the City 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 City 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 City 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 City are for the sole benefit of the City 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 Servicing Bylaw No. 2514, 2024.

TRANSFER OF INTEREST IN WORKS AND SERVICES:

2. The Developer covenants and agrees with the City to assign, transfer and convey to the City 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 Performance).

PERMISSION TO DO WORK:

3. The City 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 City 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 City provides the Developer with written permission to proceed with construction in the form provided in Schedule D 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 City, within **one (1) year or as amended** from the date of this Agreement.

DEVELOPER TO GRANT RIGHTS OF WAY:

7. The Developer shall grant to the City all necessary road dedications, statutory rights-of-way and easements over the said Lands (in conformity with the City'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 favor of the City 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 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 their 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 two 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 performance of the Works and Services. Written proof of coverage will be provided to the City upon request of the Chief Administrative Officer (CAO).

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 general 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, at a minimum, as noted below:
 - i. Full time (100 %) during **pipe placement**, with the Developer's Professional Engineer's site inspection report to include the details of the following:
 - Domestic water line, fire line, sanitary sewer line, storm sewer line.
 - Pipe material and classification schedule as per City approved plans.
 - Confirm location and size of connections.
 - Note thrust blocking, tie rods and /or hold-downs.
 - ii. Drop-in inspections during **compaction over pipe**, with the Developer's Professional Engineer's site inspection report to include the details of the following:
 - Compaction results from testing agency.

- iii. Full time (100%) during the following **water utility construction** activities:
 - Pressure testing
 - Watermain flushing
 - Chlorination testing
- iv. Drop-in inspections during the following **sanitary and storm sewer utility construction** activities:
 - Video of pipe, confirm video has been reviewed and no defects were found, submit digital and paper copy of video report.

Other site inspections are required at a minimum of twice weekly during other construction activities. Inspection reports from the Developer's Professional Engineer shall be provided to the City every week during construction.

- c) The City, 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 City 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 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 City on the ____ day of ____, 20____

DESIGN CHANGES:

- 11.
- a) The Approving Officer or City's authorized representatives 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 City's authorized representatives. 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 or City's authorized representatives, then the Developer shall, at their 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 City's authorized representatives.
 - b) The Developer covenants and agrees that the Developer's Professional Engineer shall obtain the prior written approval of the Approving Officer or City's authorized representatives 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 Approving Officer or City's authorized representatives 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 City'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 Approving Officer or City's authorized representatives.

SUBSTANTIAL PERFORMANCE:

12. A Certificate of Substantial Performance shall be provided by the City 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 City final Record Drawings, service connection cards and construction documentation, test results and digital asset management information, as accepted by the City as identified in Schedule A 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 City, 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 City will be payable by the Developer, as provided for herein. The decision of the City 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 City's infrastructure, only City crews or Contractors under the direct supervision of the City may undertake work on such City infrastructure. As such, City crews or contractors retained by the City may correct any defects, imperfections, settlements and/or re-chlorination and flushing which is deemed by the City 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 City 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. The City 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 City 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:

3% of the first \$500,000 of the Total Construction Cost;
2% of the next \$500,000 of the Total Construction Cost;
1% of the balance of the Total Construction Cost.

The date of the Certificate of Substantial Performance is the date of commencement of the Maintenance Period under Section 14 of this Agreement.

Within the Maintenance Period the City 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 City upon the submission of a Certificate of Inspection by the Developer's Professional Engineer.

The City shall issue a Final Acceptance Certificate upon the expiry of the Maintenance Period provided that all outstanding deficiencies identified by the City or its authorized representatives 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.

DEVELOPER INDEMNIFIES CITY:

16. The Developer covenants and agrees to save harmless and effectually indemnify the City, 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 City for which the City 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 City 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 City 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 City has accepted the Works and Services under Clause 15(d) carry Comprehensive Liability Insurance acceptable to the City 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 City 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 City 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 Corporation of the City of Fernie" and it's 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 City, delivered to the The Corporate Officer for the City

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 deposit 125% 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 Standby Letter of Credit in a form acceptable to the City (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 City.

Should the City agree to an extension of the time required to complete the Works and Services, the City 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 City 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 Developer's warranties in respect of same in place and stead of the Developer and ensure compliance with the terms of this Agreement. In addition the City may cash, retain and use the Security Deposit to remedy any emergency condition which, in the sole opinion of the City, is associated with, arises from or is a result of the Works and Services and requires expedient action. Despite the foregoing, the City 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 City for which the Developer indemnified the City 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 City in completing or maintaining all or a portion of the Works and Services including the City's normal overhead charges and satisfying the warranties thereof, curing other default by the Developer, or satisfying any amounts owing to the City pursuant to Clause 16, the Developer shall forthwith pay to the City the difference upon receipt from the City of invoices for the same together with all interest thereon at the commercial prime rate of interest plus two percent (prime + 2%) 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 City and may be collected in the same manner as property taxes in arrears.

RELEASE OF SECURITY DEPOSIT, MAINTENANCE HOLDBACK:

22. If the City 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 City as a result of, or arising from, the construction and installation of the Works and Services, the City 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 City 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 City as a result of, or arising from, the construction of the Works and Services, the City will authorize 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 City a non-refundable Inspection and Administration fee in the amount of \$ xxx.xx to cover City administration, inspection and processing costs. This fee is payable prior to the execution of this Agreement by the City 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 500,000	3 %
500,001 to 1,000,000	2 %
Over 1,000,000	1 %

NO OTHER REPRESENTATIONS:

25. It is understood and agreed that the City 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 City 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 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 ensure 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.

CITY'S OPINION:

32. Any opinion which the City is entitled by virtue of this Agreement to form may be formed on behalf of the Approving Officer, in which event the opinion of the Approving Officer shall be deemed to be the opinion of the City 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 City at:

City of Fernie
501 – 3rd Avenue, P.O. Box 190
Fernie BC V0B 1M0
Attn: Director of Planning

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 inure 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 subdivision and development servicing agreement 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 City of Fernie was hereunto affixed
in the presence of:

DIRECTOR OF PLANNING

DATE (MMM/DD/YYYY)

Appendix “A” – Cost Estimate

DRAFT - April 15, 2024

Appendix “B” – Site Servicing Design Drawings

<u>Drawing Number</u>	<u>Drawing Name</u>	<u>Revision #</u>
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DRAFT - April 15, 2024

Appendix “C” – Subdivision Plan

DRAFT - April 15, 2024

Appendix “D” – Land Title Act 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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STANDARD FORMS

Form D-1	Permission to Construct
Form D-2	Certificate of Inspection
Form D-3	Certificate of Substantial Completion
Form D-4	Certificate of Total Performance
Form D-5	Final Acceptance Certificate
Form D-6	List of Inspections
Form D-7	Letter of Credit (Sample)

CITY OF FERNIE

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 Subdivision and Development Servicing Agreement has been completed - No. _____

Developer's Professional Engineer: _____

Contact: _____ Phone Number: _____

Special Conditions: _____

City's Official Approval

CITY OF FERNIE

CERTIFICATE OF INSPECTION

I hereby certify that all engineering and construction services, required under the Subdivision and Development Servicing Bylaw of the City of Fernie 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	Revision
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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

Developer's Professional Engineer
(signature and name of the Professional Engineer responsible for design)

CITY OF FERNIE

CERTIFICATE OF SUBSTANTIAL PERFORMANCE

Developer:

Contractor:

Project No: _____

Servicing Agreement No: _____

Date: _____

This certificate is issued pursuant to Clause 12 and Clause 14 of the Subdivision and Development Servicing Agreement in Schedule D of the Subdivision and Development Servicing 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 City has been satisfied all conditions of the Servicing Agreement have been fulfilled.

This Certificate has been made to the best of the City 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 Servicing Bylaw, and not listed as a deficiency herein, whether or not such defect(s) could have been observed or discovered during construction.

Cc: Contractor

City Official's Approval

CITY OF FERNIE

CERTIFICATE OF TOTAL PERFORMANCE

Date: _____

Developer: _____

Developer's 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 Servicing Bylaw.

This does not exempt the Developer from any further requirements or agreement responsibilities which may come to the knowledge of the City 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.

Developer's Professional Engineer

ENGINEER'S SEAL

City Official's Approval

CITY OF FERNIE

FINAL ACCEPTANCE CERTIFICATE

Date: _____

Owner: _____

Developer's 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 City accept the works and services and release the Maintenance Holdback in the amount of \$_____.

Developer's Professional Engineer

ENGINEER'S SEAL

City Official's Approval

Form D-6

CITY OF FERNIE - Inspection List – Sign-Off

Inspection requirements to include:

- Regular and appropriate level of inspection;
- That City 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 Developer's Engineer or Contractor (and paid for by the Developer) for gradation limits in comparison to MMCD specifications and Subdivision and Development Servicing bylaw standards;
- All materials requiring compaction in the design or as specified in MMCD specifications and Subdivision and Development Servicing bylaw standards shall be tested as arranged by the Developer's 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 MMCD specifications;
- Engineering inspection reports be compiled by the Professional Engineer and copies be made available to the City on a weekly basis;
- All QA / QC material and compaction test results be collected and reviewed by the Developer's Professional Engineer for completeness and copies be made available to the City on a weekly basis;
- The watermain is to be flushed, pressure tested and disinfected in accordance with AWWA and MMCD specifications and Subdivision and Development Servicing bylaw standards and specifications before use – all written pressure test results and documentation of bacterial sampling/testing be provided to the City;
- Conduct final inspections with the participation of City representative.

Project Number with Project Location: _____

Date of inspection: _____

Developer's Engineer

ENGINEER'S SEAL

City Official's Approval

CITY OF FERNIE

Letter of Credit (Sample)

Date: _____

(Name of Bank)

(Address)

Dear Sirs:

Re:

At the request of _____ we hereby establish in your favour our irrevocable (Name of Owner) credit for a sum not exceeding _____ dollars (\$_____).

This credit shall be available to you upon demand at the (Bank), (Address of Bank) when supported by your written demand for payment made upon us.

This Letter of Credit is required in connection with an undertaking by the Owner to perform certain works and services required by you.

You may make partial drawings or full drawings at any time.

We shall honour your demand without enquiring whether you have a right as between yourself and our customer.

If you have not demanded on this Letter of Credit in full by (Expiry Date) it will be considered cancelled unless other arrangements or a renewal have been made with the Bank prior to the aforementioned date.

Our reference for this Letter of Credit is (_____)

(Name and Address of Bank)

Letter of Credit No. (_____)

(Name of Bank)

(Signature of Bank Officer)

The Owner hereby specifically agrees that it shall not take any action to dispute the validity of this Letter of Credit unless it shall have expired prior to demand.

We hereby agree to indemnify the (Bank) against any costs of actions relative to this Letter of Credit. We also authorize the (Bank) to make any necessary payments and debit our account accordingly.

(Owner)

SCHEDULE E

**SUBDIVISION AND DEVELOPMENT SERVICING BYLAW NO. 2514
2024**

APPROVED PRODUCTS LIST

1.0 Approval

- .1 This Approved Products List was revised and approved by the City 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 City of Fernie.
- .3 In the context of this Section, a product is approved when the vendor obtains a letter from the City stating that such product is approved for use in the City of Fernie, and that the name of the product is entered into the Approved
- .4 Where brand names are specified for a product, any proposal for an alternate product requires the approval of the City.
- .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 City for use in the City of Fernie, even though such products may be listed as approved in MMCD.
- .2 Unless specifically excluded by the City, all approved products listed in MMCD are acceptable for use in the City of Fernie subject to the restrictions on use as listed.

3.0 Revisions

- .1 The City 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

4.1 List of Approved Materials and Products

*Generic = Acceptable products meeting specifications but not specifically approved by name.

City of Fernie
Subdivision and Development Servicing Bylaw No. 2514

Product	Specifications MMCD Section	Approved Material Type	Approved Product	Comments
WATERMAIN				
Water Main	33 11 01 Section 2.2	- PVC - HDPE (see comments)	Generic	- No Ductile Iron - HDPE only if required by Interior Health Authority or approved by City engineer
Water Fittings	33 11 01 Section 2.2.4	- Cast Iron - Ductile Iron - PVC	Generic	
Water Meter			Neptune T-10 with E-coder R900i	
Water Service	33 11 01 Section 2.5.1	- Type K annealed copper with 12 AWG Thaw Wire - PEX	Generic	- No polyethylene - No polyethylene /Aluminum/Polyethylene composite
Gate Valves	33 11 01 Section 2.3.2		- Clow Canada Resilient Wedge F6112 (Tight-on by Tight On) - F6113 - Clow Canada Resilient Wedge F6102 (Flange-Flange) (Flange Flange)	All direct bury mainline valves shall be gate valves.
Butterfly Valve	33 11 01 Section 2.3.3		None	Butterfly valve not to be used unless approved by the City for specific installations only.

Blow-off Valve	33 11 01 Section 2.3.4			
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Product	Specifications MMCD Section	Approved Material Type	Approved Product	Comments
Air Valve	33 11 01 Section 2.3.5			
Hydrant	33 11 01 Section 2.6		Mueller Canada Valve Century	- Left-handed opening - B.C. standard thread
Corporation Stop	33 11 01 Section 2.7.2			
Curb Stop	33 11 01 Section 2.7.3	Full port ball valve		
Coupling	33 11 01 Section 2.2.4.12			No repair clamp allowed.
Joint Restrainer	33 11 01 Section 2.2.4.13			Pre-approval required from the City Engineer for specific installations only.
Joint Protection Tape		- AWWA C214 - AWWA C209 - AWWA C217-90	- Trenton Tec Tape - Denso Tape - HDPE Shrink wrap	- To be used when minimum clearance with a sewer main cannot be achieved. - MUST BE APPROVED BY INTERIOR HEALTH AUTHORITY.
Saddle	33 11 01 Section 2.5.3			
Test Point	33 11 01 Section 2.7.1		Eclipse #88	Permanent Test point
Water Valve Box	33 11 01 Section 2.3.6		- Nelson - Robar	Cover marked "WATER"
Curb Stop Box	33 11 01 Section 2.3.7		- Westview SSB1 - Trojan SSB1	Cover marked "WATER"
Bolt and Nut	33 11 01 Section 2.2.4.9	- Zinc plated - Cadmium plated	Generic	

City of Fernie
Subdivision and Development Servicing Bylaw No. 2514

Product	Specifications MMCD Section	Approved Material Type	Approved Product	Comments
Tie Rod	33 11 01 Section 2.2.4.10	• Zinc plated • Cadmium plated • Stainless Steel	Generic	
STORM SEWERS				
Storm Sewer	33 40 01 Section 2.0	• PVC Pipe, • HDPE; • PVC Profile Pipe	Generic	Approval required from City Engineer for other material types.
Storm Service Connection	33 40 01 Section 2.6	• PVC Pipe	Generic	
PIPE CULVERTS				
Pipe Culverts -road crossings	33 42 13 Section 2.0	• PVC Pipe, • HDPE, • PVC Profile Pipe, • Corrugated Steel	Generic	Approval required from City Engineer for other material types.
Pipe Culverts -driveways	33 42 13 Section 2.0	• PVC Pipe, • HDPE, • PVC Profile Pipe, • Corrugated Steel	Generic	Approval required from City Engineer for other material types.
SANITARY SEWERS				
Sanitary Sewer	33 30 01 Section 2.0	• PVC Pipe	Generic	• No concrete pipe
Sanitary Force Main	33 34 01 Section 2.0	• Pipes, fittings, mainline valves, boxes, couplings, bolts and nuts, and tie-rods same as for water applications	As per water applications	• No ductile iron pipe • Valve box cover marked "SANITARY SEWER" • Air valves to be specially designed for sewage applications.
Sanitary Service Connection	33 30 01 Section 2.3	• PVC	Generic	

City of Fernie
Subdivision and Development Servicing Bylaw No. 2514

Product	Specifications MMCD Section	Approved Material Type	Approved Product	Comments
MANHOLES AND CATCHBASINS				
Manhole Base, Barrel, Lid including ladder rungs	33 44 01 Section 2.1	Concrete		
Manhole Frame	33 44 01 Section 2.1	Cast Iron		
Manhole Cover	33 44 01 Section 2.1	Cast Iron		Cover marked "STORM SEWER" or "SANITARY SEWER".
Catch basin base, barrel, riser, lid including ladder rungs	33 40 01 Section 2.1	Concrete		
Catch Basin Frame	33 44 01 Section 2.1	Cast Iron		
Catch Basin Grate	33 44 01 Section 2.1	Cast Iron		

Product	Specifications MMCD Section	Approved Material Type	Approved Product	Comments
Inspection / Valve Chamber	MMCD Standard Detail Drawing S9 MR10	Cast Iron with Frame and Lid at surface PVC stand pipe	Trojan Terminal City MR-10	- Lids must be traffic rated cast iron when in vehicle travel paths - Lids marked "SANITARY" - Include check valve
STREETLIGHTING				
Decorative Street Light with Heritage Arm				
Luminaire			GE Lighting Evolve LED ERL1	
Pole			- Nova Pole International - West Coast Engineering Ltd.	Heritage arm length based on lighting and photometric design
Decorative Street Light with 10' Arm and Pendant Luminaire				
Luminaire			Philips LUMEC 100MH- DMS30- SG3-120- BKTX- LMS13663A	
Bracket			Philips LUMEC LMS13663A- 1A-BKTX	
Pole			Philips LUMEC SSM8V-22- BAS- BAA122-DR- BKTX- LMS13663A	

City of Fernie
Subdivision and Development Servicing Bylaw No. 2514

Product	Specifications MMCD Section	Approved Material Type	Approved Product	Comments
Decorative Street Light with 2' Arm and Pendant Luminaire				
Luminaire			Philips LUMEC 100MH- DMS30- SG3-120- LR-BRTX	
Bracket			Philips LUMEC RM- 1A-BKTX	
Pole			Philips LUMEC SM6N-DR- BKTX	

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APPENDIX A

**SUBDIVISION AND DEVELOPMENT SERVICING BYLAW NO. 2514
2024**

EROSION AND SEDIMENT CONTROL CHECKLIST

EROSION AND SEDIMENT CONTROL (ESC) CHECKLIST

- a) All ESC Facilities must be designed in accordance with the 1993 edition of the document entitled "Land Development Guidelines for the Protection of Aquatic Habitat", co-published by the Ministry of Environment, Lands and Parks and the Department of Fisheries and Oceans Canada, as amended, and best management practices as approved by the City Engineer, to limit the amount of Sediment and Sediment Laden Water discharged into the Drainage System.
- b) The ESC Plan must be prepared, signed, and sealed, by a Professional Engineer, Registered Professional Biologist or Certified Erosion Sediment Control Lead.
- c) As part of the City's effort to control sediment discharge from construction sites, Persons will be expected to adhere to best management practices (BMPs) including but not limited to items listed below:
 - i. Retain existing vegetation and ground cover where possible;
 - ii. Restrict vehicle access and utilize wheel wash pads at access points;
 - iii. Install silt fencing around stockpiles and at the toe of disturbed slopes;
 - iv. Completely cover temporary stockpiles or spoiled material with polyethylene or tarps and surround with silt fence;
 - v. Install and maintain filter fabric bags inside any catch basins, lawn basins, exposed manholes or any other open storm sewer access points collecting runoff from the building site;
 - vi. Divert runoff away from cleared areas by use of low berms;
 - vii. Convey surface runoff through swales designed to minimize flow velocity and erosion while maximizing settling;
 - viii. Where possible, collect runoff into suitable sediment settling facility or facilities prior to discharge off-site;
 - ix. Unless deemed unnecessary, a sediment pond should be designed, installed and maintained according to the Land Development Guidelines for the Protection of Aquatic Habitat;
 - x. Keep all sand, gravel, spoiled material and concrete mix off of the paved surfaces;
 - xi. During excavation, holes requiring dewatering should be pumped to a vegetated area or suitable settling facility which will prevent sediment-laden water from accessing the Drainage System;
 - xii. Regularly sweep roads; and re-vegetate, cover or mulch disturbed areas as soon as practically possible.
- d) The ESC Plan must conform to the City of Fernie drafting standards and must include, at a minimum, the following information:
 - i. Three stage silt plan (Clearing and Grubbing, Civil Construction, and Maintenance Period), measures for Erosion and Sediment Control during the three stages, and timing of implementation;
 - ii. Pond deactivation methodology; (if required);
 - iii. Property line(s) and other legal designations of the subject property or properties;

- iv. Location(s) of any existing underground services, as well as any proposed connections to existing services from the site;
- v. Location(s) of any existing drainage infrastructure and the proposed measures to protect it;
- vi. Location(s) of any existing watercourses, ditches, swales or any other body of water within 50m of the site boundaries, along with the proposed protection measures;
- vii. Location(s) of any existing/proposed buildings or ancillary buildings or structures;
- viii. Existing and proposed contours and relevant spot elevations;
- ix. Proposed site access locations;
- x. Wheel wash facilities, (if required);
- xi. Silt fencing detail and locations
- xii. Proposed ESC Facilities to be implemented on site, which shall include source controls as the primary method of ESC;
- xiii. Proposed methods to restore disturbed areas following the completion of construction;
- xiv. Any and all other details pertaining to the proposed Construction, describing how the ESC Facility discharge will adhere to the Regulations;
- xv. ESC Supervisor monitoring, inspecting, and reporting program