SCHEDULE A

SUBDIVISION AND DEVELOPMENT SERVICING BYLAW NO. ____ 2020

GENERAL REQUIREMENTS

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GENERAL INFORMATION, DESIGN CRITERIA & SUBMISSION REQUIREMENTS

SECTION 1 – GENERAL INFORMATION

SECTION 2 – GENERAL REQUIREMENTS

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1.1 INTRODUCTION

1.1.a Schedule A to the Subdivision and Development Servicing Bylaw identifies the General Information required by the Peace River Regional District when applying to subdivide or develop lands within the Regional District.

1.2 SCOPE AND USE OF SCHEDULE A

1.2.a Schedule A provides guidelines to the Developer and the development industry in the design of engineering servicing facilities and systems to be incorporated in the utilities infrastructure of the Peace River Regional District.

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

1.2.c Master Municipal Construction Documents (MMCD)

The provisions of this Bylaw are to be applied in conjunction with the Master Municipal Construction Documents, Platinum Edition, which otherwise apply to all Works and Services constructed under the jurisdiction of the Peace River Regional District.

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

1.2.d Master Municipal Construction Documents (MMCD), Design Guideline Manual

The provisions of this Bylaw are to be applied in conjunction with the Master Municipal Design Guideline Manual, 2014 Edition, which otherwise applies to all Works and Services constructed under the jurisdiction of the Peace River Regional District.

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 REQUIREMENTS

1.1 INTRODUCTION

1.1.a The purpose of this section is to outline the minimum standards and requirements for applications to subdivide or develop lands in the Peace River Regional District.

1.1.b Incomplete or substandard design submissions will be returned to the applicant. Where a subsequent re-submission remains incomplete or sub-standard, the Regional District will request a meeting with the Developer and their engineer to discuss the deficiencies and clarify requirements to address them.

1.2 PRELIMINARYSUBMISSIONS

1.2.a The Developer and their engineer must arrange for a pre-design meeting with the Chief Administrative Officer to clarify submission requirements prior to making a detailed submission. The purpose of the meeting is to help clarify submission and technical requirements towards ensuring compliance with the latest Regional District standards, specifications and policies.

1.2.b The Applicant will provide the Regional District with the following information at the pre-design meeting:

i. Proof that the owner is the owner of the lands proposed for subdivision, or the owner's duly authorized agent;

ii. A current State of Title Certificate (Title Search) AND copies of any notices on title;

iii. A statement in writing of the intended use of each parcel to be created;

iv. A preliminary plan (3 copies, 1:2000 scale) showing
   a) the location of the proposed development and the adjacent properties
   b) Proposed parcel arrangement
   c) Legal Description of Parcels and all property lines, easements, rights of way
   d) Adjacent residences and fixed improvements.
   e) the location of works and services within the area, including storm and sanitary sewers, watermains, roads, other utilities, buildings/structures;
   f) Watercourses
   g) Any proposed phasing
   h) Adjacent highways and the connections of proposed new highways thereto;
   i) Adjacent sidewalks and pedestrian paths;
   j) a general outline/concept of the proposed development.

v. copies of any available reports pertinent to the proposed development.

1.3 DETAILED SUBMISSIONS

1.3.a Should the Developer wish to proceed with the application for subdivision or development subsequent to making the Preliminary Submission, a Detailed Submission must be made.

1.3.b All detailed submissions shall reflect and comply with the following:

(i) All applicable requirements of this Bylaw.

(ii) All applicable requirements of the Regional District, including but not limited to:

1. The Official Community Plan
2. The current Zoning Bylaw(s)
3. The current Building Bylaw

(iii) All applicable requirements of the Provincial Ministry of Transportation and Infrastructure Specifications.

(iv) Be designated and dimensioned in Standard Metric units.

1.3.c All engineering and technical submissions are subject to an independent peer review.

1.3.d GEOTECHNICAL AND HYDROGEOLOGICAL DESIGN CONSIDERATIONS

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

1.3.e ENVIRONMENTAL CONSIDERATIONS

i. The Approving Officer may require the Applicant to provide information and reports regarding any environmental issues or concerns related to the development.

1.3.f TRAFFIC IMPACT CONSIDERATIONS

i. The Approving Officer 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.

1.3.g OFF-SITE UTILITIES IMPACT CONSIDERATIONS

i. The Approving Officer may require the Applicant to provide an off-site utilities impact analysis to determine the impact of development utilities needed to service the proposed development on the existing utility network, and to identify any required upgrades to the utility network as a result of the development.

1.3.h SURVEY INFORMATION

i. The Applicant must provide the Regional District with written permission from the registered owners of all required property owners prior to entering private property to facilitate the survey and design work for the development;

ii. All surveys shall be to elevation and coordinates derived from the Geodetic Datum, Geodetic Survey of Canada and NAD83.

iii. 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 bench mark or GPS control point with elevation shall be shown on each design drawing.

iv. Originating benchmarks and integrated survey monuments shall be noted on all plans as well as those to be established during the work.

v. Copies of legible field notes shall be made available to the Regional District upon request.

vi. 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.

vii. 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.

viii. Where applicable, roadway cross sections and other pertinent features are required. The section shall include centreline, edge of pavement or gutter line, edge of shoulder, ditch invert, top of ditch, property line, and an existing ground elevation inside property line.

ix. Topographical features such as, rock outcroppings, streams, etc.

1.3.i DESIGN DRAWING SUBMISSION

i. All drawings submitted to the Regional District shall be prepared in metric units, on standard A1 sheets/scales, in accordance with the following requirements and all other applicable requirements of this Bylaw.

ii. All drawings shall be signed and sealed by a Professional Engineer registered in the Province of British Columbia.

iii. The Developer's Engineer's seal and signature shall confirm that the Works and Services as proposed are technically sound, and comply with the applicable design criteria of this Bylaw, and Good Engineering Practice.

iv. All drawings 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 Regional District.

v. 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:

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

   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.

2. 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.

3. ~~Storm Water Management Plan~~ **(MOTI)**
   ~~The Storm Water Management Plan shall be 1:500 scale and identified as per the key plan system if more than one sheet is required. Details shown must include:~~

   - ~~Catchment area~~
   - ~~Minor (10 year return) system~~
   - ~~Major (100 year return) system~~
   - ~~Creeks, Swales, open channels~~
   - ~~Impacts on adjacent and downstream lands and systems~~
   - ~~Details of detention or other forms of flow control.~~

4. 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, and separation from, sewers shall be noted and the watermain shall be protected in accordance with Ministry of Health requirements.

5. ~~Storm Sewers~~ **(MOTI)**
   ~~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.~~

6. 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.

7. Roads **(MOTI)**

8. Road Cross Sections **(MOTI)**

9. 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. General Notes are to be included on the Plan noting reference(s) to the Regional District Standards and Specifications and the appropriate design criteria. Street lighting plan(s) should be accompanied with the photometric calculations.

10. Construction Details
    Construction Details shall show details not covered or specifically identified in the Regional District Standards and Specifications or in MMCD documents. Where there is a Regional District Standard, refer to the associated Drawing Number. It is not necessary to include or provide drawings for work(s) for which there is a Regional District Standard Drawing.

11. Lot Grading Plan
    Lot Grading Plans shall meet all requirements set out in the Standard Drawings. Lot Grading Plans 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 Regional District. The topographic information shall extend a minimum of 30.0 m outside of the development boundary. All existing lot corner elevations must be illustrated (not circled) and all proposed lot corner elevations must be illustrated (circled). The Plan must illustrate the proposed building envelop(s) with the Minimum Building Elevation(s) (MBE) noted. Proposed lot slopes and any retaining structures, significant grade breaks and surface drainage infrastructure must be illustrated.

12. 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 in accordance with the requirements of other approval authorities.

13. Signage and Line Painting **(MOTI)**

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

1.3.j Notwithstanding the previously detailed requirements, the following additional information is to be noted in design submissions to the Peace River Regional District:

(i) The size, grade, inverts, and type of material on profiles, based on the same chainage as indicated on the plan drawings;

(ii) The locations, off-sets, curvatures, size and identification of the mains noted on the Plans, including;
1. the clearance between mains at cross-over points;
2. all existing structures, including houses, sheds, fences, wells, septic tanks and fields, with a notation indicating their fate (i.e. to be removed, filled, etc.);
3. in rural subdivisions, with an open ditch drainage system, the size of (future) driveway required culverts to conform to the design.

1.3.k 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 Drawings.

i) The first complete detailed design submission shall consist of:
1. two complete sets of drawings;
2. Geotechnical and soils investigation report (to verify road structure design);
3. Photometrics (lighting calculations) for required street lighting;
4. Traffic Impact Study, if specifically required by the Approving Officer;
5. Off-Site Utilities Impact Analysis, if specifically required by the Approving Officer;
6. all applicable utility hydraulic calculations and structural calculations (water, sanitary, storm sewer);
7. any additional design briefs identified as necessary by the Regional District;
8. Construction and installation cost estimate (under seal of the Developer's Engineer).

ii) Subsequent design submissions requiring changes to the previous submission shall consist of:
1. two complete sets of drawings;
2. a complete construction cost estimate;
3. all changes made to the first submission shall be highlighted, including any changes made by the Developer's Engineer which are in addition to "Red Line" changes required by the Regional District;
4. Items 'Red Lined" by the Regional District must be addressed by the Developer's Engineer. Failure to do so will result in the submissions being returned to the Applicant.

iii) The final submission for municipal acceptance shall consist of four complete sets of drawings (one of which will be returned to the Developer's Engineer and all supporting documents.

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

1.4 CONSTRUCTION COST ESTIMATE CALCULATIONS

1.4.a The construction cost estimate shall be broken down in the format defined in MMCD.

1.4.b Hydro, gas, cable and telephone cost estimates are required and the estimated costs are to be included in the security deposit required under the Subdivision Servicing Agreement. These items and costs will be reviewed and amended by the Regional District where necessary.

1.5 SERVICE CONNECTION CARDS

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 paper copy and electronically in PDF and AutoCAD (latest version) formats. Each service connection card is to indicate clearly and accurately the following information:

i) the location, depth, size and material of construction of each Regional District utility connection
ii) The Regional District project number
iii) legal plan number and/or lot number
iv) Civic address (if established)

1.6 RECORD SUBMISSIONS AND ASSET MANAGEMENT SCHEDULE

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

1.6.b 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 Regional District review.

1.6.c 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 Regional District 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.

1.6.d The Developer's Engineer will be required to submit the following:

i. A digital copy of the CAD files containing the final Record drawings.

ii. A digital .pdf file containing final 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 works.

iv. Service Connection Cards for each development, including a paper copy and electronically in PDF and AutoCAD (latest version) formats. Each service connection card is to indicate clearly and accurately the following information:

1. the location, depth, size and material of construction of each Regional District utility connection;
2. the Regional District project number;
3. legal plan number and/or lot number;
4. Civic address (if established)

1.6.e Receipt of all Record information, acceptable to the Regional District, is required prior to issuance of Substantial Performance for the project;

1.6.f A Schedule for use in the Regional District's Asset Management Database including quantities and actual unit prices of all works/infrastructure constructed or altered as part of the development, to be owned by the Regional District. Works and Services shall be

grouped by road segment between intersections. Where assets overlap at intersections, the asset is to be assigned to the primary road. The information is to be provided electronically in Excel and PDF format as prescribed by the Regional District.

1.6.g Geotechnical Investigation Report
A copy of the final Geotechnical Report, signed and sealed by the Developer's Engineer.

1.6.h Traffic Impact Study **(MOTI)**

1.6.i Off-Site Utilities Impact Analysis
A copy of the final Off-Site Utilities Impact Analysis, signed and sealed by the Developer's Engineer.