Regional District of East Kootenay

SUBDIVISION SERVICING BYLAW NO. 1954, 2008 CONSOLIDATION

This is a consolidation of the Subdivision Servicing Bylaw and adopted bylaw amendments. The amendments have been combined with the original Bylaw for convenience only. This consolidation is not a legal document.

May 4, 2012

BYLAW AMENDMENTS				
Bylaw No.	**Amend. No. / Yr.**	**Adopted**	**Short Citing**	**Legal Description Zoning**
2370	1/2012	04 May 12	Regional District East Kootenay-Subdivision Servicing Bylaw No 1954, 2008	Text amendment only

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REGIONAL DISTRICT OF EAST KOOTENAY

SUBDIVISION SERVICING BYLAW NO. 1954, 2008

A bylaw to regulate servicing of subdivisions under Division 11 of Part 26 of the *Local Government Act.*

WHEREAS the Board of the Regional District wishes to ensure that subdivision takes place in an orderly and efficient way to ensure a safe and healthy environment;

AND WHEREAS the Board wishes to ensure that subdivision does not result in excessive cost to the Regional District to provide services;

AND WHEREAS the Board wishes to replace the existing subdivision servicing bylaw cited as "Regional District of East Kootenay – Subdivision Servicing Bylaw No. 1334, 1998";

NOW THEREFORE the Board of the Regional District, in open meeting assembled, enacts as follows:

PART 1 TITLE

This Bylaw may be cited for all purposes as "Regional District of East Kootenay – Subdivision Servicing Bylaw No. 1954, 2008".

PART 2 DEFINITIONS

In this Bylaw:

Approval OR Approved means approval or approved in writing from the authority having jurisdiction.

ASTM means the American Society for Testing and Materials.

AWWA means the American Waterworks Association.

Bare Land Strata(s) means a strata as defined in the *Strata Property Act*.

Building(s) means a Structure used or intended for supporting or sheltering any use or occupancy.

Community Sewer System(s) means a system of sewage collection, treatment and disposal where the treatment method serves more than one parcel and is

(a) Approved under the Sewerage System Regulation (B.C. Reg. 326/2004); or
(b) Approved under the Municipal Sewage Regulation (B.C. Reg. 129/99);

AND which is established and operated under the *Health Act* and regulations or *Environmental Management Act* and regulations or other provincial legislation that may apply.

Community Water System means a system of waterworks serving more than one parcel that is owned, operated and maintained by a local government or improvement district as defined by the *Local Government Act*, or a Strata corporation as defined by the *Strata Property Act*, or a water utility, as defined by the *Water Utility Act*;

AND for systems owned, operated and maintained by a Strata corporation or private water utility for which a Certificate of Public Convenience and Necessity (CPCN) has been issued by the Comptroller of Water Rights for the Ministry of Environment;

AND which is Approved under the *Drinking Water Protection Act* and any other provincial regulations that may apply.

Construction Completion Certificate (CCC) means a written acknowledgement substantially in the form of Schedule "B" as provided and signed by the Owner's Engineer and by the Engineering Manager that all or a specified portion of the Works have been completed.

CSA means the Canadian Standards Association.

Cul-de-sac means a length of highway made for vehicular use, the end of which is designed to be permanently closed by a pattern of subdivision or which is terminated by a natural feature such as inaccessible terrain so that there is no alternative vehicular route to another highway.

Engineering Manager means the Regional District Manager assigned responsibility for engineering matters, or his designate.

Final Acceptance Certificate(s) (FAC) means a written acknowledgement substantially in the form of Schedule "C" as provided and signed by the Owner's Engineer and by the Engineering Manager that all or a specified portion of the Works have been completed and accepted by the Regional District.

Issuing Official means a person authorized by or under the regulations to issue a construction permit, operating permit or other permit required by or under the *Drinking Water Protection Act* for a Community Water System.

Lane(s) means a highway providing secondary access to any abutting parcel so that the parcel may be serviced or reached by vehicles using that highway. A Lane is not a half road.

Letter of Credit means an irrevocable letter of credit with automatic annual renewal and provision for periodic drawdown and must be substantially in the form of Schedule "F" attached to and forming part of this Bylaw.

Owner means the registered owner of land which is the subject of a proposed subdivision regulated by this Bylaw.

Owner's Engineer means a Professional Engineer registered in the Province of British Columbia whom the Owner has engaged to carry out surveys, design, field inspection and preparation and certification of as-built drawings. The Owner's Engineer retains professional errors and omissions and general liability insurance coverage.

Park means open space set aside for recreational purposes or maintained for the use and enjoyment of the public and includes Federal, Provincial, Regional and Local Parks; and ecological, archaeological and historic sites. A Park may include land owned or leased by a club, society, or organized group for recreational use by its members, but does not include a commercial amusement park. A Park may also include privately owned land for use of which no charge is made.

Planning Manager means the Regional District Manager assigned responsibility for land use planning matters, or his designate.

Potable Water means potable water as defined in the *Drinking Water Protection Act*.

Professional Engineer means a person registered in the Province of British Columbia and licenced as such under the *Engineers and Geoscientists Act.* The Owner's Engineer retains professional errors and omissions and general liability insurance coverage.

Public Heath Inspector means an officer appointed under the *Health Act* holding a Certificate in Public Health Inspection (Canada) or equivalent certificate issued by a competent authority and acceptable to the Board of Certification of Public Health Inspectors of the Canadian Public Health Inspectors Association.

Public Utility means a use, including Buildings and Structures, providing water supply, sewage collection and disposal, solid waste management, electricity, natural gas, telephone, radio and television broadcasting, transmitting and receiving and similar services where such use is established by a municipality, the Regional District, an improvement district, a Strata corporation, or a company regulated by government utility or communications legislation.

Regional District means the Regional District of East Kootenay.

Residential Unit means a housing unit for one family consisting of a detached residence, one self-contained suite in a residence, one side of a duplex or one self-contained suite in a Building containing three or more such suites.

Service Area(s) means in relation to a regional district, the area in which a service is provided, being comprised of the participating areas for the service as defined by the *Local Government Act*.

Sewerage System as defined in the *Sewerage System Regulation* means a system for treating domestic sewage that uses one or more treatment methods and a discharge area, but does not include a holding tank or a privy.

Strata means a development where fee simple land is divided into multiple units, with all unit owners having a right to use common elements.

Structure(s) means anything built, placed or constructed that is fixed to, sunk into or supported by the soil or another Structure, excluding signs, fences, concrete footings, paved surfaces and retaining walls less than 1.5 metres in height.

Subdivision Servicing Agreement means an agreement, in the form attached as Schedule "E," provided for in the *Local Government Act*.

Walkways means a strip of land with a minimum width of three metres for use by pedestrian and non-motorized traffic only, dedicated as highway or established by a statutory right-of-way agreement.

Works means the improvements required under this Bylaw to be made on or adjacent to subdivided land, including the installation of water, sewer, street lighting, and other matters and things required of the Owner by this Bylaw.

PART 3 APPLICATION AND ADMINISTRATION

3.01 APPLICATION

This Bylaw applies to the unincorporated areas of the Regional District.

3.02 ADMINISTRATION AND ENFORCEMENT

The Planning Manager and Engineering Manager and any other person authorized to assist the aforementioned persons, are authorized to administer this Bylaw, and to enter any premises at any reasonable time to determine whether the regulations contained in this Bylaw are being complied with.

Any person who contravenes any provision of this Bylaw commits an offence punishable on summary conviction and is liable to a fine not exceeding $2,000 for each offence.

3.03 SEVERABILITY

If any section or lesser portion of this Bylaw is for any reason held to be invalid by a court, the invalid portion is severable and the validity of the remaining portions of this Bylaw will not be affected.

3.04 UNITS OF MEASURE

The International System of Units (SI) (metric system) is the system of measurement in this Bylaw.

3.05 SCHEDULES

The following Schedules attached to this Bylaw are incorporated into and form part of this Bylaw:

Schedule "A" – Standard Drawings
- A-1 Typical Single Trench Cross Section
- A-2 Typical Double Trench Cross Section
- A-3 Typical Lot Service Trench
- A-4 Typical Hydrant Assembly
- A-5 Standpipe or Blow Off Detail
- A-6 Typical Valve Installation
- A-7 Typical Water Service
- A-8 Typical Pipe Shallow Bury Installation
- A-9 Typical Thrust Block Details
- A-9.1 Specifications of Typical Thrust Block Details
- A-10 Standard Service Access Details (sewers 380 mm or less)
- A-11 Drop Service Access Details
- A-12 Standard Service Access Frame and Cover
- A-13 Standard Catch Basin Details
- A-14 Typical Sewer Service
- A-15 Typical Sewer Cleanout
- A-16 Typical Residential Road

Schedule "B" – Construction Completion Certificate
Schedule "C" – Final Acceptance Certificate
Schedule "D" – Restrictive Covenant Where Use Of Land Does Not Require Potable Water And A Sewage Disposal System
Schedule "E" – Subdivision Servicing Agreement
Schedule "F" – Form of Irrevocable Letter of Credit With Automatic Annual Renewal
Schedule "G" – Form of Statutory Right-of-Way Agreement
Schedule "H" – Well Pumping Test & Recovery Information
Schedule " I " – Restrictive Covenant Where Proposed Source of Water Is Groundwater
Schedule "J" – Proof of Water For Existing Water Source
Schedule "K" – Fees
Schedule "L" – Fire Hydrant Use Permit
Schedule "M" – Form of Water Quality Test Results Letter

3.06 APPLICATION FOR SUBDIVISION

(1) Applications for subdivision must be submitted to the Ministry of Transportation.

BL 2370
04 May 12

(2) Upon referral of a subdivision application to the Regional District by the Ministry or upon application to the Regional District for the conversion of an existing occupied building into Strata lots, the Owner must submit to the Regional District the application fee as established by Regional District bylaw.

(3) The Regional District will provide written comments to the Owner and to the Ministry of Transportation on every subdivision application referred to the Regional District by the Ministry of Transportation.

(4) Subject to the *Local Government Act*, the Regional District's comments are valid for 24 months, after which a new application fee must be paid and new comments issued.

(5) Prior to the Regional District providing confirmation to the Approving Officer that all Regional District requirements have been satisfied, the Owner must supply the Regional District with a copy of the survey plan proposed for registration in the Land Title Office.

PART 4 BASIC PROVISIONS

4.01 UNDERGROUND UTILITIES

Where an Owner proposes to provide underground utilities, the services and appurtenances must be constructed and installed in accordance with the requirements of the appropriate authority having jurisdiction, utility company and this Bylaw.

4.02 ON-SITE SERVICING NOT REQUIRED

The requirements of Parts 10 and 11 of this Bylaw do not apply where a parcel being created is to be used solely for:

(a) a surface parking lot;

(b) a wildlife management area designated under the *Wildlife Act*;

(c) an archaeological reserve designated under the *Heritage Conservation Act*, provided that no Building or Structure in which food is served, washrooms are located or washrooms are to be located on the proposed parcel;

(d) a cemetery;

(e) the unattended equipment necessary for the operation of a Public Utility;

(f) a sanitary landfill site or transfer station;

(g) a Park, provided that no Building or Structure in which food is served, washrooms are located or washrooms are to be located on the proposed parcel;

(h) common lot access route;

(i) a parent parcel upon which a further Bare Land Strata subdivision will be registered;

PROVIDED that the Owner enters into a restrictive covenant under section 219 of the *Land Title Act* with the Regional District restricting the use of the parcel. The covenant should be substantially in the form of Schedule "D".

4.03 OTHER LEGISLATION

(1) No land may be subdivided contrary to the provisions of this Bylaw.

(2) No land may be subdivided which will make an existing Building, Structure or use on the land non-conforming with respect to the siting or parcel size requirements in a zoning bylaw, a land use bylaw or the *Local Services Act.*

4.04 OWNER RESPONSIBILITY

Nothing contained in this Bylaw relieves the Owner from responsibility to seek out and comply with other legislation applicable to his undertaking.

PART 5 CONSTRUCTION, COMPLETION AND ACCEPTANCE OF WORKS

5.01 DUTIES OF PROFESSIONAL ENGINEER

The Owner must provide written proof to the Engineering Manager confirming that the Owner has engaged a Professional Engineer experienced in the field of municipal engineering to carry out surveys, design, field inspection and preparation and certification of construction and as-built drawings, in relation to the subdivision, in accordance with the requirements of this Bylaw.

5.02 BARE LAND STRATA DEVELOPMENT

This Section applies to all Strata developments including Bare Land Stratas.

(1) Although certain provisions of Bare Land Strata services requirements are governed by the *Strata Property Act*, the Regional District recommends that the standards of this Bylaw and standards accepted as good engineering practices be applied in the design and construction of water and sewer systems within any Bare Land Strata development.

(2) Where a Strata development is proposed for connection to a Regional District water or sewer system:

(a) the Owner must submit engineered drawings for comment;

(b) the Owner must pay the preliminary plan review fees as specified in Schedule “K” of the Bylaw.

(3) Where a Strata development requires a service connection to a Regional District water system, a Double Check Valve as specified in Section 10.02(9) is to be installed and pressure testing as per Section 10.05(2) is to be done.

(4) Where a Strata development requires a service connection to a Regional District sewer system, flushing as per Section 11.04(5) and leak tests as per Sections 11.04(6)(b) and (c) must be done.

5.03 ENGINEERED DRAWINGS

(1) Where Works and services for the subdivided lands are proposed to be operated by the Regional District, this Section applies.

(2) Preliminary Submission Requirements

(a) The Owner must submit two sets of preliminary engineered drawings containing all information specified in sections 5.03 (3) to (9) inclusive, to the Engineering Manager for preliminary review.

(b) The Owner must pay the preliminary plan review fees as specified in Schedule “K” of this Bylaw.

(c) The Engineering Manager will review the preliminary drawings and return one marked set to the Owner for any revisions required.

(3) Detailed Submission Requirements

The Owner must submit three sets of engineered drawings to the Engineering Manager for review, prepared as follows:

(a) Materials:
- ink drawings on standard A-1 (594 mm X 841 mm) size sheets.
- Digital drawings in AutoCad or Microstation and conforming to the Regional District Drafting Standards Manual.

(b) Scale:
- horizontal - 1:500
- vertical - 1:50
- where grades exceed 15%, vertical scale may be 1:100.

(c) Layout:
- profile on top part of drawing; plan on bottom part;
- north arrow facing the top or left side;
- Regional District file number on the title block;
- consecutive drawings to be joined by matchlines;
- dimensions to be shown on parcel boundaries;
- parcels must show parcel and registered plan numbers;
- rights-of-way and easements must be shown.

(d) Title block to include:
- Owner's name;
- engineer's name;
- subdivision name including staging or phasing;
- drawing name, number and job number if applicable;
- revision number and description;
- horizontal and vertical scales;
- space for signature of designer, draftperson, checker and approving authority;
- space for the number, date, description, designer and approving authority for all revisions and drawing issues including preliminary, Approval, tender, construction and as built;
- space for professional stamps, permit stamps and construction Approval stamp.

(4) Water Service Information

(a) On plan, show:
- watermains, hydrants, valves, caps, reducers, standpipes, pressure reducing stations, and all other appurtenances and fittings;
- distances of water services from main to parcel line;

(b) On profile, show:
- show offsets of mains from property line, pipe sizes, material, and class;
- fitting sizes and joint types.
- pipe sizes, materials and classes;

(5) Sanitary Sewer Information

(a) On plan, show:
- all pipes, service accesses, catch basins, drainage drywells, clean-outs, leads, inlets and outfalls, pipe sizes, materials, classes of pipe, and offsets from property lines;
- distances of sanitary services from main to parcel line;
- invert elevation and pipe size;
- centreline of drainage ditches with arrows showing direction of flows.

(b) On profile show:
- service accesses, pipes and sizes, lengths, materials, classes and grades between service accesses, and pipe invert elevations;
- invert elevations of inlets and outfalls.

(c) All service accesses must have numbering circles on both plan and profile. The service access numbers shown must be in accordance with the Regional District's numbering system.

(6) Other Utilities

On plan, show storm sewer and drainage, underground power, cable television, telephone ducts, overhead pole lines and offsets, and gas lines, including intermediate and high pressure mains.

(7) The Owner must submit a copy of an Approved and current Certificate of Public Convenience and Necessity and Waste Management Permit.

(8) All required engineered drawings must be dated and sealed by the Owner's Engineer.

(9) All required engineered drawings must be received by the Engineering Manager before construction of Works commences.

(a) Storm sewer and drainage and shallow utilities to be Approved by appropriate jurisdiction.

(10) Where more than one standard exists, such as the Subdivision Servicing Bylaw and the Design Guidelines for Rural Residential Community Water Systems, the higher of the available standards shall apply.

5.04 CONSTRUCTION SCHEDULE

(1) Timing

Before starting construction of Works, the Owner must provide in writing to the Engineering Manager a timetable showing the sequence and timing of construction activities. If there are delays or variances from the construction schedule, the Owner must inform the Engineering Manager.

(2) Requirements

The Owner must obtain a Construction Completion Certificate (CCC) and Final Acceptance Certificate (FAC) for all Works installed pursuant to this Bylaw, in accordance with the requirements of this section.

(3) Procedures - Construction Completion Certificates (CCCs)

The following procedures govern the issuance of Construction Completion Certificates:

(a) The Owner must submit to the Engineering Manager three copies of a Construction Completion Certificate substantially in the form of Schedule "B" signed by the Owner's Engineer for each of the following services installed:

- sanitary sewers
- waterworks
- sanitary sewer and water services
- street lighting

The Engineering Manager will, within one month of receipt of the Construction Completion Certificate, review the work with the Owner's Engineer at the Owner's expense.

Should additional Construction Completion Certificate inspections be required due to defects and deficiencies, the Engineering Manager will re-inspect the work with the Owner's Engineer at the Owner's expense as per Schedule "K" of this Bylaw.

(b) If the inspection shows to the satisfaction of the Regional District that the Works are completed and conforms to this Bylaw, the Engineering Manager will sign the Construction Completion Certificate and will indicate thereon the date when the Owner will cease to be responsible for maintenance. If, however, defects or deficiencies in the Works are apparent to the Engineering Manager, the certificate will be returned to the Owner unsigned with a report of the defects.

(c) After issuance of the Construction Completion Certificate the Owner is responsible for any and all repairs and replacements to any Works which may become necessary from any cause whatever, up to the end of the periods specified in Section 5.04(3)(i) after the issuance of a Construction Completion Certificate but before issuance of a Final Acceptance Certificate.

(d) If any defects become apparent in any of the Works installed or constructed and the Regional District requires repairs or replacement to be done, the Owner must, within 30 days after notice, or by the date specified by the Engineering Manager, cause such repairs or replacements to be carried out and the Regional District may recover the cost from the Owner or from the irrevocable letter of credit required pursuant to Section 7.01 of this Bylaw.

(e) The Regional District will, from the date of issue of the Construction Completion Certificate, flush and clean out the sanitary sewers as required in ordinary maintenance procedure. The cost of removing obstructions caused by gravel, rocks or silt which is other than that deposited from sewage, may be charged to the Owner.

(f) The Owner is responsible for adjusting all hydrants, hydrant and main valve boxes, and all service valve boxes to the established grades as they are developed, and maintaining the valves and appurtenances in operating condition until such time as the Engineering Manager issues the Final Acceptance Certificates for the Works. Written acceptance by

the Ministry of Transportation of the above Works, where required, must accompany the application for Final Acceptance Certificate.

(g) Maintenance (without limiting the generality of the term) for which the Owner is responsible includes:

(i) failure of or damage to underground Works resulting from materials or improper installation;
(ii) settlement of ditches;
(iii) grading, gravelling, repairs and/or replacement of highway and Lane surfaces including the access roads;
(iv) adjustments and repairs to watermains, main valves, water hydrants, hydrant valves, service lines and valves, and valve operating mechanisms including the casings enclosing these mechanisms;
(v) repairs, replacements, settlements and adjustments to sewer mains, sewer services, service accesses, service access frames, and covers;
(vi) repairs, replacements, and adjustments to street lighting fixtures and appurtenances.

(h) The Owner is advised that maintenance is a continuous operation which must be carried on until the date of issuance of the Final Acceptance Certificate for each and every work, and no releases from liability of any kind will be given by the Regional District to the Owner until all repairs and replacements required by the Regional District in the final inspection reports have been made.

(i) The Owner must maintain each of the various Works for the following periods, from the dates shown on the Construction Completion Certificates:

Sanitary sewers	Two (2) years
Water mains & hydrants	Two (2) years
Sewer and water parcel services	Two (2) years
Sewer service accesses, service access frames and covers, watermains and hydrant valves, and valve operating mechanisms, sewer and water connection valves and valve operating mechanisms and catchbasin leads	Two (2) years
Street lighting system	Two (2) years
Underground Works related to any and all utility companies	Two (2) years

(4) Procedures - Final Acceptance Certificate

The following procedures govern the issuance of Final Acceptance Certificates:

(a) Two months before expiry of the period specified in Section 5.04(3)(i) for each of the Works, or earlier if weather conditions dictate, the Owner's Engineer, following a complete inspection of the Works accompanied by the Owner or his representative, must correct all defects noted due to damage and other causes. For each of the Works, three copies of the Final Acceptance Certificate, duly signed by the Owner's Engineer will then be submitted to the Engineering Manager.

(b) After receipt of the Final Acceptance Certificate, the Engineering Manager will inspect the Works referenced in the Final Acceptance Certificate if weather conditions permit a proper inspection. If the inspection shows to the satisfaction of the Regional District and conforms to this Bylaw, the Engineering Manager will approve the Final Acceptance Certificate. If, however, defects or deficiencies are apparent to the Regional District in the Works, the Final Acceptance Certificate will be returned to the Owner unsigned with a report of the defects and deficiencies noted and with a statement of the date by which the deficiencies and defects must be corrected by the Owner at his own expense.

(c) Should the Owner fail to correct the defects or deficiencies listed in a report appended to an unsigned Final Acceptance Certificate, or to pay for any damage resulting therefrom, the Regional District may deduct the cost of correcting the deficiencies or defects or paying for damage from the Letter of Credit required pursuant to Section 7.01 of this Bylaw.

(d) When installation of the Works and services is complete and the necessary Approvals and certificates are granted, all Works will become responsibility of the Regional District.

PART 6 CONNECTIONS

6.01 PRIOR TO CONNECTION

(1) Prior to connecting Works to a Regional District system, the following are required:

(a) Approval of the layout of the proposed subdivision by the Approving Officer;

(b) Approval of Construction Completion Certificates for each of the Works, with no deficiencies;

(c) proof of registration in the Land Title Office, of all required rights-of-ways;

(d) execution of a Subdivision Servicing Agreement and deposition of a Letter of Credit with the Regional District, as required pursuant to Section 7.01 of this Bylaw.

(2) Connections to Regional District services must be made under the supervision of and in accordance with the instructions of the Engineering Manager.

6.02 AS-BUILT DRAWINGS

Upon completion of the Works and prior to release of a portion of the security, as provided for in Section 7.01(3) of this Bylaw, the following submissions are required:

(1) Drawings

Two sets of paper prints, one set of mylar as-built drawings and one set of digital drawings in Autocad or Microstation and conforming to the Regional District Drafting Standards Manual, must be submitted to the Regional District. The drawings must include:

(a) inverts, locations, offsets, and material classes;

(b) all service connections showing horizontal distance from service location to property corner, and invert elevation at property line for sanitary sewer services;

(c) x, y, z Global Positioning System (GPS) real world coordinates for curb stops, fire hydrants, valves, blow offs, service access, clean outs, sanitary service inverts and lift stations with sub 0.25 metre accuracy;

(d) all revisions made during construction;

(e) "as-built" or "as-constructed" marked on the drawings;

(f) date and seal of the Owner's Engineer.

(2) Service Connection Cards

Regional District service connection cards for each serviced lot must be submitted. The following information must be submitted:

Water:

- invert of main at connection;
- top of curb stop at property line;
- size and type of service;
- size and type of main;
- type of service saddle;
- sub 0.25 metre x, y, z Global Positioning System (GPS) coordinates for curb stop;
- location of curb stop from parcel corner;
- location of main for property line.

Sanitary sewer:

- location of service from lot corner;
- location of main from property line.
- invert of main at connection;
- invert of service at connection;

- invert of service at property line;
- size and type of service pipe;
- size and type of main;
- type of saddle;
- location of service from parcel corner;
- location of main from property line.

PART 7 LEGAL AGREEMENTS, BONDING, AND INSURANCE

7.01 SUBDIVISION SERVICING AGREEMENT

(1) Where an Owner of land proposes to construct and install Works to service more than one Residential Unit and the Works will be turned over to the Regional District, the Owner and Regional District must enter into an agreement substantially in the form shown on Schedule “E”.

(2) Special clauses established through the Approval process may be inserted into the Subdivision Servicing Agreement.

(3) The Owner must deposit with the Regional District, security in the form of a Letter of Credit in the amount of 150% of the cost of engineering, construction, and installation of the Works including road work and services as estimated by the Owner's Engineer and Approved by the Engineering Manager and the Letter of Credit must be kept in effect until the Final Acceptance Certificate is issued.

(4) As construction and installation of the required Works is completed, the amount of security may be reduced to 50% of the total cost of engineering, construction, and installation of the Works including road work and services as estimated by the Engineering Manager. The balance of security outstanding at the time of issuance of a Final Acceptance Certificate will be returned to the Owner.

(5) If the Works are not completed by the date specified in the Subdivision Servicing Agreement or if repairs or replacement is required, the outstanding balance of the amount secured may be forfeited to the Regional District and may be applied by the Regional District toward completion, repair, or replacement of the Works.

(6) Prior to officials of the Regional District commencing review of plans for Works and services required under this Bylaw, the Owner must pay to the Regional District, the fees outlined in Schedule “K”.

7.02 STATUTORY RIGHTS-OF-WAY

(1) Where an Owner constructs and installs Works necessary to serve the proposed subdivision on lands that will remain privately owned following final Approval of the subdivision, the Owner of those lands must provide to the Regional District statutory rights-of-way pursuant to section 218 of the *Land Title Act*, which are minimum width of 6.0 metres for one utility or 9.0 metres for two utilities for the operation and maintenance of Works under this Bylaw.

(2) Required statutory rights-of-way must be substantially in the form of Schedule “G”.

(3) Statutory rights-of-way must be prepared and registered by and at the expense of the Owner, and must be registered in the Land Title Office with the plan of subdivision.

7.03 INSURANCE

The Owner must at all times during construction of the Works maintain general public liability and property damage insurance in the amount of a minimum of $5,000,000 per occurrence with a deductible not to exceed $10,000. The Regional District must be an additional named insured. The Owner shall provide proof of said insurance to the Engineering Manager prior to beginning construction.

PART 8 WORKS REQUIRED

8.01 WORKS AND SERVICES

(1) Unless otherwise provided for in this bylaw, all required Works and services must be constructed and installed in accordance with the provisions of this Bylaw and at the expense of the Owner of the land being subdivided.

(2) Except when a Subdivision Servicing Agreement is entered, the Works must be completed prior to Approval of the plan of subdivision.

8.02 STANDARD DRAWINGS

Wherever possible, and in order to reduce duplication in the specification of subdivision and development servicing requirements, standard drawings have been used to depict servicing standards. The textual information in this Bylaw which prescribe the standards for servicing is to be used in conjunction with the information shown in Schedule “A”, Standard Drawings.

PART 9 HIGHWAYS, ACCESS AND DRAINAGE

9.01 HIGHWAYS

All highways must be dedicated and constructed in accordance with the requirements of the Ministry of Transportation.

9.02 ACCESS

Access to lands beyond and provision of Walkways must be dedicated and constructed in accordance with the requirements of the Ministry of Transportation.

9.03 DRAINAGE

Drainage must be provided in accordance with the standards of the Ministry of Transportation.

PART 10 WATER SUPPLY

10.01 GENERAL REQUIREMENTS

(1) All new parcels created by subdivision must be provided with sufficient quantities of Potable Water by:

(a) proving availability of sufficient quantities of potable groundwater from individual groundwater sources; or

(b) connecting to a Community Water System.

(2) Where individual groundwater sources are proposed, the Owner must prove that there are sufficient quantities of potable groundwater for each new parcel by complying with Sections 10.01(2)(a) to 10.01(2)(f), inclusive, or Sections 10.01(2)(g) and (h), inclusive.

(a) The Owner must drill a well on every new parcel and submit a well construction report signed by a registered well driller or a Professional Engineer.

(b) The well construction report must verify that the well is a minimum of 15 metres (49 feet) deep. If the well is less than 15 metres deep, then the well construction report must be accompanied by a letter from a Professional Engineer confirming that the groundwater is suitable for domestic use.

(c) The Owner must pump test each well and submit a pumping test report confirming that each well is capable of producing 2,270 litres of water per day. The pump test must be substantially in the form of Schedule “H” and include drawdown and recovery information and be signed by a qualified well driller, qualified well pump installer or a Professional Engineer.

(d) The Owner must test the water from each well for potability and submit a letter from an accredited water testing laboratory confirming that the water from all wells tested is within the criteria limits established by the current Guidelines for Canadian Drinking Water Quality, specifically referencing the aesthetic, chemical and microbiological parameters. Laboratory test results must be submitted and be accompanied by a cover letter substantially in the form of Schedule “M”.

(e) The Owner of all parcels submitting water quality test results required by Section 10.01(2)(d) must enter into an agreement with the Regional District, substantially in the form of Schedule “I”, referencing clause 1.a).

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(f) Where the water test results required in Section 10.01(2)(d)

(i) meet the chemical and microbiological parameters of the current Guidelines for Canadian Drinking Water Quality but fail to meet an aesthetic parameter, the Owner must enter into an agreement with the Regional District substantially in the form of Schedule "I", referencing clauses 1.a) and b).

(ii) fail a chemical or microbiological parameter of the current Guidelines for Canadian Drinking Water Quality, the Owner must provide confirmation from a Professional Engineer that a point of entry water treatment system capable of correcting the failed chemical or microbiological parameter can be used to service the development and the Owner must enter into an agreement with the Regional District, in the form of a section 219 covenant under the *Land Title Act,* that requires the point of entry water treatment system for all serviced buildings and advising of the water quality issue

(g) For proposed subdivisions of five or more new lots where the average size of the proposed new parcels is one hectare or less, a Professional Engineer must supervise the siting, construction and testing of all wells. The Owner must submit a groundwater hydrology report signed and stamped by a Professional Engineer that includes the following information:

(i) Describes the well construction and testing program;
(ii) Provides proof of potable groundwater requirements substantially in compliance with Sections 10.01(2)(a), (c) and (d);
(iii) Assesses the impact on neighbouring wells, the cumulative impact on the aquifer and other groundwater related issues evident in the construction and testing program; and
(iv) Acknowledges that all work undertaken is completed in accordance with current provincial regulations.

(h) The Owner of all parcels submitting a report required under Section 10.01(2)(g) must enter into an agreement with the Regional District, substantially in the form of Schedule "I", referencing clauses 1.a), b) and c) as appropriate.

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(2.1) Sections 10.01(2)(a) to (f) do not apply if the new parcel is 8 ha in size or greater and the Owner enters into an agreement with the Regional District, in the form of a section 219 covenant under the *Land Title Act*, that no habitable building will be constructed until proof of potable water requirements under Section 10.01(2) have been satisfied.

This section does not apply to parcels being created in the following areas:
(a) Toby Benches as delineated in the Toby Benches Land Use Strategy;
(b) Wycliffe as delineated in the Wycliffe Zoning Bylaw;
(c) Dry Gulch including the area south of Radium Hot Springs along Highway 93/95 in Electoral Area G.

(3) Unless a Community Water System is to be the source of Potable Water, the sharing of one well by two or more parcels is not permitted.

(4) In the case of an existing parcel with a house or business connected to and using water from a well or surface source, the Regional District may accept as proof of availability of water a notarized statement, substantially in the form of Schedule "J", from the Owner attesting to the use of the water supply. Where the water source serving an existing house or business is not located on the parcel where the existing house or business is located, an easement for access and maintenance purposes is required.

(5) Where an Owner proposes to connect to an existing Community Water System, the Owner must submit to the Regional District:

(a) a letter from the Owner of the Community Water System confirming that all parcels proposed can be connected to the water system and that fees have been paid for connection to the water system. Confirmation must be submitted prior to final Approval of the subdivision; and

(b) where the Community Water System is operated by a Strata corporation or private water utility, a current Certificate of Public Convenience and Necessity (CPCN) is required.

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(c) Section 10.01(5)(b) does not apply if the parcel being created is a parent parcel upon which further subdivision will be registered and provided the Owner enters into an agreement with the Regional District, in the form of a section 219 covenant under the *Land Title Act*, that prohibits building on the property until section 10.01(5)(b) is satisfied.

(6) Where a subdivision involves the adjustment of parcel boundaries, and a CPCN has been issued, confirmation that each parcel is serviced under the existing CPCN is required.

(7) In all subdivisions and developments where a Community Water System and fire hydrant system to be owned, operated and maintained by the Regional District is proposed, the systems must be designed, installed and otherwise meet the standards set out in this Bylaw. Where a particular requirement is not included in this Bylaw, the standards of the American Water Works Association (AWWA) must be used.

(8) The construction, extension or addition to a Community Water System must not proceed until a construction permit has been issued by the Issuing Official under the *Drinking Water Protection Act*.

(9) Where an Owner proposes to connect to a Community Water System or convert a domestic water supply from a well to a Community Water System, the well must be closed in accordance with the Groundwater Protection Regulations so that a cross connection cannot occur.

10.02 DESIGN PARAMETERS

(1) Design Pressure

Water systems must be designed to meet the following pressures:

Minimum pressure at peak demand	380 kPa
Maximum allowable pressure at house without pressure reducing valve	500 kPa
Minimum fire protection residual (at hydrant)	150 kPa
Maximum watermain pressure	800 kPa

(2) Design Flow Criteria, Domestic Demand

Design flows for domestic demand must be calculated in accordance with the current edition of the Design Guidelines for Rural Residential Community Water Systems, published by the Ministry of Environment.

(3) Design Flow Demand, Fire Flows

The design flow demand for fire flows shall not be less than the minimum flows shown:

Single-family, duplex development	60 litres/sec
Multi-family development	90 litres/sec
Commercial development	150 litres/sec
Institutional development	150 litres/sec
Industrial development	225 litres/sec

Fire flows must be in accordance with the criteria outlined in the Public Fire Protection Survey Services' publication "Water Supply for Public Fire Protection".

(4) Length of Watermains

The maximum length of any non-interconnected watermain is 220 metres. All mains exceeding 220 metres in length must be looped, except where looping is impractical, such as in short Cul-de-sac where right-of-way cannot be acquired through parcels. Dead end mains must have a blow-off valve with a minimum 50 mm diameter.

(5) Diameter of Watermains

The minimum diameter of watermains must generally conform to the following requirements:

Single-family, duplex development (dead end roads, where no expansion is planned and where no fire hydrant is to be serviced)	100 mm

Single-family, duplex development (all other cases, including any with fire hydrants)	150 mm
Multi-family development	200 mm
Commercial development	200 mm
Institutional development	200 mm
Industrial development	200 mm

(6) Fire Hydrants

(a) Fire hydrants must be installed in all subdivisions in areas served by fire protection and a Community Water System.

(b) Fire hydrants must not be located at the end of dead end streets, unless that street is to be ultimately extended, nor at the end of Cul-de-sac, unless an Approved emergency access has been constructed.

(c) Fire hydrants must be spaced no further than 150 metres apart. In multi-family, commercial, institutional and industrial areas, fire hydrants must be spaced no more than 75 metres apart.

(d) Where hydrants are located on roads with ditches, fire hydrant access paths must be installed which meet the requirements of the fire department operating in the area of the subdivision or development, and the Ministry of Transportation.

(e) Refer to Section 10.06 - Fire Hydrant Use Permit for the right to gain access to and draw water from fire hydrants.

(7) Air Release Valves, Blow-offs and Chamber Drainage

Air release valves must be installed at the summit of all mains of 200 mm diameter or larger, except where the difference in grade between the summit and valley is less than 600 mm. Chamber insulation and drainage must conform to that specified for butterfly valve chambers. A 50 mm diameter standpipe must be installed on all dead-end mains at a height of 750 mm above ground. With written Approval from the Regional District, a blow-off may be used in place of a standpipe.

(8) Valves

In general, valves must be located as follows:

(a) At intersections either in a cluster at the pipe intersection or at projected property lines:

(i) three valves at "X" intersections;
(ii) two valves at "T" intersections.

(b) Valves must be located such that any section of the system can be isolated by turning off a maximum of three valves. The section to be isolated may contain a maximum of 40 residences and a single hydrant.

(c) Valves are required at both ends of a utility right-of-way or utility easement and at a maximum spacing of 200 metres on long runs along street or easements with no interconnecting mains.

(d) Gate valves must be the same diameter as the main up to 350 mm diameter. Butterfly valves may be installed in mains 400 mm and larger. On mains 600 mm and larger, valves may be one or two sizes smaller than mains, with the Approval of the Regional District and adhering to good engineering practices, provided suitable reducers are installed.

(9) Double Check Valves

Where a Bare Land Strata development is serviced by a Regional District water system, the Owner must install a Double Check Valve enclosed in an adequately sized service access near the Strata property line on the road right-of-way. Confined space issues are to be addressed by the Owner as per WorkSafeBC regulations. A valve must be installed on each side of the service access.

(10) Curved Pipe Alignments

Curved pipe alignments are not permitted. Fittings shall be used for all alignment changes in direction.

(11) Supervisory Control and Data Acquisition (SCADA) Systems

The Owner is to provide telemetry, alarms and pump controls in all new water storage reservoirs, pumping stations, and disinfection systems for the Regional District's SCADA system.

Supply and installation of the system's SCADA will be done at the Owner's expense as identified through the plan review process.

(12) Cross Connections

There shall be no connection between the distribution system and any pipes, pumps, hydrants, or tanks whereby unsafe water or other contaminating materials may be discharged or drawn into the system.

10.03 MATERIALS

(1) Pipe

All water mains in normal service must be polyvinyl chloride (PVC) conforming to CSA B137.3; AWWA Standard C900, Class 150 or better with bell and spigot joints or as Approved by the Regional District and possessing CSA certification. All water mains crossing creeks, ravines or on steep slopes must be high density polyethelene (HDPE), butt fused DR17 or better, conforming to CSA B137.1. Service connections must be one of:

(a) Type K soft copper, conforming to ASTM specification B88;

(b) K. Tec PE-AL-PE CSA B137.9; ASTM F1282 specification; or

(c) Polyethelene series 160 PSI pipe with inserts or Approved equivalent, CSA B137.1.

(2) Valves

On all watermains up to and including those 300 mm in diameter, iron body, bronze-mounted solid wedge or double disc gate valves conforming to AWWA C500 standards must be installed. Valves must have non-rising stems and must be combined with extension spindles and valve boxes.

On all watermains larger than 300 mm in diameter, gate valves conforming to AWWA C500 standards or flanged type butterfly valves conforming to AWWA specification C504 must be installed. An insulated valve box may be used. Valves larger than 300 mm in diameter must have a 75 mm bypass valve.

Where air release valves are required, they must be double acting, vacuum type, with cast iron bodies and 0.86 MPa flanges. A ball valve must be installed beneath each air valve assembly and all air release valves must be protected from frost by insulating the valve chamber.

All valves must have the manufacturer's name.

On water distribution lines throughout the subdivision, valves must be installed to isolate sections of waterline that are no greater than 200 metres in length.

(3) Valve Boxes

Valve boxes must be telescopic Robar No. 37-72 Nelson, Macavity Telescopic Toby Boy #600IC or an equivalent Approved in advance by the Regional District. The operating rod shall extend to between 500mm and 600 mm below ground level, equipped with a rock cap.

(4) Fittings

Fittings must be PVC Class 150 (DR-18) or better conforming to CSA 137.3 AWWA C907 design.

Mechanical seal joints on fittings must be formed by a bell and preformed rubber gasket suitable for the pipe to which the joint is made. Ends must be flanged or belled to suit pipe ends.

(5) Fire Hydrants

All hydrants must be three port Terminal City C71P. Nozzle threads must conform to BC Fire Hose Thread specifications.

(6) Service Connections

The use of pressure reducing valves at the Building or house where the watermain pressure is greater than 500 kPa is required.

Service connection pipes up to 40 mm in diameter must be one of:

(a) Type K soft copper, conforming to ASTM specification B88;

(b) K. Tec PE-AL-PE CSA B137.9; ASTM F1282 specification; or

(c) Polyethelene series 160 PSI pipe with inserts or an equivalent Approved in advance by the Regional District, CSA B137.1.

Service connections must be continuous with no joints. All service connections must be hot tapped.

Service connection pipe for services larger than 40 mm in diameter must be as specified for watermain pipe and shall be PVC. All service connections to existing AC pipe must be made using double strap saddles with non-corrosive nuts, bolts and other hardware.

(7) Corporation Stops (Main Stops)

Corporation stops must be Mueller Type 300 or Ford F1000.

(8) Curb Stops and Boxes

Curb stops must be Mueller Type 300 or Ford B44 stop and drain with inlet and outlet to match service pipe.

Service boxes must be Mueller Type A-726 cast iron extension type with A-800 lids. Stationary rods must be provided.

10.04 INSTALLATION

(1) Pipe Bedding, Excavation and Backfill

Pipe bedding must be in accordance with manufacturer's specifications, or as otherwise shown in Standard Drawings No. A-1 to A-3 in Schedule “A”.

Bracing, sheeting and trench sideslopes must be in accordance with WorkSafeBC safety standards. Dewatering may be required to control trench water.

In areas of rock excavation, the rock must be removed to a minimum depth of 150 mm below the bottom of the pipe. Where the bottom of a trench is found to be unstable or unsuitable for pipe support below the depth of normal bedding, the trench must be excavated and material removed to a width and depth appropriate to establish a firm, stable base, as directed by the Engineering Manager.

Where a waterline crosses a highway, the pipe must have a carrier pipe.

The Regional District may review backfill materials and methods at any time and notify the Owner’s Engineer if methods or materials are unacceptable.

(2) Pipe Laying

Pipes must be laid in accordance with the applicable AWWA specifications, the manufacturer's recommendations and good engineering practice.

Bending of pipe is not allowed where services occur. Minimum distance from pipe bending to service shall be greater than 10.0 metres.

(3) Valves, Hydrants and Fittings

Valves, hydrants and fittings must be set plumb and directly on the centre line of the pipe. Valve boxes must be installed plumb, centred over the top of the valve and in such a manner that traffic loads are not transmitted to the valve. The top of valve boxes must be painted fluorescent orange.

Hydrants must be installed plumb and such that the pumper port faces, and is at right angles to the centreline of the road, unless otherwise Approved by the Regional District.

(4) Thrust Blocking

Concrete thrust blocking must be installed at fittings in accordance with the requirements shown on Standard Drawings No. A-9 and A-9.1 in Schedule “A”, and in such a way as to leave flange bolts and nuts free and so that proper operation of hydrant drains is not impeded.

10.05 TESTING, DISINFECTION, FLUSHING AND BACTERIOLOGICAL TESTING

(1) General Procedure Plan

Owner to submit a written plan for all testing, disinfection and flushing, 72 hours in advance of performing the work.

The Engineering Manager may witness the test at his own discretion. Should the witnessed test fail, the Re-Witnessing Test fee specified in Schedule "K", shall apply.

(2) Testing

Prior to testing, all new watermains are to be cleaned of debris by flushing. The Regional District may require that mains be video inspected. Immediately afterwards, the pipe ends must be capped in preparation for testing and disinfection. All testing must be witnessed and certified by the Owner's Engineer.

The Engineering Manager must be notified a minimum of 24 hours in advance of the leakage testing so that he may attend to witness the test, should he so elect. All test data and leakage calculations must be submitted to the Engineering Manager.

All watermains must be pressure tested with water to AWWA standards at a minimum pressure of 1030 kPa, or 1.5 times the working pressure of the main, whichever is greater. The pressure test must be maintained for a minimum of two hours. Where possible, the water system must be tested in sections consisting of the length of watermain between two consecutive valves and include all services, hydrants, fittings, and other appurtenances in that section.

The allowable leakage is determined by the following AWWA formula:

$$\frac{L = N \times D \sqrt{P}}{131000}$$

where:

L = allowable leakage in litres per hour
N = number of joints in test section (maximum to be 100)
D = inside diameter of pipe in millimetres
P = test pressure in kilopascals

At the Owner's expense, all leaks found which exceed the maximum allowable must be located and repaired and the test continued until the test leakage is less than the maximum allowable.

(3) Flushing, Disinfection, and Bacteriological Tests

All watermains must be flushed and the main pipes and services chlorinated. Chlorination procedures must conform to AWWA C 651-99. Disinfection must be in accordance with health requirements and be acceptable to the local health authority and the Engineering Manager. Water may not be flushed into sanitary sewer or storm drainage systems.

Permanent connections to the active distribution system are not permitted until watermains and appurtances are completely installed, flushed, disinfected, and satisfactory bacteriological tests received and Approved by the local health authority.

Should a temporary connection to the active distribution system be required for pressure tests, disinfection, or flushing, the new watermain is to be isolated from the active distribution system using a physical separation by means of a double check valve assembly until satisfactory bacteriological tests are received.

Upon completion, the entire piping system must be thoroughly flushed, filled with water and left in a condition ready for use.

The maintenance period does not commence until the water system leakage test has been Approved and the flushing and disinfection has been completed and bacteriological testing Approved by the local health authority.

10.06 FIRE HYDRANT USE PERMIT

(1) Any person requiring the use of a Regional District hydrant, stand-pipe or valve must first obtain from the Engineering Manager, a Fire Hydrant Use Permit, as shown in Schedule "L" and pay the fees as indicated on the Permit.

(2) The Engineering Manager shall specify as a condition of Approval of a Fire Hydrant Use Permit that:

(a) a Backflow Prevention Device be installed; and,

(b) a water meter be installed prior to the temporary use of a fire hydrant to measure the volume of water used.

(3) Every person issued a Fire Hydrant Use Permit must coordinate their requirements with the Regional District which may supply an Approved Backflow Prevention Device, water meter assembly and will turn on and off the applicable hydrant.

(4) No person, except employees of the Regional District in the course of their employment, shall open any hydrant, standpipe or valve or use water therefrom without first obtaining a Fire Hydrant Use Permit. Where a Fire Hydrant Use Permit has been issued, the Regional District reserves the right to terminate such permit and the use of the hydrant standpipe or valve, at any time, for any reason, without liability for damages of any kind which may arise as a result of such termination.

(5) Hydrants must be operated by Regional District employees only.

PART 11 SEWAGE DISPOSAL

11.01 GENERAL REQUIREMENTS

(1) The Owner must provide proof that an adequate sewage disposal method can be provided for each parcel by complying with Section 11.01(2)(a) or (b).

(2) (a) Where a new individual sewage system or a new Community Sewer System is proposed and

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(i) the estimated daily domestic sewage flows are less than 22,700 litres, the Owner must adhere to the Sewerage System Regulation (B.C. Reg. 326/2004) and provide confirmation from a Public Health Inspector, or an authorized person or professional as defined in that regulation, that each parcel is capable of supporting a Type 1 system and a 100% replacement disposal area.

(ii) where the estimated daily domestic sewage flows are greater than 22,700 litres, the Owner must adhere to the Municipal Sewage Regulation (B.C. Reg. 129/1999) and provide to the Regional District a Municipal Sewage Regulation registration number.

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(b) Where an Owner proposes to connect to an existing Community Sewer System, prior to the Regional District's final approval of the subdivision, the owner must:

(i) submit to the Regional District confirmation from the owner of the Community Sewer System that all parcels proposed can be connected to the sewer system and that connection fees have been paid; and

(ii) at the discretion of the Regional District, provide confirmation from the Ministry of Environment or a Professional Engineer that the Community Sewer System can service the proposed parcels in compliance with the Municipal Sewer Regulation and related permits.

(3) In all subdivisions and developments where a Community Sewer System to be owned, operated and maintained by the Regional District is proposed, the system must be designed, installed and otherwise meet the standards prescribed in this Bylaw. In addition, Community Sewer Systems must be designed in accordance with the requirements of the Ministry of Health and Ministry of Environment.

(4) Sewage holding tanks are not permitted within the Regional District.

11.02 DESIGN PARAMETERS

(1) Flows

The sanitary sewer system must be designed using the following Average Daily Flows:

Residential Uses	
– Non-Metered Water Services	390 litres/capita/day
– Metered Water Services	301 litres/capita/day

Institutional Uses	
– Non-Metered Water Services	390 litres/capita/day
– Metered Water Services	301 litres/capita/day
Industrial Uses	22,500 litres/day/hectare
Commercial Uses	22,500 litres/day/hectare

An infiltration rate of 0.4m^3/day/cm of pipe diameter/km of pipe must be added to the above flows.

The design flows are calculated using the Peak Daily Flows plus the infiltration rate.

Wastewater treatment plants and disposal facilities must be designed using Maximum Daily Flows:

Maximum Daily Flows = 2 x Average Daily Flows

Peak Daily Flows are 5 times the Average Daily Flow for contributing areas with population less than 1,000; and 4 times the Average Daily Flow for contributing populations of 1,000 to 3,000.

(2) Pipeline Capacity

Capacities of gravity sanitary sewer mains must be calculated using the Manning formula and must incorporate the following pipe roughness factors:

Concrete:	0.013
PVC:	0.011

Capacities of forcemains must be calculated using the Hazen-Williams formula, and incorporate a friction coefficient of 120 for all types of pipe.

(3) Pipe Size

The minimum pipe size is be 200 mm for mains and 100 mm for service connections, except that 150 mm mains may be used in culs-de-sac or for the last upstream portion of a pipe which will not be extended in the future. Forcemains will have a minimum diameter of 100 mm.

(4) Curved Pipe Alignments

Curved pipe alignments are not permitted. All deflections in pipe alignment shall take place at a service access.

(5) Design Grade and Velocity

Collector pipeline grades must be sufficient to provide for a minimum flow velocity of 0.75 metres per second at designed peak loading. Collector pipelines gradients must not exceed that which will permit flow velocities in excess of 5.5 metres per second at designed peak loading. Service grades must be a minimum of 2%.

The depth of the sewer line must be sufficient to provide gravity flow service connections to both sides of the street and must allow for future extension(s) to properly serve all of the upstream tributary lands for development.

(6) Service Accesses

(a) Service accesses are required at:
- all changes in grade;
- all changes in direction;
- all changes in pipe size;
- all intersecting sewer lines; and
- all terminal sections.

(b) Service accesses are required at a maximum of every 125 m along straight sections of the sewer line and where future extensions of the sewer line are anticipated.

(c) The minimum drop in invert levels across service accesses must be:
- straight run - 30 mm drop,
- deflections up to 45 degrees - 30 mm drop,
- deflections 45 degrees to 90 degrees - 50 mm drop.

(d) A drop pipe must be installed when the drop between inverts exceeds 0.46 metres.

(e) Design requirements for service accesses are illustrated on Standard Drawings No. A-10 to A-12, in Schedule “A”.

(7) Temporary Cleanouts

Temporary cleanouts may be provided at terminal sections of sewer main where future extension of the sewer is anticipated, provided the length of the sewer line to the downstream service access does not exceed 45 metres, and the depth of the pipe does not exceed 2 metres at the terminal point.

(8) Sanitary Pump Stations

The use of sanitary pump stations is generally discouraged and the Regional District must approve any proposal for a pump station prior to submission of any engineered drawings for a pump station. Pump stations are considered a "special case" and are to be designed by a Professional Engineer with experience in municipal engineering. The following form general design requirements for pump stations:

(a) All sanitary pump stations shall be designed with two pumps, each capable of handling the Peak Daily Flows independent of the other. Each pump shall be equipped with an automatic flush valve.

(b) Each pump must be:
- capable of passing solids up to 75 mm in size;
- equipped with hour meters;
- easily removed for maintenance;
- operate on a 347/600 volt electrical source (pump motors over 5 HP are to be 600 volt 3 phase type); and
- able to operate alternately and independently of each other.

(c) Motor cables, power cables, etc. shall be continuous from the pump station to the kiosk. Cables are not to be spliced. Only one cable is allowed in one conduit.

(d) Separate level regulators are required as follows:
- low level alarm (dry contact in pump control for telemetry);
- pumps off;
- lead pump start;
- high intermediate alarm (dry contact in pump control for telemetry);
- lag pump start; and
- high level alarm (dry contact in pump control for telemetry).

The pump control shall contain dry contacts for the telemetry of Pump #1 and #2 fail, and Pump #1 and #2 run time and pump running indicator.

(e) Level controls shall be either a ITT Flygt float level tree type (mercury) or Multi Trode system or an acceptable alternative as Approved by the Regional District and CSA certified. Guides must be used for all float levels.

(f) All auxiliary equipment and control panels shall be mounted in a secure lockable kiosk adjacent to the station. The kiosk shall be located not less than 1.2 metres and not more than 3 metres from the station lid.

(g) The control kiosk shall be designed to contain:
- all control and telemetry equipment on the front panel;
- all power equipment on the rear panel;
- an extra 120 volt receptacle;
- a receptacle and transfer switch for standby power source;
- exterior lighting mounted to the exterior of the kiosk capable of illuminating the area around the tank lid; and
- a digital clock.

(h) The kiosk shall contain a separate compartment for:
- pump control;
- service entrance;
- fan and duct; and
- isolated cable junction chamber vented to the atmosphere.

(i) The pump control panel must incorporate the following indicator lamps:

Condition		**Colour**	**Reset**
Pump on	1 for each pump	Green	
Pump fail	1 for each pump	Red	Manual
Pump motor overload	1 for each pump	Red	Manual
Motor winding high temperature	1 for each pump	Red	Manual

Moisture sensor	1 for each pump	Red	Manual
Power failure		Red	Manual
High wet well level		Red	Manual
High intermediate wet well level		Red	Manual
Low wet well level		Red	Manual

All indicator lamps must be “push to test” type.

An hour meter must be built into the panel for each pump.

An ammeter must be provided for each pump, switchable to each phase for 3 phase systems.

A complete set of spare circuit cards are to be provided where modular card-type pump controllers are used.

(j) Check valves shall be weight and lever type installed in the horizontal position.

(k) Two gate valves shall be installed on the forcemain downstream of the check valves.

(l) All stations shall require an explosion-proof intake fan which can be activated by a manual switch, and be of sufficient capacity to exchange the total volume of air inside the station with fresh air within three minutes of activation.

(m) Lift station tank:
- to be of fiberglass construction;
- to have a minimum two coats of white epoxy enamel;
- to have the bottom benched to direct all solids into the pump suction;
- to contain an access with a lockable, waterproof fiberglass or aluminum cover;
- access to be 200 mm to 500 mm above the ground;
- to contain aluminum ladder mounted so it does not interfere with the removal and installation of the pumps, etc. The ladder shall be designed to extend and lock at least 1.0 metre above the tank access;
- shall contain a platform above the high water level float to permit wet well access wherever the total depth from ground level to wet well floor exceeds 2.4 metres;
- to be constructed and situated so it is compatible to the Regional District’s confined space fall arrest and retrieval equipment;
- shall be equipped with davits and hand operated winches capable of lifting the pumps clear of the lift station; and
- shall contain explosion proof lighting capable of illuminating the interior of the tank.

(n) Each station shall provide a minimum of one day storage or alternatively an automatic generator for standby power.

(o) Provision for a SCADA system must be included.

(p) All equipment must be CSA Approved. The supplier is to provide to the Regional District three sets of Operation and Maintenance Manuals.

(q) A 50 mm water connection with standpipe for cleaning purposes must be provided at the site.

(r) Explosion proof interior light. Must be included

(s) Explosion proof fan/heater assembly must be included.

(9) Service Connections

(a) In addition to the requirements of this Bylaw, service connections must meet the requirements of the British Columbia Plumbing Code.

(b) Service connections must be provided to each parcel fronting the main. A separate service connection shall be installed for each dwelling unit of a duplex, townhouse or rowhouse that is proposed for individual ownership.

(c) The requirements for service connections are shown on Standard Drawing No. A-14 in Schedule “A”.

(d) A Y Cleanout must be placed every 22 metres where sewer service laterals are longer than 22 metres.

(e) A backflow preventer shall be installed.

(f) A cleanout must be provided adjacent to the backflow preventer.

(10) Low Pressure Sewer Systems

(a) The use of low pressure sewer systems is generally discouraged and the Engineering Manager must approve any proposal for a low pressure sewer system prior to submission of any engineered drawings for a low pressure sewer system. Low pressure sewer systems are considered a "special case" and are to be designed by a Professional Engineer with experience in low pressure sewer system engineering.

(b) Notwithstanding Section 10(a), the following standards must be met in the design of a low pressure sewer system:

(i) The on-lot low pressure lift station shall be the E/One system by the Environment One Corporation.
(ii) Minimum size of on-lot lateral shall be 30 mm.
(iii) Minimum size of branch lateral shall be 50 mm. The size of branch lateral piping sizes shall be designed by computer modeling of the network.
(iv) Every lot shall have an isolation valve installed at the property line with casing extending to the finished ground surface and operating rod extending to within 150 mm of the finished ground surface.

(11) Force Mains

In conjunction with sewer pumping facilities, the following criteria shall be noted in the design of force main systems.

(a) Velocity

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

(b) Air Relief Valve

An automatic air relief valve shall be placed at high points in the force main to prevent air locking.

(c) Termination

Force mains should enter the gravity sewer system at a point not more than 50 mm above the flow line of the receiving manhole. Manhole benching shall be a minimum of 200 mm higher than the crown of the force main. The flow shall be discharged straight into the outflow pipe with no bends in the manhole. If this is not possible, an additional discharge manhole shall be constructed which flows by gravity to the receiving system.

(d) Size

The minimum size for force mains shall be 100 mm diameter.

(e) Materials

The material selected for force mains shall meet Regional District standards and shall adapt to local conditions, such as character of industrial wastes, soil characteristics, exceptionally heavy external loadings, abrasion and similar problems.

All force mains shall be designed to prevent damage from superimposed loads, or from water hammer or column separation phenomena.

11.03 MATERIALS

(1) Pipe Materials - Collectors

Acceptable materials for collector sewers are:

- for pipes 900 mm in diameter and over reinforced concrete conforming to CSA A257.2; ASTM C76, Class III;
- for pipes 900 mm in diameter and over non-reinforced concrete conforming to CSA A257; ASTM C14, Class III;
- for pipes up to 900 mm diameter PVC conforming to CSA B137.3; ASTM D3034 with a standard dimension ratio (SDR) not exceeding 35.

(2) Service Connections

PVC conforming to CSA B137.3; ASTM D3034 must be used for all service connections.

(3) Pipe Joints

Collector sewers must be jointed using rubber gaskets or gasketted fittings and couplings.

(4) Service Access

All service accesses must be precast concrete, with a minimum inside diameter of 1220 mm, manufactured in accordance with the applicable ASTM standards, or cast in place units using 20 MPa concrete. Sections must be jointed using a flexible bituminous gasket. Grouting or joints are not permitted.

Service access slabs must be precast or cast in place using 20 MPa concrete and must be 1600 mm square.

Lids must be precast concrete and designed to withstand H-20 loading conditions.

Cast iron frames and covers shall be used. The words "Sanitary Sewer" must be embossed on the lid.

(5) Low Pressure Sewer

(a) The on-lot low pressure lift station shall be the E/One system by the Environment One Corporation.

(b) On-lot laterals and Branch laterals shall be:

(i) Polyethelene series 160 PSI pipe with inserts or an equivalent Approved in advance by the Regional District, CSA B137.1, butt fused.
(ii) Polyvinyl chloride (PVC) conforming to CSA B137.3; AWWA Standard C900, Class 150 or better with bell and spigot joints.

11.04 INSTALLATION

(1) Excavation, Pipe, Bedding, Backfill and Restoration

Excavation, bedding, backfill and restoration must conform to the standards specified in Standard Drawings No. A-1 to A-3 in Schedule “A” and as prescribed in Section 10.04(1).

Bracing, sheeting and trench sideslopes must be in accordance with WorkSafeBC safety standards. Dewatering may be required to control trench water.

In areas of rock excavation, the rock must be removed to a minimum depth of 150 mm below the bottom of the pipe. Where the bottom of a trench is found to be unstable or unsuitable for pipe support below the depth of normal bedding, the trench must be excavated and material removed to a width and depth appropriate to establish a firm, stable base, as directed by the Engineering Manager.

The Regional District may review backfill materials and methods at any time and notify engineer if methods or materials are unacceptable.

(2) Pipe Laying

Pipes must be laid in accordance with the applicable ASTM specification, Regional District requirements, CSA and the manufacturer's recommend-ations, and good engineering practice.

(3) Service Accesses, Cleanouts and Appurtenances

Service accesses must be set plumb and must be set concurrently with the laying of pipes. Service accesses must be constructed so that they are free from ground water infiltration and exfiltration of sewage. Inlet and outlet elevations must be installed with the same tolerances as specified for pipe laying. Service accesses must be constructed in accordance with Standard Drawings No. A-10 to A-12 in Schedule “A”.

(4) Service Connections

Service connections must be as shown on Standard Drawing No. A-14 in Schedule “A”, and with the same tolerances as those specified for pipe laying.

(5) Flushing

Prior to flushing and testing, all new mains must be cleaned of debris by passing a line sized "pig" through the main. The main must be video inspected immediately after flushing. Immediately afterwards, the pipe ends must be capped in preparation for testing. The video tape must be provided to the Engineering Manager prior to Approval of the Construction Completion Certificate.

(6) Testing

(a) General

The Engineering Manager must be notified a minimum of 24 hours in advance of the leakage testing so that he may attend to witness the test, should he so elect. All test data and leakage calculations must be submitted to the Engineering Manager. All testing must be witnessed and certified by the Owner's Engineer.

Test sections must normally have a service access at either end of the test section. If, however, sewer grades are such that a test section cannot be terminated at a service access without placing undue stress on the pipe or joints, apparatus must be provided to enable testing without service accesses at either end of the test section. All lot services must be installed prior to performing the air test.

(b) Air Test

(i) Where the surface level of existing groundwater in the backfilled trench is less than one metre above the top of the pipe over the length of the entire test section, or where groundwater at the time of testing is not apparent, a low pressure air test is required.

(ii) An air pressure test is the minimum time allowed for the pressure within a sewer main section to drop from 20.7 kPa to 17.2 kPa. The minimum time-air pressure loss for various diameters are as follows:

Pipe Diameter	Minimum Time
100 mm	2 minutes, 32 seconds
150 mm	3 minutes, 50 seconds
200 mm	5 minutes, 06 seconds
250 mm	6 minutes, 22 seconds
300 mm	7 minutes, 39 seconds
350 mm	8 minutes, 56 seconds

(iii) At the Owner's expense, all leaks found which exceed the minimum allowable under this Bylaw, must be located and repaired and the test continued until the test leakage is less than the maximum allowable. The maintenance period will not commence until the leakage test has been Approved.

(c) Force Mains

Force mains will be subjected to a leakage test of at least 2 hours in duration at a constant head of 1.5 times the operating pressure of the pipe. The maximum amount of leakage will be determined using the same formula as for a watermain test, as described in section 10.05 of this bylaw.

PART 12 STREET LIGHTING

12.01 GENERAL REQUIREMENTS

Where land within a Service Area established for the provision of street lighting is subdivided, street lights must be installed.

Street lights must be designed, installed and otherwise meet the requirements of BC Hydro and Power Authority; the Ministry of Transportation, in the case of street lights on highway rights-of-way; and the Regional District, in the case of street lights installed in Service Areas.

All street lighting systems must be designed by a Professional Engineer competent in lighting design.

PART 13 OTHER UTILITIES

Utilities such as storm sewer, natural gas, electricity and telephone service must be installed in accordance with the requirements of the authority having jurisdiction and the responsible utility company.

PART 14 REPEAL OF BYLAW

Bylaw No. 1334 cited as “Regional District of East Kootenay Subdivision Servicing Bylaw No. 1334, 1998” is repealed.

READ A FIRST TIME the 4th day April, 2008.

READ A SECOND TIME the 4th day of April, 2008.

READ A THIRD TIME the 4th day of day of April, 2008.

APPROVED BY THE MINISTER OF COMMUNITY SERVICES the 13th day of June, 2008.

ADOPTED the 4th day of July, 2008.

“*Gregory Deck*”	*“Lee-Ann Crane”*
CHAIR	MANAGER OF ADMINISTRATION

SCHEDULE "A"

REGIONAL DISTRICT OF EAST KOOTENAY

STANDARD DRAWINGS

A-1 TYPICAL SINGLE TRENCH CROSS SECTION

A-2 TYPICAL DOUBLE TRENCH CROSS SECTION

A-3 TYPICAL LOT SERVICE TRENCH

A-4 TYPICAL HYDRANT ASSEMBLY

A-5 STANDPIPE OR BLOW OFF DETAIL

A-6 TYPICAL VALVE INSTALLATION

A-7 TYPICAL WATER SERVICE

A-8 TYPICAL SHALLOW BURY INSTALLATION

A-9 TYPICAL THRUST BLOCK DETAILS

A-9.1 SPECIFICATIONS OF TYPICAL THRUST BLOCK DETAILS

A-10 STANDARD SERVICE ACCESS DETAILS (SEWERS 380 MM OR LESS)

A-11 DROP SERVICE ACCESS DETAILS

A-12 STANDARD SERVICE ACCESS FRAME & COVER

A-13 STANDARD CATCH BASIN DETAIL

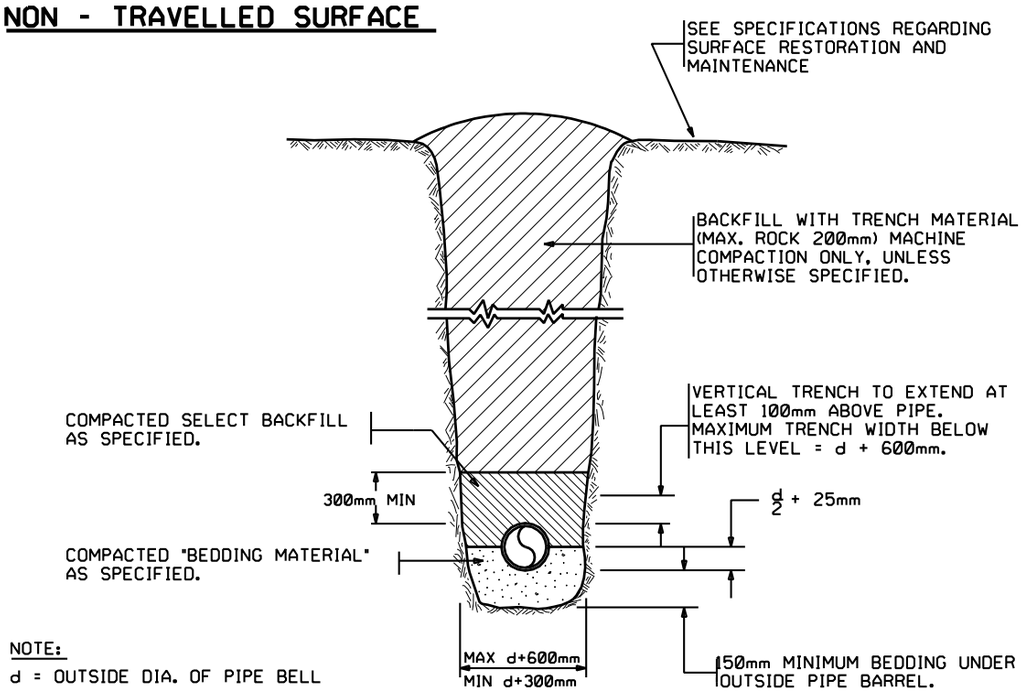
A-14 TYPICAL SEWER SERVICE

A-15 TYPICAL SEWER CLEANOUT

A-16 TYPICAL RESIDENTIAL ROAD

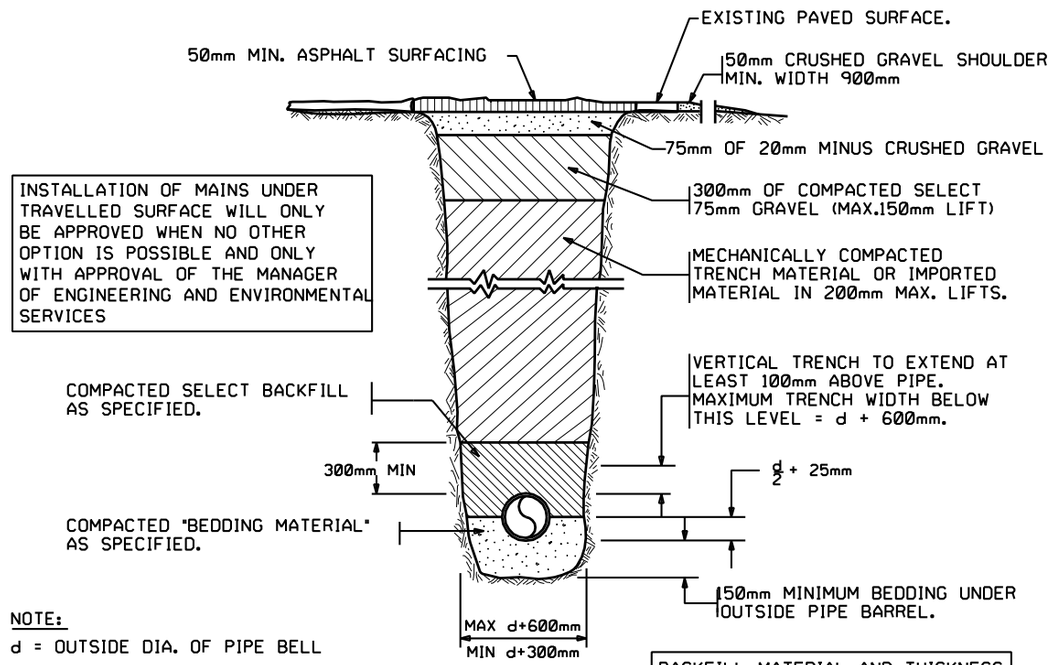
A-1 TYPICAL SINGLE TRENCH CROSS SECTION

NON - TRAVELLED SURFACE



NOTE:
d = OUTSIDE DIA. OF PIPE BELL

TRAVELLED SURFACE



INSTALLATION OF MAINS UNDER TRAVELLED SURFACE WILL ONLY BE APPROVED WHEN NO OTHER OPTION IS POSSIBLE AND ONLY WITH APPROVAL OF THE MANAGER OF ENGINEERING AND ENVIRONMENTAL SERVICES

NOTE:
d = OUTSIDE DIA. OF PIPE BELL
MIN. 98% STD. PROCTOR DENSITY FOR ALL FILL IN TRAVELLED AREAS.

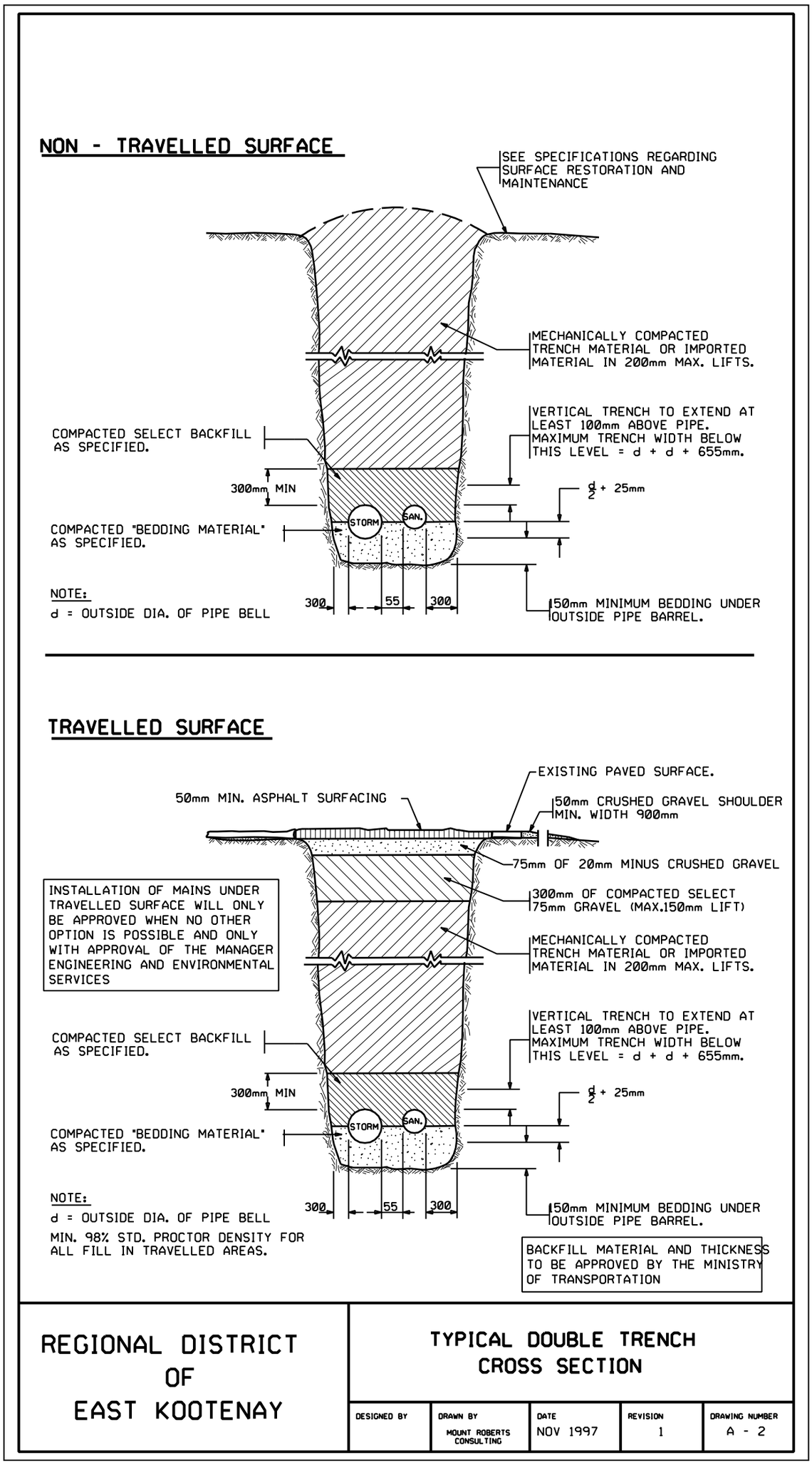
BACKFILL MATERIAL AND THICKNESS TO BE APPROVED BY THE MINISTRY OF TRANSPORTATION

REGIONAL DISTRICT OF EAST KOOTENAY

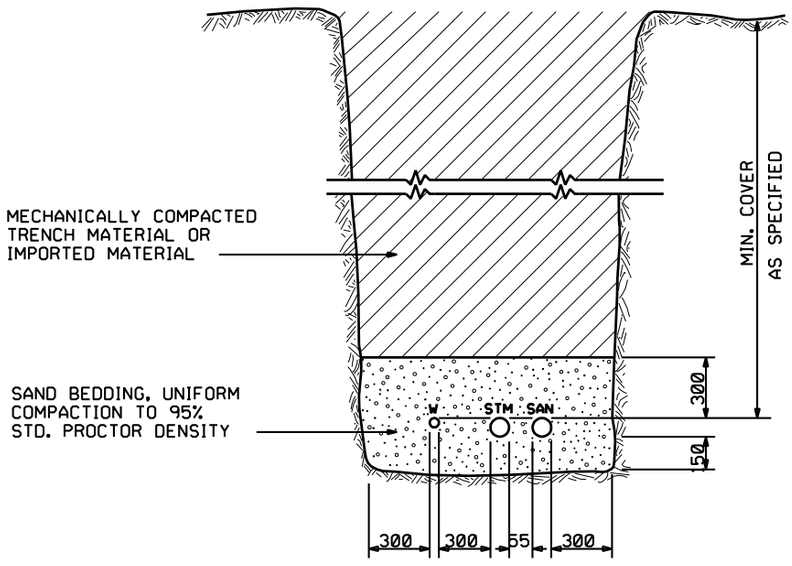
TYPICAL SINGLE TRENCH CROSS SECTION

DESIGNED BY	DRAWN BY	DATE	REVISION	DRAWING NUMBER
	MOUNT ROBERTS CONSULTING	NOV 1997	1	A - 1

A-2 TYPICAL DOUBLE TRENCH CROSS SECTION



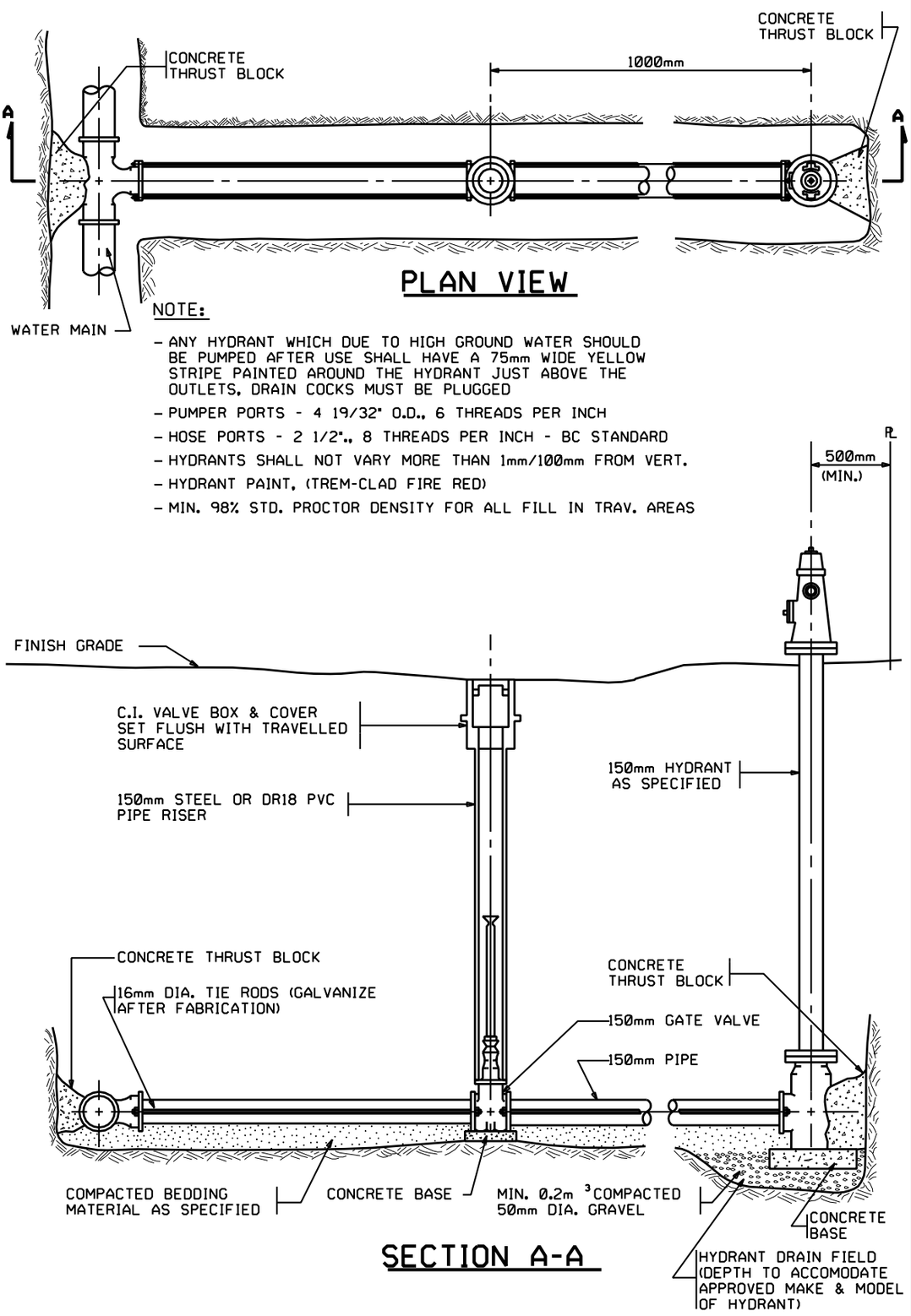
A-3 TYPICAL LOT SERVICE TRENCH



NOTE:
ALL DIMENSIONS ARE IN MILLIMETRES
UNLESS OTHERWISE SPECIFIED

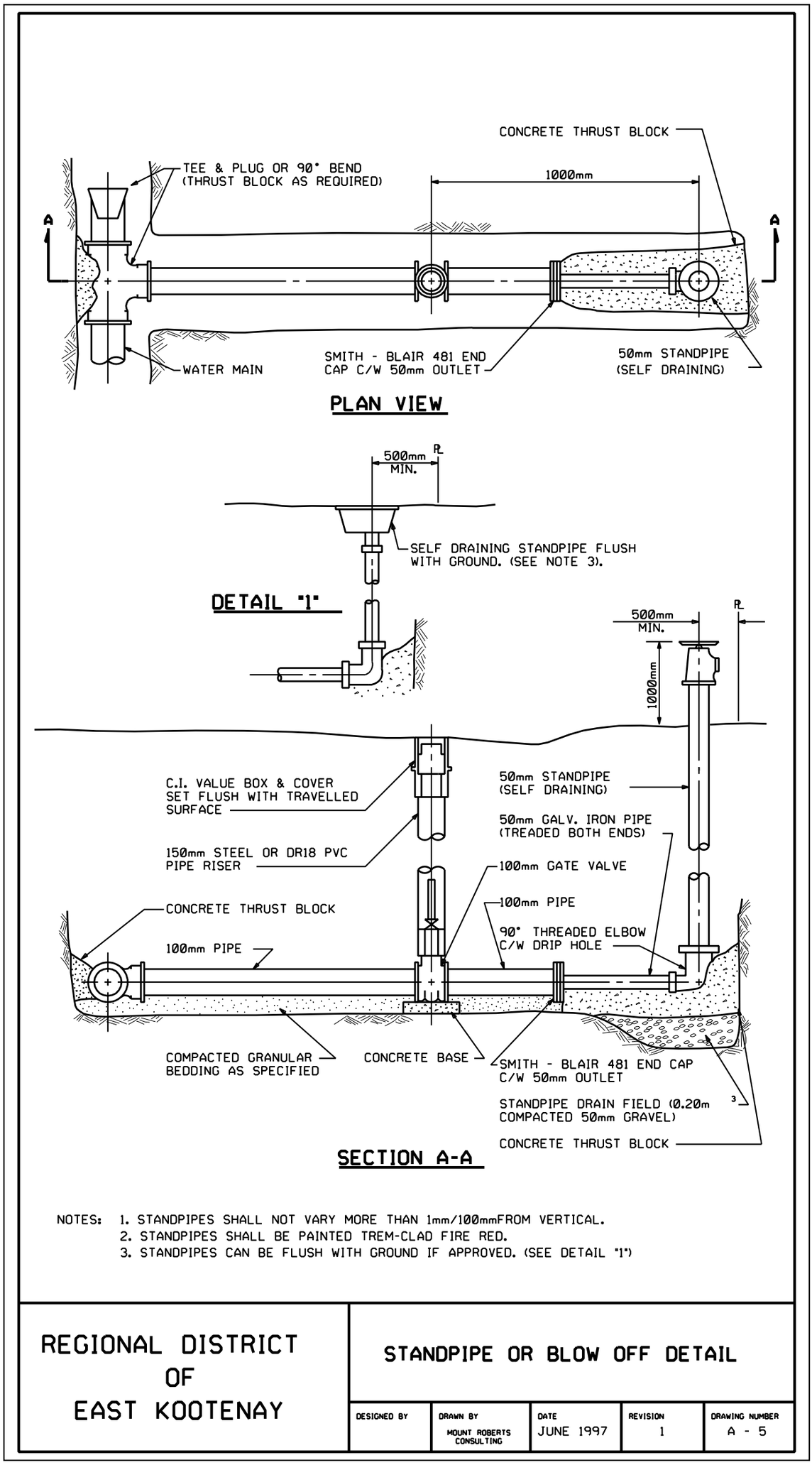
REGIONAL DISTRICT OF EAST KOOTENAY	TYPICAL LOT SERVICE TRENCH				
	DESIGNED BY	DRAWN BY: MOUNT ROBERTS CONSULTING	DATE: JUNE 1997	REVISION	DRAWING NUMBER: A - 3

A-4 TYPICAL HYDRANT ASSEMBLY



REGIONAL DISTRICT OF EAST KOOTENAY	TYPICAL HYDRANT ASSEMBLY				
	DESIGNED BY	DRAWN BY: MOUNT ROBERTS CONSULTING	DATE: JUNE 1997	REVISION: 1	DRAWING NUMBER: A - 4

A-5 STANDPIPE OR BLOW OFF DETAIL

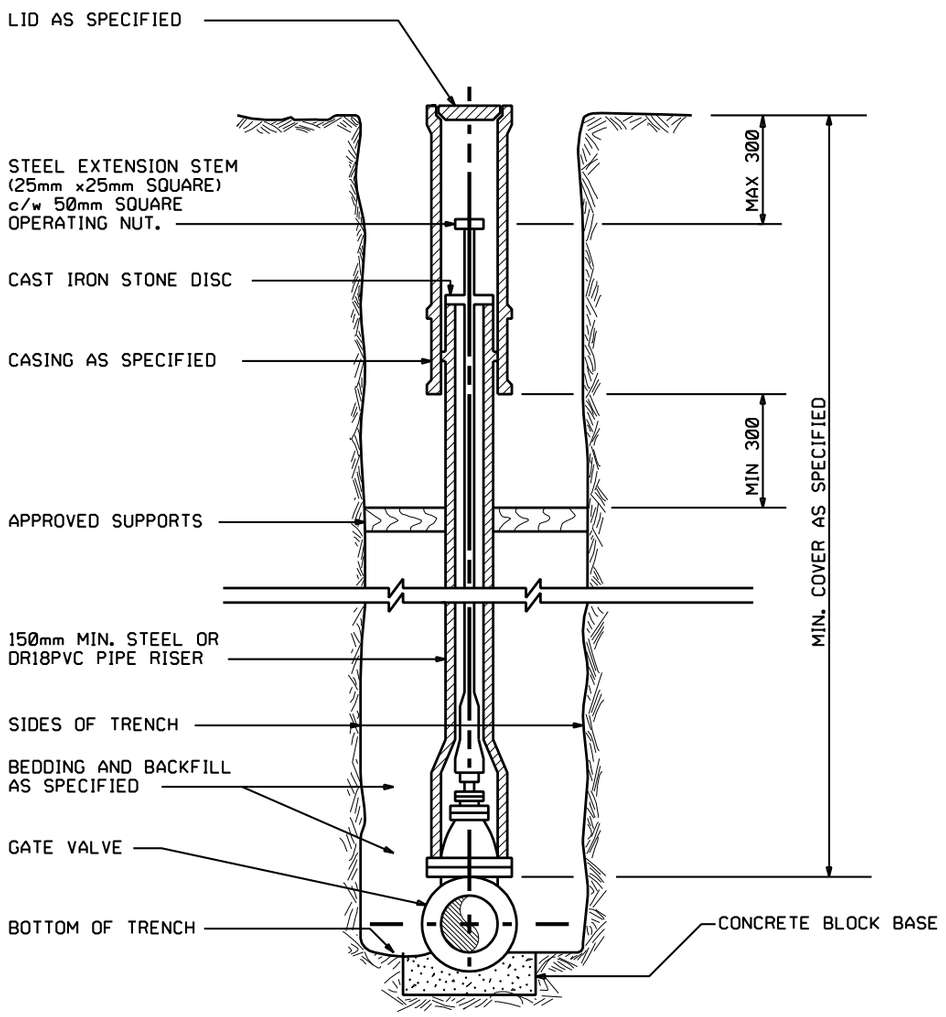


NOTES: 1. STANDPIPES SHALL NOT VARY MORE THAN 1mm/100mmFROM VERTICAL.
2. STANDPIPES SHALL BE PAINTED TREM-CLAD FIRE RED.
3. STANDPIPES CAN BE FLUSH WITH GROUND IF APPROVED. (SEE DETAIL "1")

REGIONAL DISTRICT OF EAST KOOTENAY	STANDPIPE OR BLOW OFF DETAIL				
	DESIGNED BY	DRAWN BY: MOUNT ROBERTS CONSULTING	DATE: JUNE 1997	REVISION: 1	DRAWING NUMBER: A - 5

A-6 TYPICAL VALVE INSTALLATION

NOTE:
VALVE TO BE ADEQUATELY PROTECTED
AGAINST LATERAL MOVEMENT.

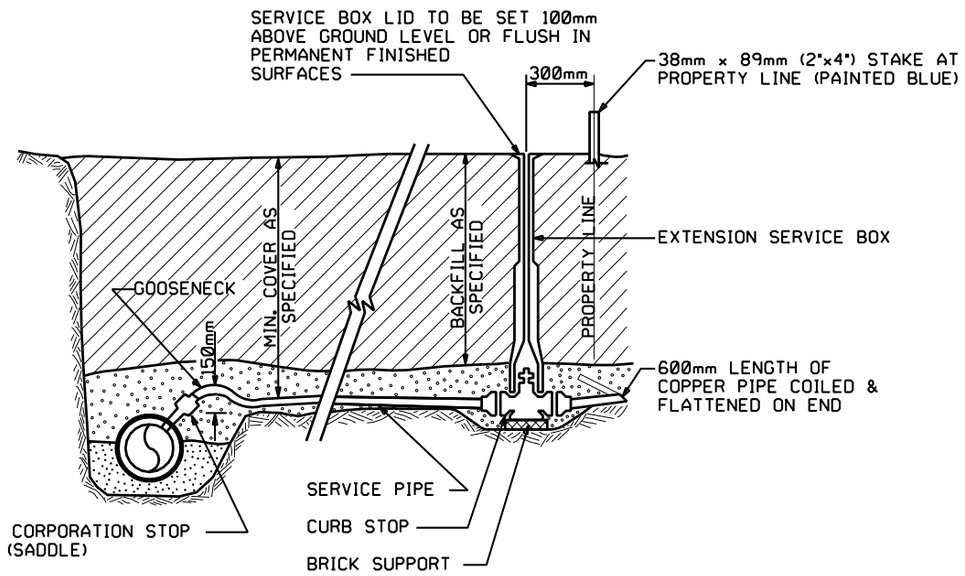


NOTE:
ALL DIMENSIONS ARE IN MILLIMETRES
UNLESS OTHERWISE SPECIFIED.

REGIONAL DISTRICT OF EAST KOOTENAY	TYPICAL VALVE INSTALLATION				
	DESIGNED BY	DRAWN BY: MOUNT ROBERTS CONSULTING	DATE: JUNE 1997	REVISION	DRAWING NUMBER: A - 6

A-7 TYPICAL WATER SERVICE

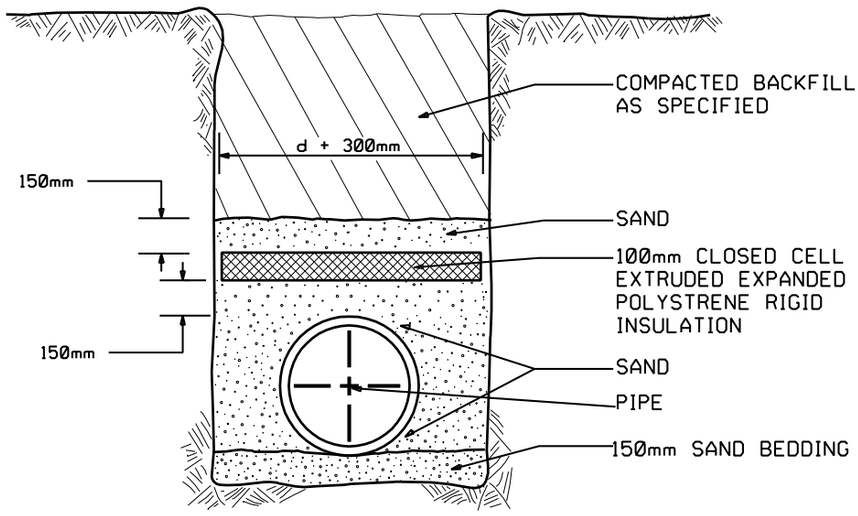
SERVICE CONNECTION



REGIONAL DISTRICT OF EAST KOOTENAY	TYPICAL WATER SERVICE				
	DESIGNED BY	DRAWN BY: MOUNT ROBERTS CONSULTING	DATE: JUNE 1997	REVISION: 1	DRAWING NUMBER: A - 7

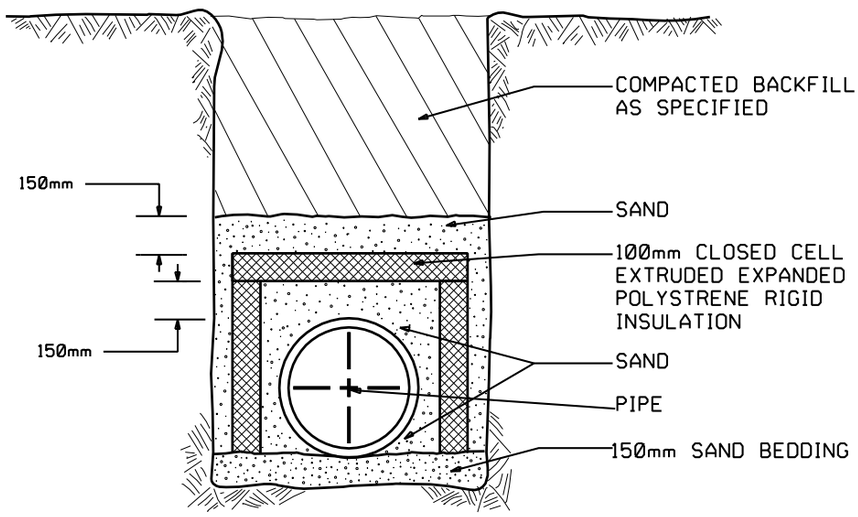
A-8 TYPICAL SHALLOW BURY INSTALLATION

METHOD 1



NOTE:
d = OUTSIDE DIA. OF PIPE BELL
MIN. 98% STD. PROCTOR DENSITY FOR
ALL FILL IN TRAVELLED AREAS

METHOD 2

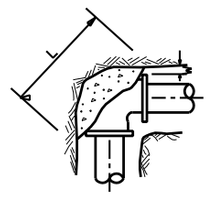


NOTE:
MIN. 98% STD. PROCTOR DENSITY FOR
ALL FILL IN TRAVELLED AREAS

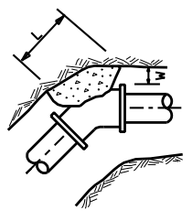
NOTE:
ALL DIMENSIONS ARE IN MILLIMETRES
UNLESS OTHERWISE SPECIFIED.

REGIONAL DISTRICT OF EAST KOOTENAY	TYPICAL SHALLOW BURY INSTALLATION				
	DESIGNED BY	DRAWN BY: MOUNT ROBERTS CONSULTING	DATE: JUNE 1997	REVISION: 1	DRAWING NUMBER: A - 8

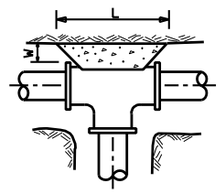
A-9 TYPICAL THRUST BLOCK DETAILS



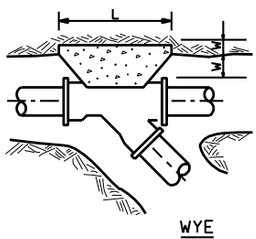
HORIZONTAL 90 ° BEND



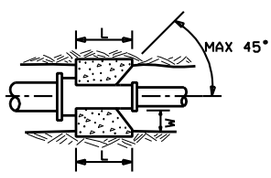
HORIZONTAL 45 ° BEND



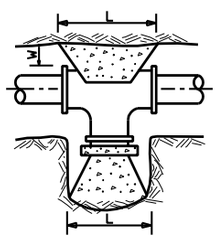
TEE



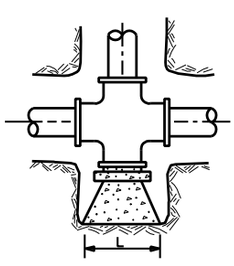
WYE



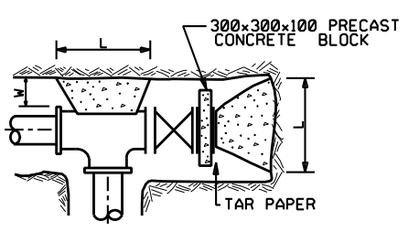
REDUCER



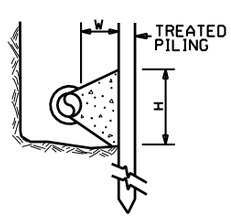
TEE WITH PLUG



CROSS WITH PLUG



TEE WITH VALVE



NOTES:

1. WHERE GROUND CANNOT BE EXCAVATED TO FREE STANDING UNDISTURBED SOIL SMALL PLANK SHEET PILING SHALL BE DRIVEN TO PROVIDE UNDISTURBED THRUST AREA. PILING TO BE DRIVEN PRIOR TO EXCAVATING FOR THRUST BLOCK. PILING SHOULD BE USED ONLY BELOW THE PERMANENT WATER TABLE.
2. MINIMUM CONCRETE STRENGTH = 20.7 MPa

NOTE:
ALL SPECIFICATIONS ARE ON DRAWING No. A-9.1

REGIONAL DISTRICT OF EAST KOOTENAY	TYPICAL THRUST BLOCK DETAILS				
	DESIGNED BY	DRAWN BY MOUNT ROBERTS CONSULTING	DATE JUNE 1997	REVISION	DRAWING NUMBER A - 9

A-9.1 SPECIFICATIONS OF TYPICAL THRUST BLOCK DETAILS

MINIMUM THRUST AREAS FOR FITTING AT 1030 kPa PRESSURE & FOR SOILS WITH MIN. BEARING OF 96 kPa
(NOT TO BE USED FOR SOFT CLAY, PEAT, ECT.)

TYPE OF FITTING	FITTING SIZE	OUTSIDE OF FITTING TO BEARING FACE	RECESS IN TRENCH WALL	LENGTH	HEIGHT	TYPE OF FITTING	FITTING SIZE	OUTSIDE OF FITTING TO BEARING FACE	RECESS IN TRENCH WALL	LENGTH	HEIGHT
	D	W	W	L	H		D	W	W	L	H
90 BEND	150	300		920	460	CROSS	150	300		610	460
	200	350		1070	610		200	350		760	610
	250	380		1450	760		250	380		990	760
	300	400		1650	920		300	400		1220	920
45 BEND	150	300		460	460	45 WYE	150	300	300	460	460
	200	350		610	610		200	350	400	610	610
	250	380		760	760		250	380	500	760	760
	300	400		920	920		300	400	600	920	920
22 1/2 BEND	150	300		460	230	REDUCER	150	300	150	460	460
	200	350		610	300		200	350	200	610	610
	250	380		760	460		250	380	250	760	760
	300	400		920	460		300	400	300	920	920
TEE	150	300		610	460	CAPS & PLUGS (IF NOT BOLTED)	150	300		460	460
	200	350		760	610		200	350		610	610
	250	380		990	760		250	380		760	760
	300	400		1220	920		300	400		920	920

REGIONAL DISTRICT
OF
EAST KOOTENAY

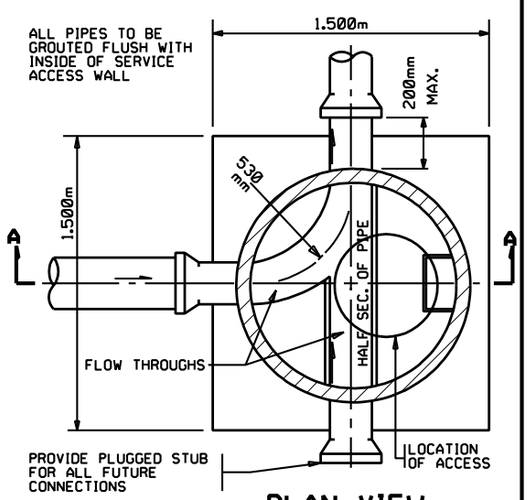
SPECIFICATIONS OF TYPICAL
THRUST BLOCK DETAILS

DESIGNED BY	DRAWN BY	DATE	REVISION	DRAWING NUMBER
	MOUNT ROBERTS CONSULTING	JUNE 1997		A - 9.1

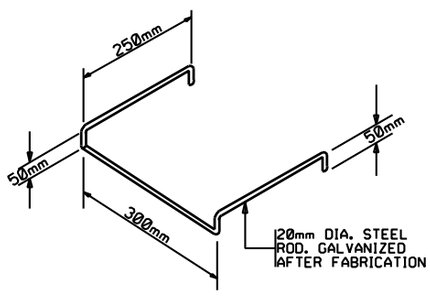
A-10 STANDARD SERVICE ACCESS DETAILS (SEWERS 380 MM OR LESS)

NOTES:

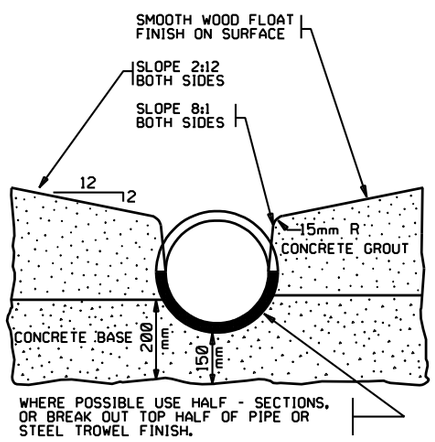
- ALL "PRECAST SERVICE ACCESS" MUST CONFORM TO A.S.T.M. SPECIFICATION C-76 FOR CLASS I REINFORCED CONC. PIPE WITH 115mm MIN. WALL THICKNESS.
- POURED IN PLACE CONC. SHALL HAVE A 28 DAY COMPRESSIVE STRENGTH OF 20.7mPa (3,000 P.S.I.)
- SERVICE ACCESS LETTERING PER SPECIFICATIONS.
- MIN. 2.5% GRADIENT THRU SERVICE ACCESS.
- INSIDE OF SERVICE ACCESS TO BE WATERPROOFED TO 900mm MIN. ABOVE TOP OF PIPE WITH WHITE WATER-PROOFING.
- RUNGS & ENTRANCE CHAMBER TO BE OPPOSITE INFLOW PIPE OF FLATTEST GRADE.
- MIN. 98% STD. PROCTOR DENSITY FOR ALL FILL IN TRAVELLED AREAS.



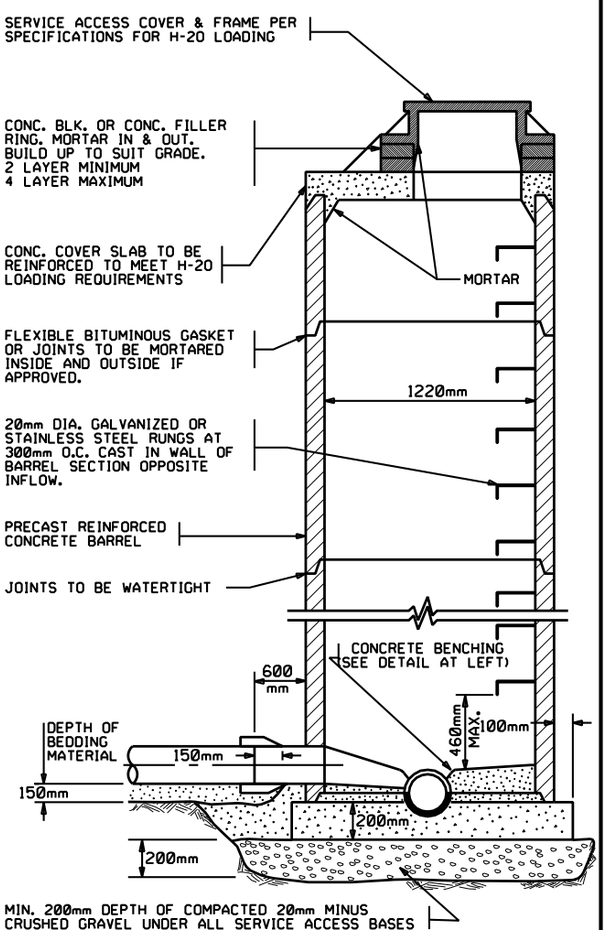
PLAN VIEW



RUNG DETAIL



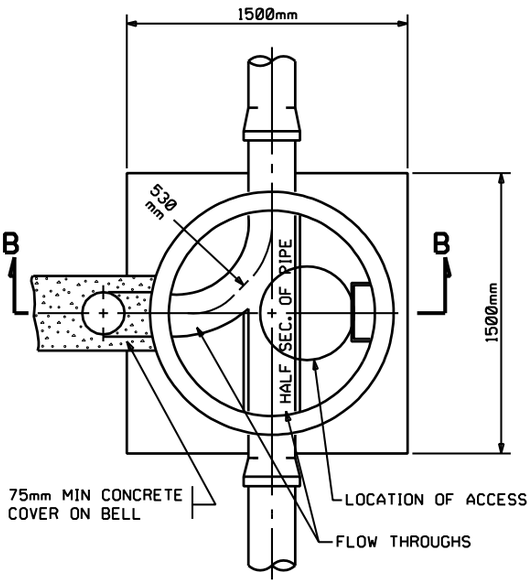
CHANNELING & BENCHING IN SERVICE ACCESS



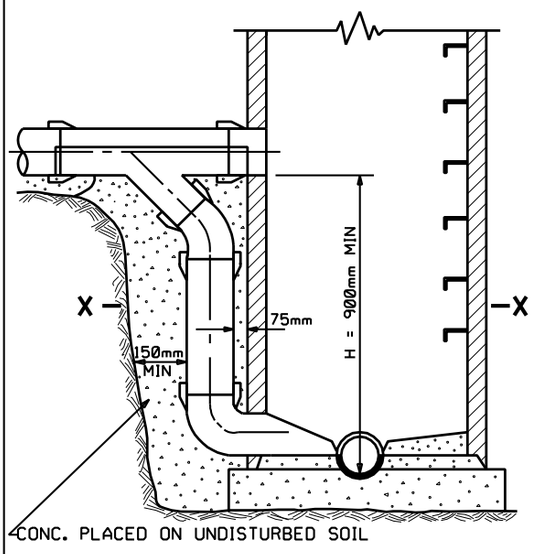
SECTION A-A

REGIONAL DISTRICT OF EAST KOOTENAY	STANDARD SERVICE ACCESS DETAILS (SEWERS 380mm OR LESS)				
	DESIGNED BY	DRAWN BY: MOUNT ROBERTS CONSULTING	DATE: JUNE 1997	REVISION: 1	DRAWING NUMBER: A - 10

A-11 DROP SERVICE ACCESS DETAILS



PLAN AT X-X SHOWING DROP



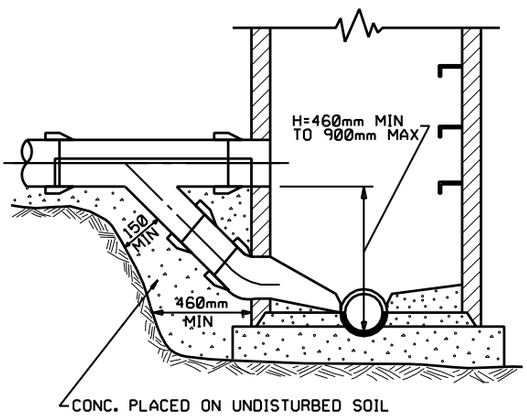
SECTION B-B

DROP SERVICE ACCESS TYPE 1

NOTE:
MIN 98% STD. PROCTOR DENSITY FOR ALL FILL IN TRAVELLED AREAS.

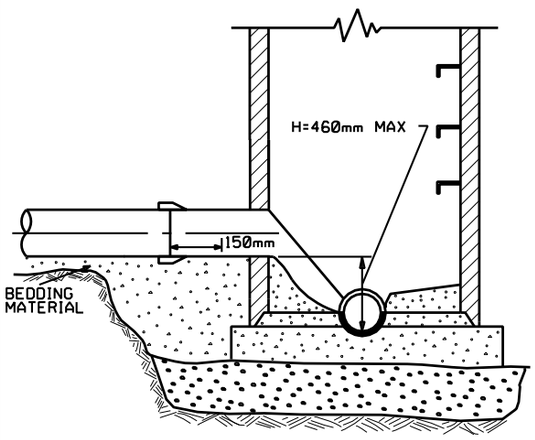
ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE SPECIFIED.

MIN CONCRETE STRENGTH = 20.7 MPa



SECTION B-B

DROP SERVICE ACCESS TYPE 2

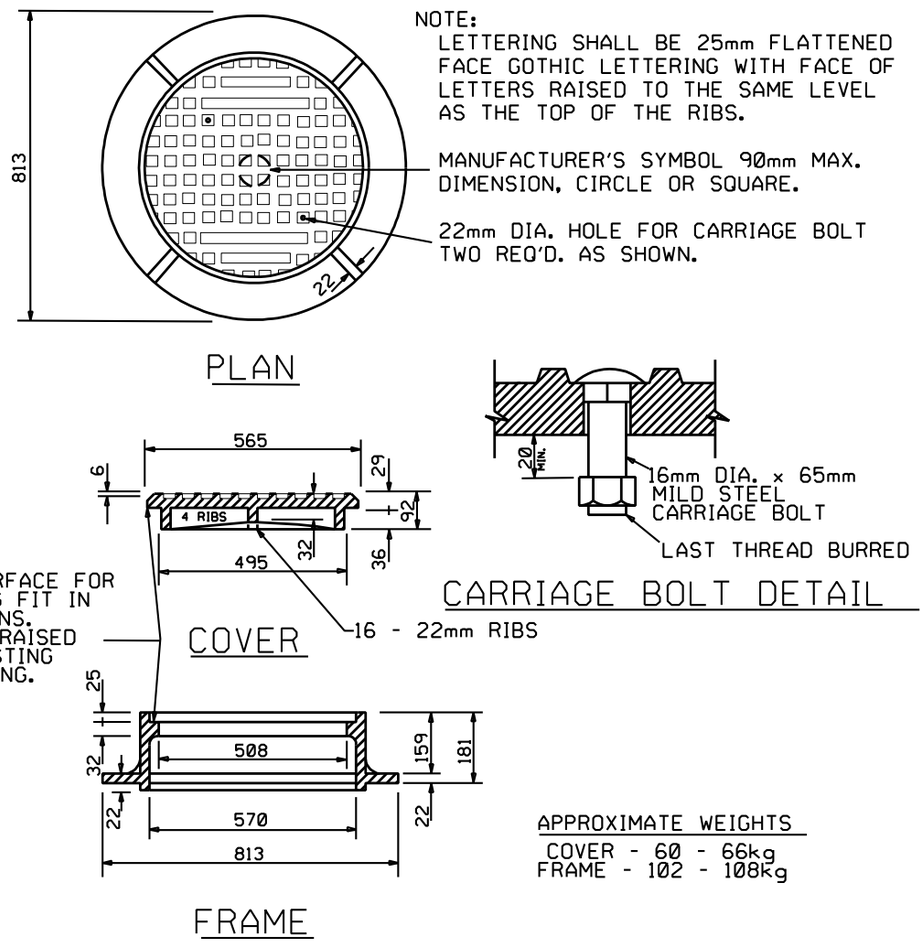


TYPICAL INTERIOR RAMP

STANDARD SERVICE ACCESS DETAILS-DROP SERVICE ACCESS FOR SEWERS 380mm DIA. OR LESS

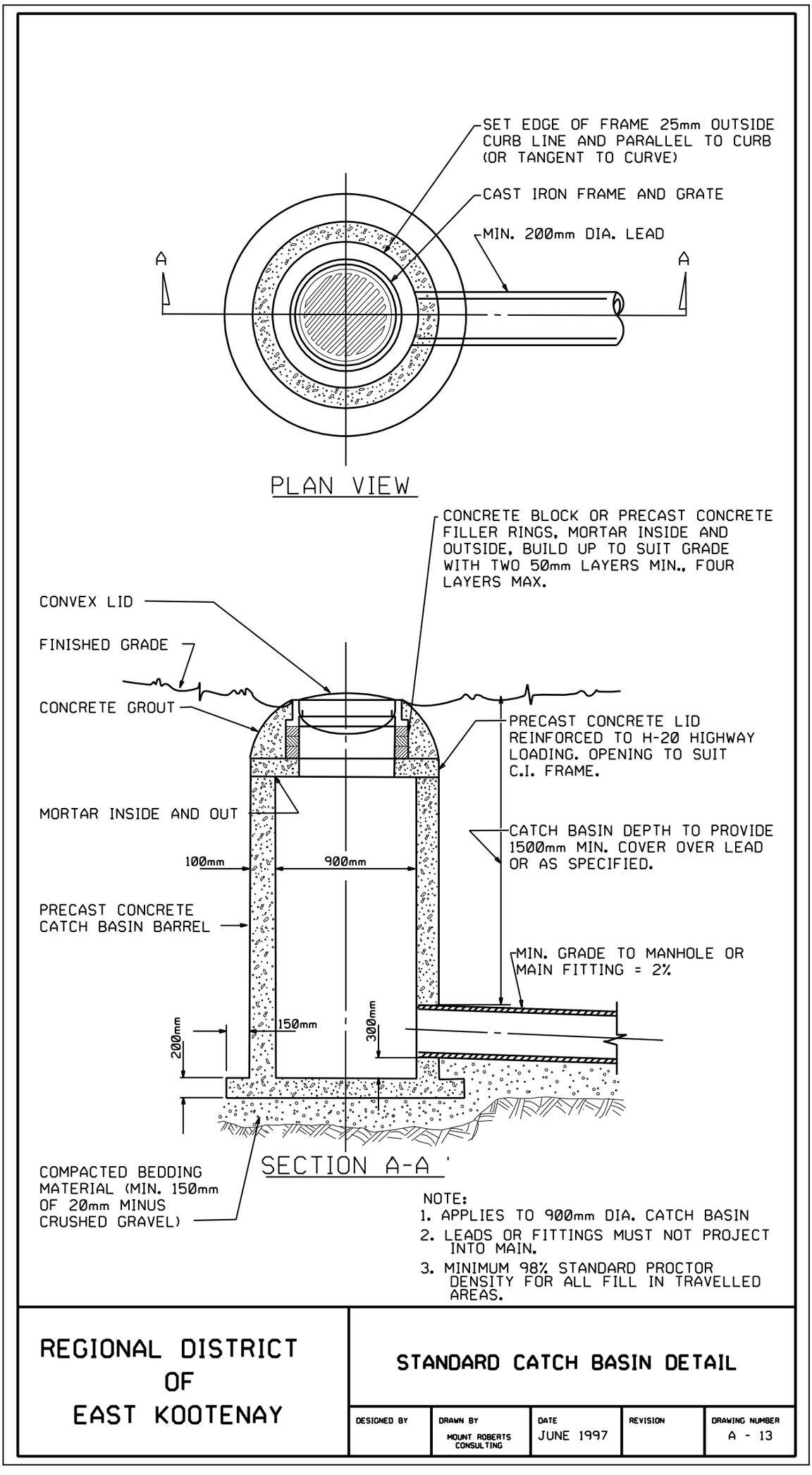
REGIONAL DISTRICT OF EAST KOOTENAY	DROP SERVICE ACCESS DETAILS				
	DESIGNED BY	DRAWN BY: MOUNT ROBERTS CONSULTING	DATE: JUNE 1997	REVISION	DRAWING NUMBER: A - 11

A-12 STANDARD SERVICE ACCESS FRAME & COVER

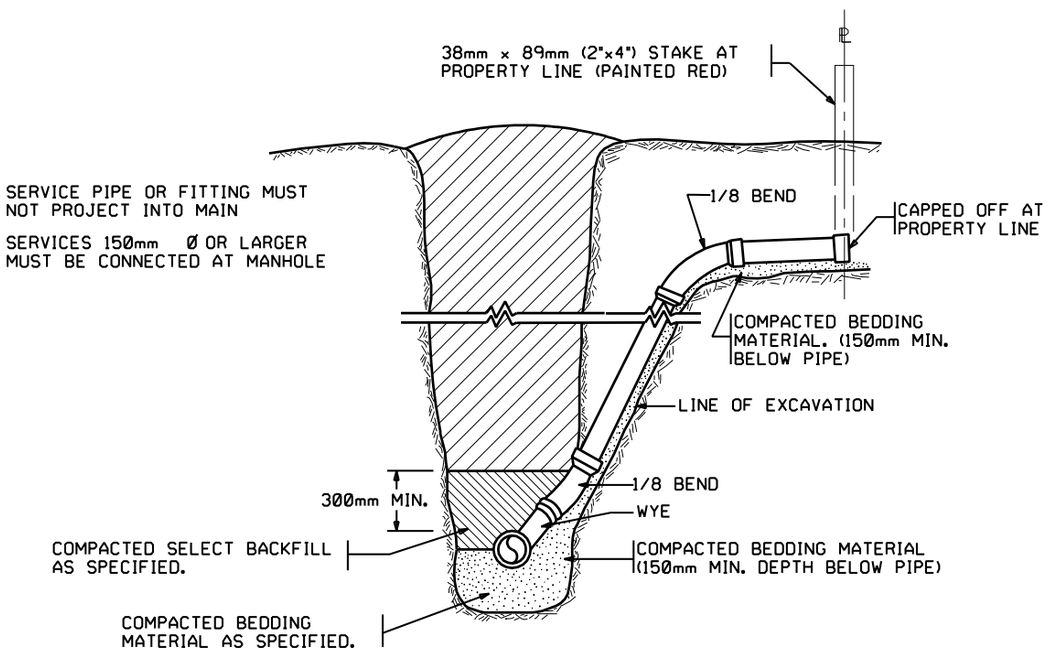


REGIONAL DISTRICT OF EAST KOOTENAY	STANDARD SERVICE ACCESS FRAME & COVER				
	DESIGNED BY	DRAWN BY MOUNT ROBERTS CONSULTING	DATE JUNE 1997	REVISION	DRAWING NUMBER A - 12

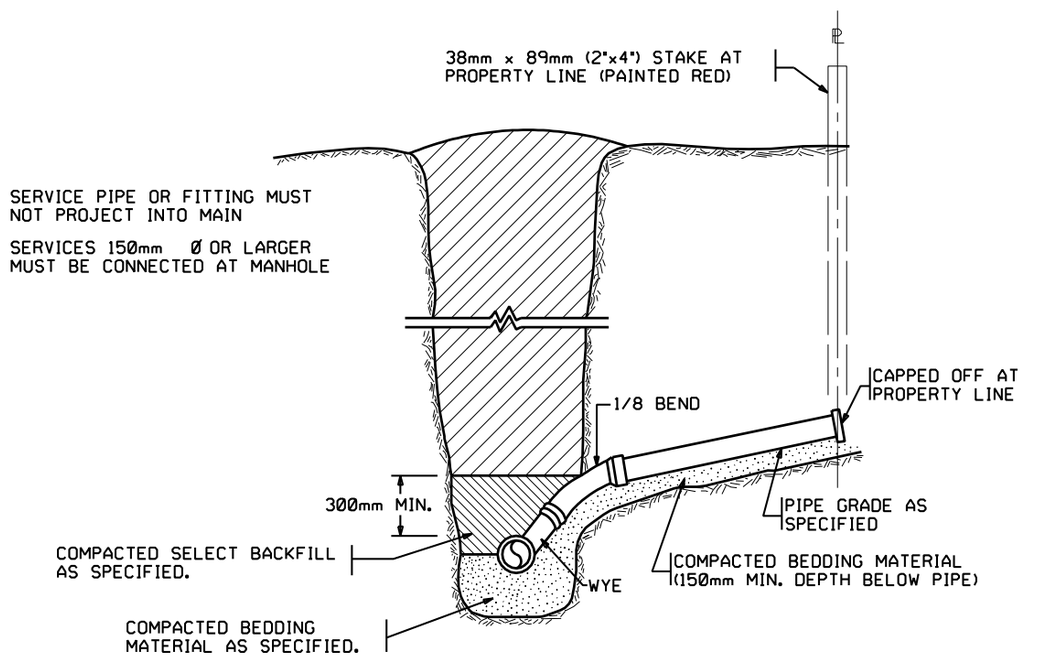
A-13 STANDARD CATCH BASIN DETAIL



A-14 TYPICAL SEWER SERVICE



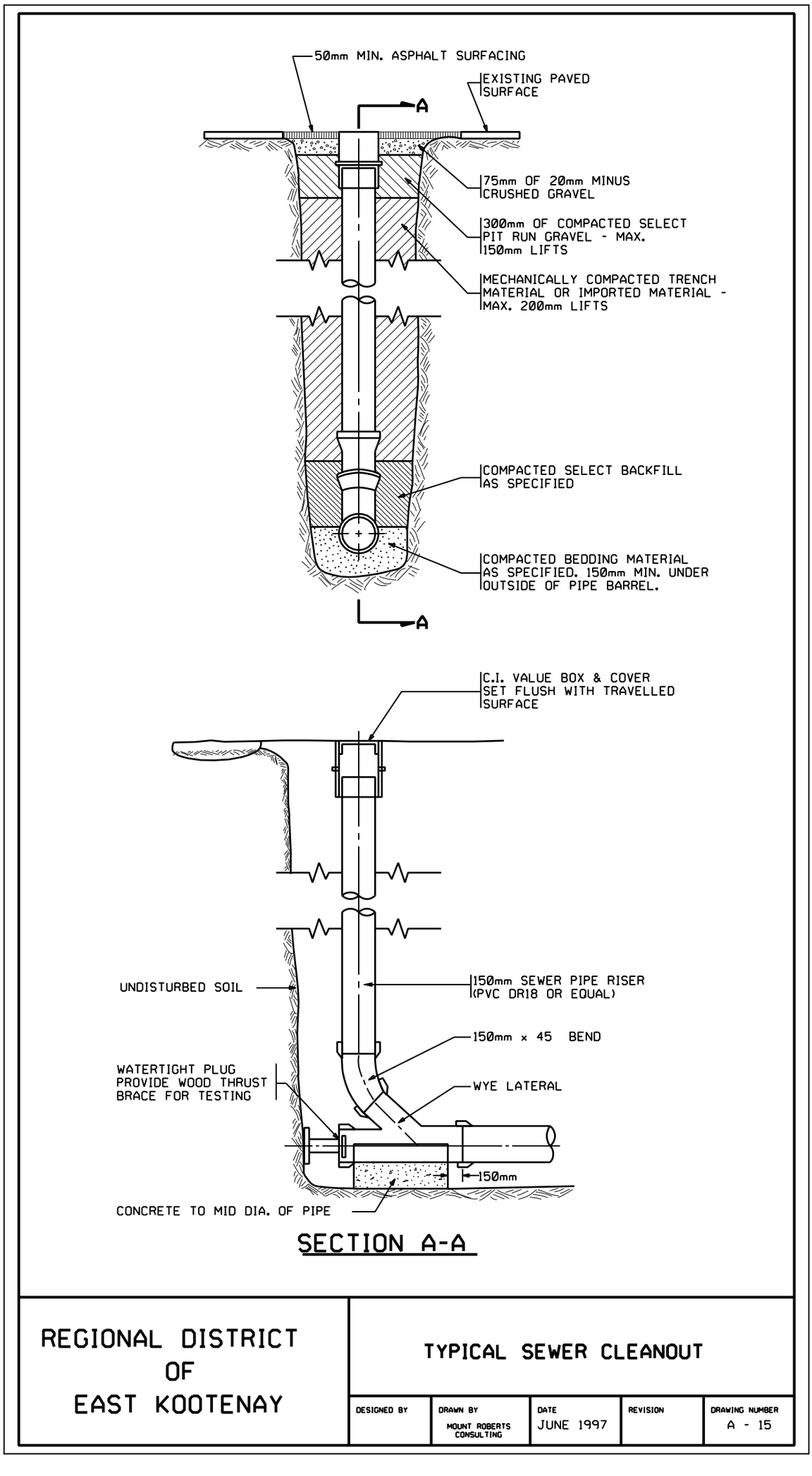
TYPICAL RISING TYPE SERVICE CONNECTION



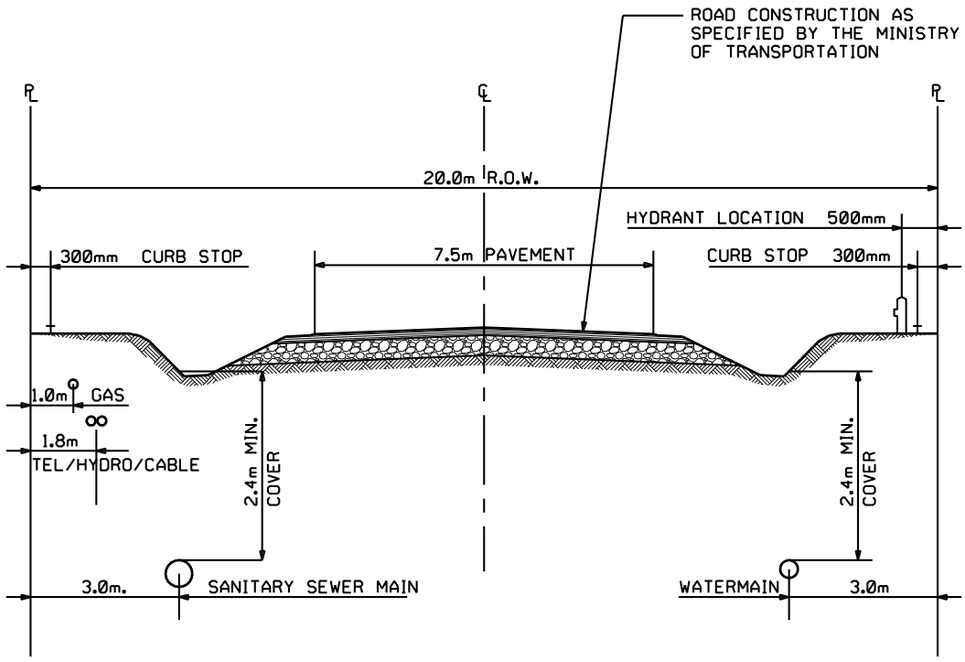
TYPICAL NON-RISING SERVICE CONNECTION

REGIONAL DISTRICT OF EAST KOOTENAY	TYPICAL SEWER SERVICE				
	DESIGNED BY	DRAWN BY MOUNT ROBERTS CONSULTING	DATE JUNE 1997	REVISION	DRAWING NUMBER A - 14

A-15 TYPICAL SEWER CLEANOUT



A-16 TYPICAL RESIDENTIAL ROAD



NOTES:

1. SHALLOW UTILITIES MAY BE REQUIRED TO BE INSTALLED ON PRIVATE PROPERTY IN AN EASEMENT.
2. SANITARY SEWER AND WATER TO BE PLACED UNDER DITCH WITH 95% COMPACTION OF TRENCH FILL.
3. MINIMUM 2.4m COVER OVER WATERMAINS, SEWER AND SERVICES.
4. IF WATER AND SEWER MAINS ARE IN THE SAME DITCH, THERE MUST BE A MINIMUM OF 3.0m SEPARATION BETWEEN THE TWO.

REGIONAL DISTRICT OF EAST KOOTENAY	TYPICAL RESIDENTAIL ROAD				
	DESIGNED BY	DRAWN BY MOUNT ROBERTS CONSULTING	DATE NOV 1997	REVISION 1	DRAWING NUMBER A - 16

SCHEDULE "B"

REGIONAL DISTRICT OF EAST KOOTENAY

CONSTRUCTION COMPLETION CERTIFICATE

SUBDIVISION: _____ WORKS:_____

OWNER: _____ AGREEMENT DATED: _____

DATE: _____ CONTRACTOR: _____

BOUNDARY OF AREA: See Map Attached

This certificate is issued pursuant to section 5.04(3) of Subdivision Servicing Bylaw No. 1954, 2008.

This certificate has been made to the best of the Owner's Engineer's knowledge, information and belief. It does not constitute a certification of any work not in accordance with the requirements of Subdivision Servicing Bylaw No. 1954, 2008 (and not listed as a deficiency on the attached list) whether or not such deficiency or defect could have been observed or discovered during construction.

I, _____, of the firm _____, hereby certify that the utility noted herein has been installed as far as can be practically ascertained according to Subdivision Servicing Bylaw No. 1954, 2008 and is complete as defined by that Bylaw. I hereby recommend this utility area for Approval of this Construction Completion Certificate.

_____
Owner

(SEAL)

_____
Owner's Engineer

Approved on _____, ___ _____
(Date) Engineering Manager
Name:

Rejected on _____, ___ _____
(Date) Engineering Manager
Name:

A list of deficiencies, dated _____, _____, to be completed or corrected is appended hereto.

I hereby certify that the items listed as deficiencies have now been completed or corrected.

Date: _____ _____
Owner's Engineer

Date:_____ Approved: _____
Engineering Manager
Name:

Date maintenance period to expire: _____

SCHEDULE "C"

REGIONAL DISTRICT OF EAST KOOTENAY

FINAL ACCEPTANCE CERTIFICATE

SUBDIVISION: _____ WORKS:_____

OWNER: _____ AGREEMENT DATED: _____

DATE: _____ CONTRACTOR: _____

BOUNDARY OF AREA: See Map Attached

MAINTENANCE EXPIRY DATE: _____

This certificate is issued pursuant to section 5.04(4) of the Regional District of East Kootenay Subdivision Servicing Bylaw No. 1954, 2008.

I, _____ of the firm _____hereby certify that as of the above date, the utility meets all the requirements for acceptance as specified by the Regional District of East Kootenay Subdivision Servicing Bylaw No. 1954, 2008, and I hereby recommend this utility for final acceptance by the Regional District.

_____
Owner

(SEAL)

_____
Owner's Engineer

Approved on _____, ___ _____
(Date) Engineering Manager
Name:

Rejected on _____, ___ _____
(Date) Engineering Manager
Name:

A list of deficiencies, dated _____, ____, to be completed or corrected is appended hereto.

I hereby certify that the items listed as deficiencies have now been completed or corrected.

Date: _____ _____
Owner's Engineer

Date:_____ Approved: _____
Engineering Manager
Name:

SCHEDULE "D"

REGIONAL DISTRICT OF EAST KOOTENAY

RESTRICTIVE COVENANT WHERE USE OF LAND DOES NOT REQUIRE POTABLE WATER AND A SEWAGE DISPOSAL SYSTEM

THIS RESTRICTIVE COVENANT dated the _____ day of _____, _____ pursuant to the provisions of Section 219 of the *Land Title Act.*

BETWEEN:

[name(s)]
[street address]
[city, province, postal code]

(the "Covenantor")

OF THE FIRST PART

AND:

REGIONAL DISTRICT OF EAST KOOTENAY,
a Regional District incorporated under the laws
of British Columbia, having an office at 19 - 24th Avenue South,
Cranbrook, BC V1C 3H8

(the "Covenantee")

OF THE SECOND PART

WHEREAS the Covenantor is the registered Owner in fee simple of all the singular those certain parcels of land in the East Kootenay Assessment Area, in the Province of British Columbia, more particularly known and described as:

[insert legal description]

(hereinafter called the "Land")

AND WHEREAS the Covenantor wishes to subdivide the Land;

AND WHEREAS the Covenantor proposes to use the land for _____, a use not requiring water or a sewage disposal system;

AND WHEREAS the Approving Officer, pursuant to the provisions of Section 219 of the *Land Title Act* and section 4.02 of Regional District of East Kootenay Subdivision Servicing Bylaw No. 1954, 2008*,* has required that this Covenant be entered into as a condition of Approval to the subdivision of the Land:

THEREFORE in consideration of $1.00 (receipt and sufficiency of which is acknowledged), the Covenantor agrees and covenants with the covenantee as follows:

1. Hereafter, the use of the land is restricted to _____, which does not require the Land to be serviced by Potable Water or a sewage disposal system.
2. Without limiting Section 1, the Land must not be used for any residential, commercial or industrial purpose.
3. No transfer of title is permitted until proof of Potable Water as required by section 10.01 of the Regional District of East Kootenay – Subdivision Servicing Bylaw No. 1954, 2008 is submitted.
4. The Covenantor will, for itself, its heirs, executors, successors and assigns, at all times perform and observe the restrictions hereinbefore set out.
5. The restrictions and covenants herein contained are covenants running with the Land and are perpetual and will be registered in the Land Title Office in Kamloops, British Columbia pursuant to Section 219 of the *Land Title Act* as covenants in favour of the Covenantee.

IN WITNESS WHEREOF the party hereto have hereunto set their hands the day and year first written above.

_____
Approving Officer, Ministry of Transportation

SCHEDULE "E"

REGIONAL DISTRICT OF EAST KOOTENAY

SUBDIVISION SERVICING AGREEMENT

THIS AGREEMENT made the ____ day of _____, ____.

BETWEEN:

REGIONAL DISTRICT OF EAST KOOTENAY,
a Regional District incorporated under the laws of
British Columbia, having an office at 19 - 24th Avenue South,
Cranbrook, British Columbia, V1C 3H8

(the "Regional District")

OF THE FIRST PART

AND:

(the "Owner")

OF THE SECOND PART

WHEREAS the Owner has applied to subdivide lands within the Regional District of East Kootenay;

AND WHEREAS the Owner desires to develop lands within the Regional District more particularly known and described as:

(hereinafter called the "lands")

AND WHEREAS the Owner is required to construct certain services within the lands in order to subdivide the lands according to a proposed plan of subdivision (hereinafter called the "development") a copy of which hereunto annexed as Schedule ___;

AND WHEREAS the Owner has requested Approval of the development prior to construction and installation of the Works and is agreeable to entering into this Agreement pursuant to the *Local Government Act* and to depositing the Letter of Credit herein specified;

OR

AND WHEREAS the Works and services will be owned and maintained by the Regional District upon Approval of the Final Acceptance Certificate by the Engineering Manager and the Owner is agreeable to entering into this agreement and to depositing the Letter of Credit herein specified;

THEREFORE in consideration of $1.00 paid by the Owner to the Regional District (receipt and sufficiency of which is acknowledged), the Owner agrees with the Regional District as follows:

1. (a) In this Agreement:

Complete or **Completion** or any variation of these words when used with respect to the development mean completion to the satisfaction of the Regional District and conforming to Subdivision Servicing Bylaw No. 1954, 2008 in part or in whole.

Owner's Engineer means the Professional Engineer registered in the Province of British Columbia whom the Owner has engaged to carry out surveys, design, field inspection and preparation and certification of as-built drawings.

Subdivision Servicing Bylaw means Bylaw No. 1954 cited as “Regional District of East Kootenay – Subdivision Servicing Bylaw No. 1954, 2008”.

Works means the works and services to be performed and constructed by the Owner as required by Subdivision Servicing Bylaw No. 1954, 2008 of the Regional District in relation to the subdivision set out in Schedule ___ hereto.

Engineering Manager means the Regional District Manager assigned responsibility for engineering matters, or his designate.

(b) Definitions contained in the Subdivision Servicing Bylaw shall also apply in this Agreement unless otherwise defined herein or unless the context otherwise requires.

2. The Owner must complete the Works herein specified described in Schedule ____ to this Agreement by the ___ day of _____,____.

3. As security for the completion and maintenance of the Works in accordance with this agreement, the Owner has deposited with the Regional District a Letter of Credit in the amount of $_____, a copy of which is attached to this agreement. The Letter of Credit must be kept in effect until the Final Acceptance Certificate is issued for the Works, provided that the amount secured by the Letter of Credit may be reduced in accordance with the Subdivision Servicing Bylaw. If the Letter of Credit is not renewed at least 14 days prior to any expiry date, the Regional District may draw upon the Letter of Credit and hold the funds as security under this agreement.

4. The construction period terminates upon the issuance of an Approved Construction Completion Certificate, signed by the Engineering Manager, which has no deficiencies to be completed or corrected. The maintenance period terminates upon issuance of an Approved Final Acceptance Certificate, signed by the Engineering Manager, which has no deficiencies to be completed or corrected.

5. The Owner agrees that if the Works are not completed pursuant to Section 2 of this Agreement, the Regional District may complete the Works, at the cost of the Owner, and for that purpose may draw down upon the Letter of Credit the full amount of such Letter of Credit. Should there be insufficient monies contained in the Letter of Credit, the Owner will pay the balance of such insufficiency upon invoice. Should the Owner complete the Works or should the completion of the Works cost less than the amount of the Letter of Credit, the Letter of Credit or such part thereof will be returned by the Regional District to the Owner upon issuance of an Approved Final Acceptance Certificate. The cost of the Works includes the actual cost of construction and installation, plus engineering, supervision, legal survey, and other costs in connection with the Works. It is understood that the Regional District may do such work either by itself or by contractors employed by it.

6. The Owner must complete the development and must grant all necessary right-of-ways as shown on the plans and specifications attached hereto as may be required by the Regional District. The Works must be to the standards required by the Subdivision Servicing Bylaw and to the Approval of the Engineering Manager. Should such work prove to be in any way defective or not operate, then the Owner must, at the expense of the Owner, modify and reconstruct the Works so that they are fully operative and function to the satisfaction of the Engineering Manager, such satisfaction to be indicated by a Construction Completion Certificate signed by the Engineering Manager.

7. The Owner covenants and agrees to comply with the provisions of all Regional District bylaws throughout the construction of the development. In the event that any material or debris should be left upon any road after the construction of the development, the Owner covenants and agrees that the Regional District may remove such material or debris at the expense of the Owner, the cost of such removal to be determined by the Engineering Manager. In the event that any invoice of the Regional District for the removal of such material or debris remains unpaid after 30 days of receipt of the same by the Owner, the Regional District is authorized to deduct the amount of such invoice from the Letter of Credit referred to in Section 3 of this Agreement.

8. The Owner must, at all times in connection with the development, keep and employ a competent general superintendent with the authority to act on behalf of the Owner and capable of speaking, reading and writing the English language and any explanations, orders, instructions, directions and requests given by the Regional District to such superintendent must be held to have been given to the Owner.

9. The Owner covenants and agrees to the following conditions of maintenance and final acceptance:

   (a) The Owner must, upon being satisfied that all of the Regional District requirements are met, submit to the Engineering Manager three copies of a Construction Completion Certificate signed by the Owner's Engineer for each of the following utilities installed:

      (i) sanitary sewers;
      (ii) waterworks;
      (iii) sewer and water lot service laterals; and
      (iv) street lighting.

   The Engineering Manager must, within one month of receipt of the Construction Completion Certificate, inspect the work with representatives of the Owner and the Owner’s Engineer.

   (b) If the inspection meets the requirements of the Subdivision Servicing Bylaw and the Engineering Manager determines that the utility or improvement is complete, the Engineering Manager will sign the Construction Completion Certificate and indicate the date when the Owner ceases to be responsible for maintenance. If, however, defects or deficiencies in the utility or improvements are apparent to the Engineering Manager, the Construction Completion Certificate will be returned to the Owner unsigned with a report of the defects.

   (c) After the issuance of the Construction Completion Certificate the Owner will be responsible for any and all repairs and replacements to any utilities and improvements which may become necessary from any cause whatever, up to the end of the maintenance periods mentioned in the said Construction Completion Certificate.

(d) If during the construction and maintenance period any defects become apparent in any of the utilities or improvements installed or constructed and the Engineering Manager requires repairs or replacement to be done, the Owner must, within a reasonable time after notice, cause such repairs or replacements to be done and if the Owner defaults, or any emergency exists, the Engineering Manager may have the repairs or replacements carried out and the Regional District may recover the cost from the Owner or from the Letter of Credit required pursuant to Section 3 of this Agreement.

(e) The Owner will, from the date of the Construction Completion Certificate, flush and clean out the sanitary sewers as required in ordinary maintenance procedures. Cost of removing obstructions caused by gravel, rocks, or silt which other than that deposited from sewage, must be borne by the Owner. All blocked sewers attributable to faulty construction must be corrected at the expense of the Owner. Prior to the issuance of the Final Acceptance Certificate, the Engineering Manager may carry out, at Regional District cost, a video inspection survey of all sanitary and storm sewer lines which are to be accepted by the Engineering Manager. Should the video inspection survey show any defects these are to be remedied by the Owner and the Owner must carry out, at his cost, any further video inspections necessary to show proof that defects are corrected. The Engineering Manager is not required to issue a Final Acceptance Certificate, until he is satisfied, acting reasonably, that defects are remedied.

(f) The Owner is responsible for adjusting all hydrants, hydrant and main valve boxes and all service valve boxes to established grades as they are developed, and maintaining valves and appurtenances in operating condition until such time as the Ministry of Transportation issues final Approval for paved streets, Lanes and curb, gutter and sidewalks.

(g) Maintenance, without limiting the generality of the term, for which the Owner must be responsible includes:

(i) failure of, or damage to, underground utilities resulting from defective materials or improper installation;
(ii) settlement of ditches;
(iii) grading, gravelling, repairs and/or replacement of road and Lane surfaces including access roads;
(iv) adjustments and repairs to watermains, main valves, water hydrants, hydrant valves, service lines and valves and valve operating mechanisms including the casing enclosing these mechanisms;
(v) repairs, replacements and adjustments to sewer mains, sewer services, service accesses, service access frames and covers; and
(vi) repairs, replacements and adjustments to street lighting fixtures and appurtenances.

(h) The Owner agrees that maintenance is a continuous operation which must be carried on until the date of issuance of the Final Acceptance Certificate for each and every utility, and no releases from liability of any kind will be given until all repairs or replacements required by the Engineering Manager in final inspection reports, have been made.

(i) The Owner must maintain each of the various utilities for the following periods, from the dates shown in the Construction Completion Certificates:

Sanitary sewers	Two (2) years
Water mains & hydrants	Two (2) years
Sewer & water parcel services	Two (2) years
Sewer service accesses, service access frames and covers, watermains and hydrant valves, and valve operating mechanisms, sewer and water connection valves and valve operating mechanisms and catchbasin leads	Two (2) years
Street lighting system	Two (2) years
Underground Works related to any and all utility companies	Two (2) years

The above dates may be extended by the Engineering Manager when compaction test results or other documented observations indicate substandard construction.

(j) Two months before expiration of the period specified in Section 10(i) of this Agreement, for each of the utilities or improvements, or earlier if weather conditions dictate, the Owner's Engineer, following a complete inspection of the utility or improvement accompanied by his contractor, must correct all defects not due to damage and other causes. For each utility, three copies of the Final Acceptance Certificate, signed by the Owner's Engineer will then be submitted to the Engineering Manager.

(k) After receipt of the Final Acceptance Certificate, the Engineering Manager will make an inspection within one month of the receipt thereof, if weather conditions permit a proper inspection. If the inspection meets the requirements of the Subdivision Servicing Bylaw and shows to the satisfaction of the Engineering Manager that the utility or improvement is acceptable, the Engineering Manager will approve the Final Acceptance Certificate. If, however, defects or deficiencies are apparent to the Engineering Manager, the Final Acceptance Certificate will be returned to the Owner unsigned with a report of the defects and deficiencies listed and with a statement of the length of time in which the defects and deficiencies must be corrected by the Owner at his own expense.

(l) Should the Owner fail to correct deficiencies or defects listed or pay for any resulting damage, the Regional District may deduct the cost of completing the Works, correcting deficiencies or defects, or paying the damage from the Letter of Credit required pursuant to Section 3 of this Agreement.

10. The Owner must submit to the Regional District final record drawings, consisting of two sets of prints, one set of mylar transparencies and one set of digital drawings of all services as constructed and as Approved by the Engineering Manager. As well, the Owner agrees to pay to the Regional District all inspection fees, administration fees, engineering fees, non-refundable levies and charges and legal costs incurred by the Regional District directly attributable to this Agreement and the cost of connecting all utilities to service the development contemplated by this Agreement.

11. The Owner covenants to save harmless and effectually indemnify the Regional District against:

    (a) all actions and proceeding costs, damages, expenses, claims and demands whatsoever and by whomsoever brought by reason of the development;

    (b) all expenses and costs which may be incurred by reason of this agreement resulting in damage to any property owned in whole or in part by the Regional District or which the Regional District by duty or custom is obliged, directly or indirectly, in any way or to any degree, to construct, repair or maintain;

    (c) all expenses and costs which may be incurred by reason of liens or non-payment of labour or materials, WorkSafeBC assessments, employment insurance, or federal or provincial tax.

12. The Regional District hereby covenants and agrees with the Owner to permit the Owner to perform all the said Works herein upon terms and conditions herein contained.

13. The Regional District covenants and agrees that upon satisfactory completion by the Owner of all covenants and conditions in this Agreement, and without limiting the generality of the foregoing, including maintenance of the said Works constructed pursuant to this Agreement and keeping the same in complete repair for a period of time as specified in Section 10 of this Agreement, to provide the Owner with a Final Acceptance Certificate for the said Works, signed by the Engineering Manager.

14. The Owner covenants and agrees that the Regional District may withhold the granting of an occupancy permit for the occupancy or use of any Building or part thereof constructed upon the said lands until all Works herein have been completed to the satisfaction of the Engineering Manager, as evidenced by the Construction Completion Certificate provided to the Owner by the Engineering Manager.

15. It is understood and agreed that the Regional District has made no representations, covenants, warranties, guarantees, promises or agreements with the Owner other than those in this agreement.

16. Wherever the singular or the masculine is used in this Agreement, the same must be construed as meaning the plural or the feminine or body corporate or politic where the context or the parties hereto so require.

17. This Agreement must enure to the benefit of and be binding upon the parties hereto, their respective heirs, executors, administrators and assigns.

18. Works required to be constructed pursuant to provisions of this agreement will, upon issuance of the Final Acceptance Certificate provided for herein, become the property of the Regional District free and clear of any claim by the Owner or any person claiming through the Owner.

(19. The Owner agrees to the following special clauses:)

.....

.....

.....

IN WITNESS WHEREOF the parties hereto have hereunto set their hands and seals the day and year first written above.

THE CORPORATE SEAL OF THE
REGIONAL DISTRICT OF EAST KOOTENAY
was hereunto affixed in the presence of:

_____

(SEAL)

_____

THE CORPORATE SEAL OF THE
OWNER was hereunto affixed
in the presence of:

_____

(SEAL)

_____

- OR -

SIGNED, SEALED AND DELIVERED
by _____
in the presence of:

_____
NAME

_____
ADDRESS

_____
OCCUPATION

The amount and form of this irrevocable letter or credit and agreement is Approved by the Chief Financial Officer for the Regional District of East Kootenay
this ___ day of _____, _____.

_____
Chief Financial Officer

SCHEDULE "F"

REGIONAL DISTRICT OF EAST KOOTENAY

FORM OF IRREVOCABLE LETTER OF CREDIT WITH AUTOMATIC ANNUAL RENEWAL

(to be typed on Bank letterhead)

To: Regional District of East Kootenay
19 - 24 Avenue South
Cranbrook, BC V1C 3H8

No.:_____
Amount:_____
Expiry Date:_____

Dear Sirs / Mesdames:

Irrevocable Letter of Credit

We hereby authorize you to draw on _____(name and address of bank) for the account of _____(name of Owner) the aggregate amount of $_____ available on demand.

Purpose

For the installation of Works and services to:
_____ (legal description of property)

1. Drawings are to be made in writing to _____ (name and address of bank)

2. Partial drawings are permitted.

3. The bank will not enquire as to whether or not the Regional District of East Kootenay has a right to make a demand on this Letter of Credit.

4. This Letter of Credit is irrevocable.

This Irrevocable Letter of Credit will expire on the above-mentioned expiry date, subject to the following condition:

> It is a condition of this Irrevocable Letter of Credit that it shall be deemed to be automatically extended without amendment for one year periods from the present or any future expiration date hereof, unless at least thirty (30) days prior to any such expiration date, [the bank] notifies the Regional District of East Kootenay in writing by registered mail or courier that [the bank] elects not to consider this Irrevocable Letter of Credit renewed for such further period.

Notwithstanding the expiration date, and the condition above, this Irrevocable Letter of Credit shall be cancelled effective the date of receipt by [the bank] of the original Irrevocable Letter of Credit instrument and a dated letter addressed to [the bank] signed by the Regional District of East Kootenay, referencing this Irrevocable Letter of Credit number and requesting the cancellation of same.

The drafts drawn under this Letter of Credit are to be endorsed hereon and must state on their face that they are drawn under _____ (name and address of bank).

Dated _____ (expiry date)

Yours truly,

_____ (Authorized signatory)

_____ (Authorized signatory)

SCHEDULE "G"

REGIONAL DISTRICT OF EAST KOOTENAY

FORM OF STATUTORY RIGHT-OF-WAY AGREEMENT

THIS AGREEMENT made the ____ day of _____, 20____.

BETWEEN:

(hereinafter called the "Grantor")

AND:

REGIONAL DISTRICT OF EAST KOOTENAY,
a regional district incorporated under the laws
of the Province of British Columbia, having an office at
19 - 24th Avenue South, Cranbrook, British Columbia, V1C 3H8

(hereinafter called the "Regional District")

WHEREAS the grantor is the registered Owner of the lands defined herein;

AND WHEREAS the Regional District requires and the grantor has agreed to grant the Regional District the statutory right-of-way defined herein;

AND WHEREAS this statutory right-of-way is necessary for the operation and maintenance of the Regional District's undertaking;

NOW THEREFORE in consideration of the premises and the sum of one dollar ($1.00) now paid by the Regional District to the grantor, receipt of which is hereby acknowledged, the Regional District and the grantor agree as follows:

1. The grantor grants in perpetuity to the Regional District the right at all times to:

   (a) enter over, in and under that portion of all and singular that certain parcel of land situated in _____, British Columbia, more particularly known as:

   (the "Land")

   which is shown outlined on

   (the "statutory right-of-way")

   and

   (i) conduct surveys and examinations;
   (ii) dig up, remove and replace soil;
   (iii) construct, install, operate, maintain, clean, cover with soil, alter, relocate, renew, inspect and replace power poles, transmission lines, pipes, culverts, retaining walls, wing walls, service accesses, meters, pumps, valves and similar equipment, or any of them, together with all ancillary attachments and fittings (all of which are collectively called the "Works");

   for the purpose of conveying, draining, protecting, metering or disposing of water, gas, sewage, liquid waste, electrical energy, communication services, or any of them;

   (b) bring on the statutory right-of-way all materials and equipment it requires or desires for any of the foregoing purposes;

   (c) clear the statutory right-of-way and keep it clear of anything which in the opinion of the Regional District constitutes or may constitute and obstruction to the use of the statutory right-of-way or to the Works;

   (d) cross over the lands for reasonable access to the statutory right-of-way and make reasonable ancillary use of the lands in respect of the Works;

   (e) peaceably hold and enjoy the rights hereby granted;

   (f) do all acts which in the opinion of the Regional District are incidental to the foregoing.

2. The grantor must:

   (a) not do or permit to be done any act or thing which in the opinion of the Regional District might interfere with, injure, impair the operating efficiency of, or obstruct access to or the use of the statutory right-of-way or to the Works;

   (b) trim, or if necessary, cut down any tree or other growth on the land which, in the opinion of the Regional District constitutes, or may constitute a danger or obstruction to those using the statutory right-of-way or to the Works;

   (c) execute all further documents and things whatsoever for the better assuring unto the Regional District of the statutory right-of-way hereby granted;

   (d) maintain, care for and clean the surface of the statutory right-of-way and remove grass and other growth from the surface of the statutory right-of-way as required by the Regional District and do all other things deemed by the Regional District to be reasonably necessary for the safe use and preservation of the statutory right-of-way.

3. The Regional District will:

   (a) use the statutory right-of-way and carry out the Works in a good and workmanlike manner in order to cause no unnecessary damage or disturbance to the grantor, the land or any improvement on the lands;

   (b) not bury, without the prior written consent of the grantor, debris or rubbish in excavations or backfill;

   (c) remove shoring and like temporary Structures as back-filling proceeds;

   (d) rake up all rubbish and construction debris it creates in order to leave the statutory right-of-way in a reasonably neat and clean condition;

   (e) exercise the utmost care not to damage the land and if the Regional District should cause such damage restore such damaged land or improvements thereon to as close to their predamaged condition as is reasonably practical with reasonable dispatch or where the Regional District deems restoration to be impractical, reimburse the grantor for all damage the Regional District caused but did not restore;

   (f) accept sole responsibility for carrying out the Works;

   (g) not be unreasonable in its opinions herein.

4. If the Regional District deems it necessary or convenient to alter the location of the statutory right-of-way or of the Works the grantor agrees to execute a new statutory right-of-way in its new location and the Works in the new location and, on execution and registration of the new agreement, this agreement will to the extent that the new agreement provides for what is granted herein be deemed to be null and void and if the alteration is at the request of the grantor, the cost of the physical relocation of the Works and preparation and execution of the amending statutory right-of-way agreement and plan must be borne by the grantor.

5. All chattels and fixtures installed by the Regional District over, on, in or under the statutory right-of-way are and will remain the responsibility of the Regional District, any rule of law or equity to the contrary notwithstanding.

6. The grantor indemnifies, saves harmless, releases and forever discharges the Regional District from and against all manner of action, claims, debts, suits, demands and promises whatever, whether known or unknown, which the grantor now has or may at any time have by reason of granting, existence or use of the statutory right-of-way or of the Works or of carrying out or failing to carry out of any of the Works or of the flooding of the land or any improvement thereon save and except for negligence by the Regional District.

7. Notwithstanding anything herein contained the Regional District reserves all rights and powers of expropriation otherwise enjoyed by the Regional District.

8. Waiver of any default by either party is not deemed to be a waiver of any subsequent default by that party; this agreement runs with the land; whenever it is required or desired that either party must deliver or serve a notice on the other, delivery or service must be deemed to be satisfactory if and deemed to have occurred when:

   (a) that party has been served personally on the date of service; or

   (b) mailed by prepaid registered mail, on the date received or on the sixth day after receipt of mailing by any Canada Post office, whichever is earlier, so long as that notice is mailed to the party at the most recent address shown on title to the land in the records of the Land Title Office for that party or to whatever address the parties from time to time may in writing agree to.

9. Whenever the singular or masculine is used in this agreement, the same is deemed to include the plural or the feminine or the body politic or corporate as the context so requires. Every reference to each party is deemed to include the heirs, executors, administrators, successors, assigns, employees, agents, officers and invitees of such party whenever the context so requires or allows. Any opinion which the Regional District is entitled by virtue of this agreement to form may be formed on behalf of the Regional District by the administrator in which event the opinion of the administrator is deemed to be the opinion of the Regional District for the purposes of this agreement. Nothing herein grants to the Regional District any interest in the riparian or littoral rights of the grantor to any land, which may accrete, to the lands. If any section, subsection, sentence, clause or phrase in this agreement is for any reason held to be invalid by the decision of a court of competent jurisdiction, the invalid portion must be severed and the decision that it is invalid must not affect the validity of the remainder of this agreement. This agreement will enure to the benefit of and be binding on the parties hereto notwithstanding any rule of law or equity to the contrary. This agreement is governed and is construed in accordance with the laws of the Province of British Columbia.

IN WITNESS WHEREOF the parties hereto have hereunto set their hands and seals the day and year first written above.

THE CORPORATE SEAL OF THE
REGIONAL DISTRICT OF EAST KOOTENAY
was hereunto affixed in the presence of:

_____

(SEAL)

_____

THE CORPORATE SEAL OF THE
GRANTOR was hereunto affixed
in the presence of:

_____

(SEAL)

_____

- OR -

SIGNED, SEALED AND DELIVERED
by _____
in the presence of:

_____
NAME

_____
ADDRESS

_____
OCCUPATION

SCHEDULE "H"

REGIONAL DISTRICT OF EAST KOOTENAY

WELL PUMPING TEST & RECOVERY INFORMATION

Owner: _____ Date: _____

Legal Description: _____ Well ID Plate No: _____

Well Pump Installer: _____ Well Pump Installer Registration #: _____

Length of Pipe Above Ground: _____ metres Static Water Level:_____ metres

Pumping Rate: _____US / Imp. Gal. (circle one)

Must monitor well until water level has recovered to at least 95%.

CLOCK TIME	ELAPSED TIME (MIN)	DEPTH TO WATER BELOW PIPE (metres)	DRAWDOWN BELOW STATIC WATER LEVEL (metres)	REMARKS PROBLEMS, DATES, ETC.
	0		0	
	30 sec			
	1 min			
	2 min			
	3 min			
	4 min			
	5 min			
	10 min			
	15 min			
	20 min			
	30 min			
	45 min			
	60 min			
	90 min			
	120 min			
RECOVERY				
	Shut Pump Off			
	30 sec			
	1 min			
	2 min			
	3 min			
	4 min			
	5 min			
	10 min			
	15 min			
	20 min			
	25 min			
	30 min			
	45 min			
	60 min			
	90 min			
	120 min			

WELL TEST

1. Measure depth to water from top of well casing (static water level).
2. Conduct pumping test for a two hour period. Record rate of pumping. Record depth to water as shown on pumping test and recovery form.
3. Record cumulative draw down.
4. Start recording recovery time as soon as pump is shut off.
5. Record recovery time as shown on back of this form for 2 hours, then hourly for 5 hours or until water reaches the same level as at the start of the pump test, whichever is sooner.
6. Record a description of the well, including depth of well, size of casing, how well was constructed and name of well driller. Provide a sketch of well location. A well driller's log may be used to provide this information.
7. Return completed documents to the Regional District of East Kootenay.

I confirm that this well is capable of producing 2,270 litres of water per day.

_____

Pump Installer's Signature

SCHEDULE "I"

REGIONAL DISTRICT OF EAST KOOTENAY

RESTRICTIVE COVENANT WHERE PROPOSED SOURCE OF WATER IS GROUNDWATER

THIS AGREEMENT made the _____ day of _____, _____ pursuant to the provisions of Section 219 of the *Land Title Act*.

BETWEEN:

[name(s)]
[street address]
[city, province, postal code]

(the "Covenantor")

OF THE FIRST PART

AND:

Regional District of East Kootenay
19 - 24th Avenue South, Cranbrook, BC V1C 3H8

(the "Covenantee")

OF THE SECOND PART

WHEREAS:

A. The Covenantor is the registered Owner in fee simple of all and singular those certain parcels of land in the East Kootenay Assessment Area, in the Province of British Columbia, more particularly known and described as:

[insert legal description]

(hereinafter called the "Land")

B. The Covenantor wishes to subdivide the Land;

C. The proposed sources of Potable Water for the subdivision use include groundwater sources.

D. A laboratory certified to analyze water samples has advised the Covenantor that the water from the wells drilled on the Land may meet the Guidelines for Canadian Drinking Water Quality (the "Guidelines").

E. The Approving Officer, as a condition of giving subdivision Approval, has required the Covenantor to prohibit development on the Land until the Interior Health Authority has provided information and advice regarding the treatment of the water to the Owner of the Land;

F. The Approving Officer, pursuant to the provisions of Section 219 of the *Land Title Act,* has required that this indenture be entered into as a condition of Approval to the subdivision of the Land:

NOW THIS AGREEMENT WITNESSETH that in consideration of the sum of One Dollar ($1.00) and other good and valuable consideration (the receipt of which is hereby acknowledged), the Covenantor does HEREBY AGREE AND COVENANT, in the terms hereinafter set forth, to a restrictive covenant with respect to the Land as follows:

1. No Building shall take place on:

   a) proposed lots [all new groundwater lots] of the subdivision until the Covenantor of the specified lot applies for and receives information and advice from the Interior Health Authority regarding the quality of the water and the treatment required for the water to meet the Guidelines. [quality covenant]

   b) proposed lots _____ of the subdivision until the Convenantor applies for and receives information and advice from the Interior Health Authority regarding the potability and treatment of the water to meet the aesthetic requirements contained in the Guidelines. [aesthetic covenant]

   c) any of the proposed lots until such time as the Covenantor has developed the groundwater sources on the Land in accordance with the terms of the groundwater hydrology report of _____ dated _____ attached hereto as Schedule "A".

2. The Covenantor agrees that the Regional District of East Kootenay may withhold issuing a building permit for the land until such time as the Covenantor has complied with the requirements of Section 1 hereof and any recommendations and/or directions from the Interior Health Authority resulting from the inquiries referred to in Section 1 of this Covenant.

3. The Covenantor hereby acknowledges and agrees that by consenting to the subdivision the Covenantee is not warranting that the water on the Land is potable or meets any specific sections of the Guidelines, and the Covenantor specifically acknowledges that it is responsible to ensure that the water on the Land is potable and meets the requirements of the Guidelines.

4. The Covenantor releases and forever discharges the Covenantee from any claim, cause of action, suit, demand, expenses, costs and legal fees which the Covenantor may have against the Covenantee for any loss or damage or injury that the Covenantee may sustain or suffer arising out of the issuance of a building permit under this Agreement or the use of the land as a result of the issuance of a building permit to construct, alter or add to a Building or Structure on the Land, or as result of the requirement to obtain Interior Health Authority information and advice regarding the potability and treatment of water to meet the requirements contained in the Guidelines.

5. The Covenantor covenants and agrees to indemnify and save harmless the Covenantee from any and all claims, causes of action, suits, demands, expenses, costs and legal fees that anyone might have as Owner, occupier or user of the land, or by a person who has an interest in or comes onto the land, or by anyone who suffers loss of life or injury to his person or property, that arises out of the issuance of a building permit under this Agreement or the use of the land as a result of the issuance of a building permit, to construct, alter or add to a Building or Structure on the land, or as a result of the requirement to obtain Interior Health Authority information and advice regarding the potability and treatment of water to meet the requirements contained in the Guidelines.

6. The Covenantor will, for itself, its heirs, executors, successors and assigns, at all times perform and observe the restrictions hereinbefore set out.

7. The restrictions and covenants herein contained are covenants running with the land and are perpetual and will be registered in the Land Title Office in Kamloops, British Columbia pursuant to Section 219 of the *Land Title Act* as covenants in favour of the Covenantee.

8. The restrictions and covenants herein contained are not cancellable without the written consent of the Covenantee.

9. This agreement will not be modified or discharged except in accordance with the provisions of Section 219 (9) of the Land Title Act.

10. In this agreement, unless the context otherwise requires, wherever the expression “Covenantor” and “Covenantee” are used herein, the same will be construed as meaning the plural, feminine or body corporate or politic where the context or the parties so require.

11. If any part of the agreement is found to be illegal or unenforceable, that part will be considered separate and severable and the remaining parts will not be affected thereby and will be enforced to the fullest extent permitted by the law.

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.

This is the instrument creating the condition or covenant entered into under Section 219 of the Land Title Act by the Covenantor referred to herein and shown on the print of the plan annexed hereto and initialed by me.

_____

Approving Officer, Ministry of Transportation

SCHEDULE "J"

REGIONAL DISTRICT OF EAST KOOTENAY

PROOF OF WATER FOR EXISTING WATER SOURCE

CANADA	)	IN THE MATTER OF THE PROPOSED SUBDIVISION
Province of	)	OF _____
British Columbia	)	_____
	)	PID #: _____
	)	INTO _____ PARCELS

TO WIT:

[INSERT LEGAL DESCRIPTION OF LAND]

(the "Lands")

I/WE , of , in the Province of British Columbia, do solemnly declare that:

1. I/We own the Lands and have owned the Lands since on or before_____.

2. I/We have resided on the Lands since on or before _____.

3. A subdivision of the Lands is presently underway.

4. The source of water used for domestic purposes on proposed Lot _____ is a well, _____ metres deep with a yield of _____.

OR

3. The source of water for domestic purposes on proposed Lot ____ is _____ (name of watercourse or waterbody).

4. The water produced by the well / watercourse / waterbody is adequate for my / our domestic purposes.

AND I/WE make this solemn declaration, conscientiously believing it to be true and knowing that it is of the same force and effect as if made under oath and by virtue of the "Canada Evidence Act".

DECLARED before me at _____	)	
in the Province of _____,	)	
this _____ day of _____ , _____.	)	_____
	)	
_____	)	
	)	
_____	)	
A Notary Public for the Province of	)	
_____.	)	
A Commissioner for taking Affidavits in	)	
_____.	)	

SCHEDULE "K" – FEES

1. Preliminary Plan Review

The following fees apply for review of plans for Works and services required under this Bylaw.

a)	First 4 parcels	$ 50.00 per parcel
	Minimum Fee	$ 200.00
b)	Additional parcels	$ 20.00 per parcel

2. Detailed Plan Review and Field Reviews

(Witness Tests, Construction Completion Certificate, Final Acceptance Certificate)

A fee of 3% of the construction cost of the Works and services as estimated by the Owner's Engineer and Approved by the Engineering Manager shall be paid to the Regional District for detailed plan and field reviews. The minimum fee is $1,500.

3. Re-witnessing Tests

The following fee applies for the Regional District to re-witness tests that have previously failed.

a)	Re-witness tests	$ 500.00 per test

4. Additional Construction Completion Certificate (CCC) Inspections

The following fee applies for a CCC re-inspection

a)	CCC re-inspection	$ 750.00 per inspection

5. Fire Hydrant Use Permit

The following fees apply for a Fire Hydrant Use Permit as set out in Schedule "L".

a)	Backflow prevention device rental	$ 50.00
b)	Water use deposit	$ 50.00 per parcel

SCHEDULE "L"

REGIONAL DISTRICT OF EAST KOOTENAY

FIRE HYDRANT USE PERMIT

Permit Number: _____

Last Name: _____ First Name: _____

Company Name: _____

Address: _____

City: _____ Province: _____ Postal Code: _____

Fire Hydrant Location: _____ Fire Hydrant # _____

Purpose: _____

Hydrant Usage Dates: From _____ To _____

Backflow Prevention Device: RDEK _____ Other _____

I HEREBY RECOGNIZE THE VALUE OF THE BACKFLOW PREVENTION DEVICE AND COMMIT TO RETURN IT IN GOOD WORKING CONDITION AND AGREE TO PAY FOR DAMAGES.
I AGREE TO ALL THE TERMS OF APPLICABLE BYLAWS AND FEES AS THEY PERTAIN TO THIS PERMIT AND GUARANTEE THE FULFILLMENT OF TERMS AND CONDITIONS SET OUT THEREIN WITHIN THE TIME SPECIFIED IN THIS PERMIT.

_____
Applicant Signature

Daily Backflow Rental:	$50.00/day
Minimum Daily Water Use Charge:	$50.00 or actual water use as determined by meter or water truck count.

Amount Paid: _____
Date Paid: _____
Receipt No.: _____

CONDITIONS:

1. The permittee shall at all times accept full responsibility for any accident that may occur or damage that may be done to any person or property whatsoever, whether caused directly or indirectly by these Works, and shall indemnify and save harmless the Regional District of East Kootenay from all claims and demands whatsoever in respect of these Works and such Works.
2. The permittee shall submit proof of insurance with minimum liability coverage of $3,000,000 and naming the Regional District of East Kootenay as an additional named insured.
3. The permittee to cover all fees indicated on the permit.
4. The permittee may provide a backflow prevention assembly as indicated on this permit.
5. This permit may be cancelled at any time at the discretion of the Regional District of East Kootenay without recourse should the permittee fail to comply with all the condition of the permit.
6. A copy of this permit shall be openly displayed at the construction site throughout the duration of the permit.

Office Use Only: Subject to the Conditions of this document, Fire Hydrant Use Permit is **Approved.**

_____ _____
Date *Engineering Manager*
Name:

SCHEDULE "M"

REGIONAL DISTRICT OF EAST KOOTENAY

FORM OF WATER QUALITY TEST RESULTS LETTER

Client: _____

Proposed Lot Identifier: _____

Ministry of Environment Well ID Plate Number: _____

Date Water Sample Received: _____

Date Water Sample Tested: _____

Date Report Results Submitted: _____

Aesthetic Objective Summary:

Parameters for Aesthetic Objectives are as set out in the "Guidelines for Canadian Drinking Water Quality Summary Table" (March, 2006). Aesthetic objectives apply to certain substances or characteristics of drinking water that can affect its acceptance by consumers or interfere with practices for supplying good quality water. For certain parameters, both aesthetic objectives and health related guidelines have been derived. Where only aesthetic objectives are specified, these values are below those considered to be a health hazard.

Aesthetic Objectives	**Status**
(Lot Identifier and Well ID)	(PASS / FAIL) (if fail, list details here)

Maximum Acceptable Concentration Summary:

Maximum Acceptable Concentrations (MAC) for both chemical and microbiological parameters are as set out in the "Guidelines for Canadian Drinking Water Quality Summary Table" (March, 2006). For parameters tested, results are generally categorized by health concerns.

MAC	**Health Status**	**Hardness Status**
(Lot Identifier and Well ID)	(PASS / FAIL) (if fail, list details here)	(HARD/SOFT)

_____

Laboratory Name & Tester's Signature