CORPORATION OF THE DISTRICT OF SUMMERLAND

SUBDIVISION AND DEVELOPMENT

SERVICING BYLAW No. 99-004

Adopted: October 25, 1999

The Subdivision & Servicing Bylaw 99-004 has been consolidated for convenience purposes only. Please contact the Engineering Department for a complete list of supplementary standard drawings.

CONSOLIDATED FOR CONVENIENCE TO INCLUDE:

Bylaw No. 2000-068
Bylaw No. 2000-219
Bylaw No. 2000-250
Bylaw No. 2000-251
Bylaw No. 2000-291
Bylaw No. 2000-326
Bylaw No. 2000-331
Bylaw No. 2000-453
Bylaw No. 2014-006
Bylaw No. 2017-028

Last Update: October 10, 2017

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Appendix B	Sample Engineering Drawings
Appendix C	Summerland Sidewalk Plan

CORPORATION OF THE DISTRICT OF SUMMERLAND

SUBDIVISION AND DEVELOPMENT SERVICING BYLAW NO. 99-004

WHEREAS pursuant to Division 11 of Part 26 of the Municipal Act, a local government, may by bylaw, regulate and require the provision of *works* for the *subdivision* or *development* of land;

NOW THEREFORE, the Mayor and Municipal Council of the Corporation of the District of Summerland, in open meeting, enacts as follows:

PURPOSE
The primary purpose of this bylaw is to establish standards for *works* which must be constructed and installed to service any *subdivision* or *development* of lands within the *District of Summerland* for the benefit of the community as a whole.

SECTION 1 - TITLE

This bylaw may be cited as the District of Summerland Subdivision and Development Servicing Bylaw No. 99-004, 1999.

SECTION 2 - INTERPRETATION

2.01 Severability

If any section, subsection, sentence, clause or phrase of this bylaw is deemed to be invalid by the decision of any court of competent jurisdiction, the invalid portion shall be severed and the decision that it is invalid shall not affect the validity of the remainder of the bylaw.

2.02 Definitions

In this bylaw, unless the context requires otherwise:

Applicant means an owner of land or his authorized agent applying for approval of a *subdivision* of the land, pursuant to the provisions of the Land Title Act, or the issuance of a building permit for a *development* other than a *subdivision.*

Approving Officer means the *Approving Officer of the District of Summerland,* or his designate appointed pursuant to the provisions of the Land Title Act.

Boulevard means that portion of *highway* between:
(a) the curb and the adjoining property, **OR;**
(b) the *road* boundary and the adjoining property, **OR;**
(c) the curb lines on the median strips or islands.
A *boulevard* does not include curbs, *sidewalks,* ditches or driveways.

Building Bylaw means the *Building Bylaw* of the *District of Summerland* as amended from time to time.

Building Inspector means the *official or officials appointed by the district Council to administer and enforce the provisions of the BC Building Code, the District's Building Regulations Bylaw and/or this Bylaw.*

Certificate of Total Performance means a certificate issued by the *District of Summerland Director of Engineering and Public Works* indicating that:

(a) *total performance* of the *work* has been achieved, **AND**;
(b) the *Applicant* has complied with the requirements listed in *Section 5.06* titled *Certificate of Total Performance.*

community sewer system means the construction of a sanitary sewer collection system and connection to a sanitary sewer system or a system of sewage disposal works that is owned, operated and maintained by the *District of Summerland.*

community water system means the construction of a system of works for the distribution of water and connection to a system of water works as referred to in the safe drinking water regulation (B.C. Reg. 230/92) pursuant to the Health Act which is owned, operated, and maintained by the *District of Summerland* or an improvement district.

completion certificate must be interpreted as defined in the *Building Bylaw* as amended from time to time.

contractor means the person, firm or corporation retained by the *Owner,* directly or indirectly to construct, erect, or install the *work.*

cul-de-sac means a *highway* which has only one point of intersection with another *highway* and that terminates in a vehicle turning area that is permanently closed except for access by way of a *lane* or a *walkway.*

development or ***developed*** means the construction, alteration, or extension of buildings and structures for any use authorized by the *Zoning Bylaw* that requires issuance of a building permit.

Bylaw 2000-250 amended by adding the following definition (June 12, 2006):

Director of Parks and Recreation' means the **Director of Parks and Recreation** of the District of Summerland or his designate.

drainage system means the construction of a system of works designed and constructed to direct the flow of storm water and/or ground water.

Electrical Supervisor means the Electrical Supervisor for the District of Summerland

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

field reviews mean the *Owner' s Engineer's* review of the *work* pursuant to Schedule B.1.

final approval with respect to *subdivision,* means approval of a *subdivision* pursuant to Section 88 of the Land Title Act and; with respect to *development,* means issuance of a *Certificate of Total Performance* and issuance of a *completion certificate.*
frontage means the width of a *parcel* measured along the shortest *parcel* boundary which immediately adjoins a *highway* other than a *lane* or a *walkway.*

highway must be interpreted as defined in the Municipal Act as amended from time to time.

highway, arterial must be interpreted as defined in the Highway Act as amended from time to time.

highway, collector must be interpreted as defined in the Highway Act as amended from time to time.

highway, local must be interpreted as defined in the Highway Act as amended from time to time.

impervious layer of soil means a layer of soil with a percolation rate slower than 30 minutes per inch when tested in accordance to the Health Act.

lane means a *highway* intended to provide secondary access to *parcels* of land.

Medical Health Officer means the *Medical Health Officer* appointed under the Health Act to have jurisdiction over the area where the *subdivision* or *development* occurs.

minimum building elevation means the elevation of the lowest floor slab in a building or if lower, the lowest floor elevation in a crawl space.

MMCD means Volume 2 of the January 1996 issue of the Master Municipal Construction Documents as amended from time to time.

onsite sewage disposal means the onsite disposal of effluent approved pursuant to the Health Act.

overhead wiring means the installation of overhead electrical and communications wiring.

Owner shall be interpreted as defined in the Municipal Act as amended from time to time.

Owner' s Engineer means the *Engineer* or firm of *Engineers* engaged by the *Owner* to design and prepare Engineering drawings for a *subdivision* or *development,* and to co-ordinate all design *work* and quality assurance required for the *works* under the provisions of this bylaw.

parcel means any lot, block, or other area in which land is held or into which land is *subdivided* but does not include a *highway.*

porous soil means a layer of soil having a percolation rate of 30 minutes per inch or faster when tested pursuant to the Health Act.

preliminary layout approval means a *preliminary layout approval* as issued by the *Approving Officer.*

District of Summerland means the District of Summerland as described in its Letters Patent and amendments thereto.

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

sidewalks means construction of concrete *sidewalks.*

street lighting means the installation of single or double davit streetlights serviced by *underground wiring.*

Subdivision Bylaw means the Subdivision and Development Servicing Bylaw of the District of Summerland as amended from time to time.

subdivision or ***subdivided*** means a *subdivision* as defined in the Land Title Act or under the Condominium Act.

substantial performance means the stage of completion of all of the *work* as certified by the *Owner's Engineer* when:

(a) the *work* is ready for use or is being used for its intended purpose, **AND**;

(b) the total of the incomplete, defective and deficient *work* can be completed at an estimated cost of no more than 3% of the total value of the *work.*

Director of Engineering and Public Works means the *Director of Engineering and Public Works* of the District of Summerland or his designate.

surveyor means a land *surveyor* licensed and registered as a land *surveyor* in the Province of British Columbia.

total performance means when all *work* including deficiencies has been completed in accordance with this bylaw.

underground wiring means the installation of underground electrical and communication wiring.

walkway means a *highway* intended for pedestrian and non-motor traffic save and except for emergency vehicles and conveyances used by persons with disabilities.

water distribution system means the construction of a domestic *water distribution system* and includes fire flows and storage as required in this bylaw.

water source means a *water supply* located on each *parcel* or connection to a *community water system.*

water supply means a supply of water that conforms to the provisions of Schedule C.5 and that at the time of *subdivision* or *development,* is available from an on-site groundwater source, a source requiring a domestic water license issued pursuant to the Water Act, or a

community water system.

work means all works, services, and any other improvements required to be constructed, erected, or installed, both on site and off site, by the *Owner* under the provisions of this bylaw.

zone means a *zone* created by the *Zoning Bylaw.*

Zoning Bylaw means the *Zoning Bylaw* of the District of Summerland as amended or replaced from time to time.

Unless otherwise defined herein, all words or expressions used in this bylaw must have the same meaning assigned to them as like word or expressions contained in the Municipal Act, Interpretation Act, and the *Zoning Bylaw.* If not defined in the Municipal Act, Interpretation Act, or *Zoning Bylaw* then as defined in the Land Title Act.

2.03 Duty of Care and Cause of Action

This bylaw does not create any duty at law on the part of the *District of Summerland,* its Council, Director of Engineering and Public Works, officers, employees, or other representatives concerning anything contained in this bylaw. All *works,* services, improvements, and all matters required pursuant to this bylaw are the responsibility of the *Owner* and *Applicant* and all persons acting on their behalf. No approval of any kind, certificate, permit, review, inspection, or other act or omission by the *District of Summerland* or any of its representatives, including any enforcement or lack of enforcement of the provisions of this bylaw, shall relieve the *Owner* and *Applicant* and all persons acting on their behalf from this duty pursuant to this bylaw and shall not create any cause of action in favour of any person.

SECTION 3 - GENERAL REQUIREMENTS

3.01 Compliance with Bylaw

No *parcel* may be

(a) *subdivided,* **OR;**

(b) *developed*

unless the *subdivision* or *development* conforms to the provisions set out in this bylaw.

Bylaw 2000-068 amended the following Section 3.02 (February 26, 2001):

3.02 Schedules and Master Municipal Construction Document (MMCD)

Works required under this bylaw shall be in accordance with the latest version of the Master Municipal Construction Document, which forms a part of this bylaw. Supplementary Specifications issued by the municipality shall govern over the Master Municipal Construction Document. Schedules A, B, C, and D, and the MMCD are attached to and form part of this bylaw.

3.03 MOTH, Agricultural Land Commission, and Other Agencies

This bylaw outlines the minimum requirements and regulations pertaining to the *subdivision* and *development* of property. The Ministry of Transportation and Highways and other agencies have additional requirements, regulations and approval procedures not contained in this bylaw. It is the *Applicant's* responsibility to ensure that the requirements, regulations and approval procedures of all agencies having jurisdiction are met. Where requirements and regulations of other agencies conflict with this bylaw, the more stringent requirements and regulations shall apply.

Where subdivision may be proposed near farming operations or the Agricultural Land Reserve, the Approving Officer may request the proposal include provisions for adequate buffering or separation of the development from farming, and that the location of highways or highway allowances do not unreasonably or unnecessarily increase access to the land in the Agricultural Land Reserve in accordance with Sections 86 (1) (c)(x) and (xi) of the Land Title Act.

The *District of Summerland Director of Engineering and Public Works* shall not issue a *Certificate of Total Performance* until the *Applicant* has received approval of the pertinent works from the Ministry of Transportation and Highways and other agencies having jurisdiction.

Bylaw 2000-068 amended the following Section 3.04 (February 26, 2001):

3.04 Preliminary Layout Approval

A Preliminary layout approval issued by the Approving Officer is valid for a period of six months. The Approving Officer may extend the time period of the preliminary layout approval for an additional six month time period upon written request from the applicant.

Bylaw 2017-028 deleted section 3.05 (Building Envelope) in its entirety (October 10, 2017)

~~3.05~~

3.06 Certificate to Commence Construction

No person shall excavate or fill land for the purpose of constructing *works,* nor shall any person construct or install any of the *works* as set out in Schedule C of this bylaw until a Certificate to Commence Construction is issued.

The *District of Summerland Director of Engineering and Public Works* must not issue a Certificate to Commence Construction until the *Applicant* submits the following information in accordance with the provisions of this bylaw:

(a) three complete sets of design drawings showing all pertinent information as required by this bylaw and prepared in accordance with Schedule D.1.

(b) detailed design calculations in support of the *street lighting* layout.

(c) detailed design calculations in support of the fire flows and storage required in the design of a *water distribution system.*

(d) detailed design calculations in support of the storm *drainage system.*

(e) detailed design calculations in support of the sanitary sewer system.

(f) plans and documentation in support of the Drainage, Sediment and Erosion Control Plan.

(g) Letter of Commitment by *Owner* and *Engineer* as contained in Schedule B.1.

(h) Letter of Commitment to design *and field review* as contained in Schedule B.2.

(i) letters approving design from the Ministry of Transportation and Highways, TELUS and other agencies having jurisdiction.

3.07 Notification of Compliance

The *District of Summer/and* shall not issue a letter to the *Approving Officer* notifying him that the *Applicant* has complied with the provisions of this bylaw until such time as a *Certificate of Total Performance* has been issued.

3.08 Transfer of Ownership

Works constructed and installed under this bylaw become the property of the *District of Summerland* or the agency having jurisdiction subject to no encumbrances, on issuance of the *Certificate of Total Performance.*

3.09 Statutory Rights of Way

Works constructed and installed under this bylaw must be located within dedicated highways or within statutory rights of way granted by the *Owner* in favour of the *District of Summerland* or other agencies having jurisdiction.

Where *works* are not required to be constructed or installed under this Bylaw, the *District of Summerland* may require rights of way to be granted by the *Owner* in favour of the *District of Summerland* to allow for the eventual construction or installation of a system of water, sewer, electrical or drainage works.

Where the *Owner* is required to grant rights of way to the *District of Summerland,* the *Owner* must enter into and register in the Land Title Office an agreement as prescribed in Schedule A.2 of this bylaw. Changes in wording are subject to the approval of the District of Summerland *Approving Officer.* All rights of way agreements and plans registered in favour of the District of Summerland must be signed by authorized signatories of the *District of Summerland.*

Upon registration of the rights of way and before release of any security being held by the *District of Summerland,* the *Owner* must submit a copy of the registered right of way plan and agreement to the *District of Summerland's Approving Officer.*

All costs pertaining to the acquisition, surveying and registration of all rights of ways shall be at the expense of the *Owner.*

The minimum width for a statutory right of way shall be 4.5 m for the first system of *works,* plus 1.5 m for each additional system of *works.* For deep excavations, the *Applicant* may be required to provide additional width in order to ensure that any future excavation will comply with Workers' Compensation regulations.

3.10 Servicing Requirement at Subdivision

An *Owner* of a *parcel* who applies for *subdivision* must provide as a condition of *subdivision* approval:

(a) on a *highway* immediately adjacent to the *parcel* up to the centre line of the *highway,* **AND;**

(b) on the *parcel* itself,

the *works* that are required to be provided under this bylaw.

The construction, installation, and connection of all *works* must conform to:

(a) the design drawings marked, **Approved for Construction** and initialled by the *District of Summerland Director of Engineering and Public Works,* **AND;**

(b) the provisions of this bylaw.

3.11 Servicing Requirements at Building Permit

Except as provided for in Section 3.12 an *Owner* of a *parcel* who applies for a building permit for a *development* must provide as a condition of *development* approval:

(a) on a *highway* immediately adjacent to any *parcel* being *developed* up to the centre line of the *highway* **AND;**

(b) on the *parcel* itself,

the *works* that are required to be provided under this bylaw.

Where the building permit is for partial or phased *development* of the *parcel,* the *District of Summerland Building Inspector* shall require the *Applicant* to:

(a) construct a percentage of the offsite work proportional to the percentage of the site being *developed,* **OR;**

(b) provide cash in lieu in accordance with Section 3.15

In addition to other design drawings required by the *Building Bylaw,* the *Applicant* for a building permit must submit to the District of Summerland Inspection Services Department design drawings prepared by an *Engineer* which identifies the *works* the *Applicant* intends to construct on the *parcel* being *developed* and on the *highway* abutting the *parcel* and how the *Applicant* intends to connect the onsite *works* to the offsite *works.*

The construction, installation, and connection of all the *works* must conform to:

(a) the design drawings marked, **Approved for Construction,** and initialled by the *District of Summerland Director of Engineering and Public Works* and the *Building Inspector,* **AND;**

(b) the provisions of this bylaw and all other bylaws of the *District of Summerland.*

3.12 Building Permit for Single Detached Housing, Agriculture Uses, Duplex Housing and Manufactured Housing

If a building permit is being issued for construction of a building on land zoned RSD1, RSD3, RSD4, - Residential Single Detached, A1 or A2 - Agriculture, CR1, CR2 or CR3, - Country Residential, RDH - Residential Duplex Housing or RMH - Residential Manufactured Housing, the Owner shall:

(a) comply with the provisions of Schedule C.1 subsection 1.06 Removal and Disposal of Accumulated Soils.

(b) comply with the provisions of the Sanitary Sewer Regulation Bylaw of the District of Summerland as amended from time to time.

No other provisions of the Subdivision Bylaw shall apply.

3.13 Expense of Services Borne by Owner

All *works* or any documentation required by this bylaw must be designed, located, constructed, installed, and supplied at the expense of the *Owner.*

All fees or charges required under this bylaw or which are required by other authorities having jurisdiction must be paid at the expense of the *Owner.*

Bylaw 2000-068 amended the following Section 3.14 (February 26, 2001):

3.14 Exemption from Construction and Installation

Notwithstanding Sections 3.10 and 3.11, an owner of land zoned RSD1(Residential Single Detached), RSD3 (Residential Single Detached, RSD4 (Residential Single Detached) RMH (Residential Manufactured Housing) or RDH (Residential Duplex Housing) will not be required to construct or install one or more of the following servicing Bylaw requirements: drainage, street lighting, underground wiring, fire hydrants, water, curb, gutter, or sidewalk on the abutting *highway* if:

(a) the subdivision is not within 75 meters of an area as determined using the method shown on Figure 1, Page 19, where an equivalent level of works is constructed or installed or is required to be constructed and installed, and;

(b) the total highway frontage abutting the subdivision or development is less than 70 meters, and;

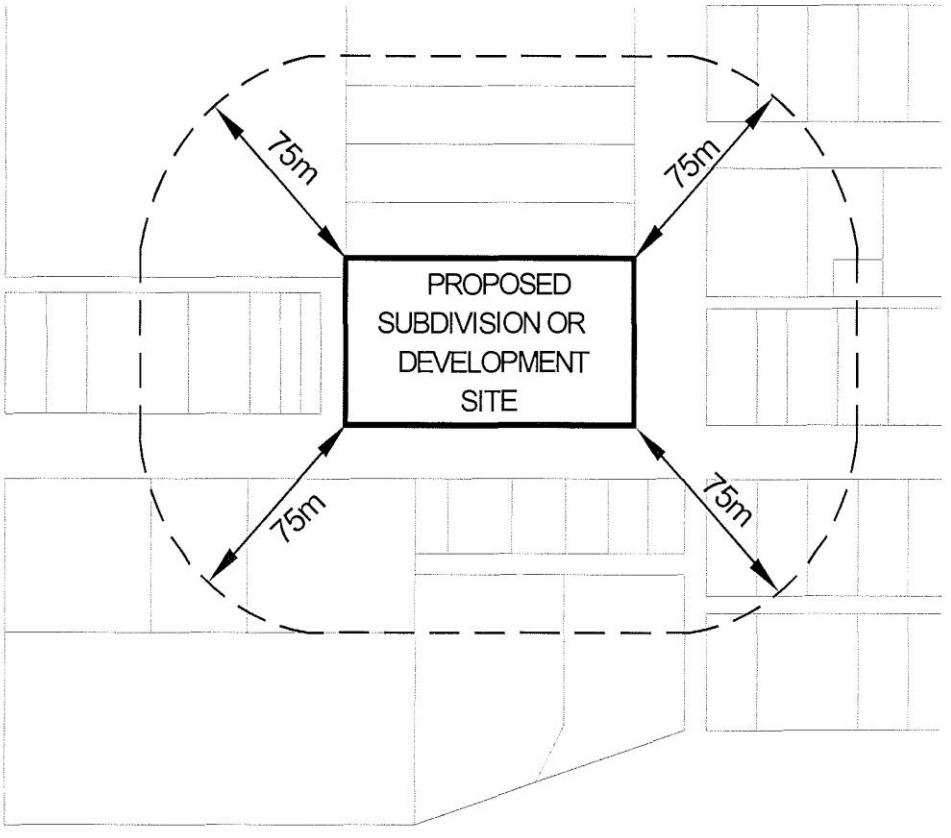
(c) the subdivision creates not more than one new parcel and the new parcel and the remainder have no further subdivision potential under the current zoning, and

(d) new streets or street extensions are not required to service the development, and;

(e) the Director of Engineering and Public Works agrees that the existing standard of works and services are adequate to service the subdivision.

Exemption for each servicing requirement will be determined independently of the others based on the above criteria. An exemption from one servicing requirement in no way implies an exemption from any or all of the other servicing requirements.

FIGURE 1 - METHOD FOR DETERMINING 75 METER DISTANCE



3.15 Cash in Lieu

The *District of Summerland Director of Engineering and Public Works* may require the *Owner* to provide to the *District of Summerland,* cash in lieu of *work:*

(a) required to be constructed or installed under Sections 3.10, and 3.11, **OR;**

(b) which would be constructed or installed on a *network road* which the District of Summerland anticipates upgrading or realigning within five years.

The amount of cash in lieu shall be 100% of the value of the design, construction, and installation of the *work* as estimated and submitted by the *Owner's Engineer* and as approved by the *District of Summerland Director of Engineering and Public Works.*

3.16 Excess or Extended Capacity

Pursuant to Section 939 of the Municipal Act, the *District of Summerland* may require the *Owner* to provide excess or extended services to provide access to or service land other than the *parcel* being *subdivided* or *developed.* An *Owner* may be required to provide drawings that define catchment areas, design drawings, a traffic impact analysis or an onsite utilities impact analysis to assist the *District of Summerland* in making a determination under Section 939 of the Municipal Act.

3.17 Latecomer

Where the *Owner* is required to provide excess or extended services, the *Owner* is entitled to receive latecomer charges in accordance with:

(a) Section 939 of the Municipal Act, **AND;**

(b) the Latecomer Policy of the *District of Summerland,* **AND;**

(c) the Latecomer Agreement as contained in Schedule A.6. Changes in wording are subject to the approval of the *District of Summerland Director of Engineering and Public Works.*

3.18 Subdivision and Development Security Agreement

A plan of *subdivision* or *development* may be given *final approval* prior to completing the construction and installation of the required *works,* **WHERE**;

(a) the *Owner* enters into a Subdivision and Development Servicing Agreement with the *District of Summerland* as contained in Schedule A.3, accepting the terms and conditions in that agreement and undertaking to construct and install the required *works* within one year from the date of executing the agreement, **AND**;

(b) The *Owner* deposits with the *District of Summerland,* security in the form of an Irrevocable Letter of Credit as provided for in Schedule A.1 in the amount of:

  (i) one hundred and twenty five percent (125%) of the awarded tender value for the construction and installation of the *works,* **PLUS**;
  (ii) one hundred and twenty five percent (125%) of the *Owner's Engineer* fee for the design and inspection of the *works* as estimated by the *Owner's Engineer,* **PLUS**;

(iii) a security to warrant for the maintenance in accordance with the Maintenance Security Table contained in Section 5.04, **PLUS**;

(iv) one thousand dollars ($1000.00) per sheet for drafting deficiencies, **AND**;

(c) The Owner's *Engineer* certifies that the tender has been awarded and that a contract has been executed between the *Owner* and the *contractor,* **AND**;

(d) The *Applicant* complies with the provisions of Section 3.06, **AND**;

(d) The *Applicant* provides written proof that all the requirements of the Ministry of Transportation and Highways and other agencies having jurisdiction have been met.

Before execution of the Subdivision and Development Security Agreement, the *Owner* must pay to the *District of Summerland* all fees, charges, and levies applicable to the *subdivision* or *development* including, without limitation, the *subdivision* processing fees, development cost charges, latecomer fees, administration fees and building permit fees. Payment must be made by bank draft or cash.

Bylaw 2000-331 added Section 3.19 Lot line Adjustments (May 26, 2008):

3.19 Lot line Adjustments

Where an *owner* is making an application to adjust lot lines, and the lot line adjustment does not create any additional parcels, the *owner* shall:

1. extend the existing services to the adjusted parcel lot line;
2. provide a drawing, prepared by a surveyor, indicating the locations of all existing and extended services, including power, water, sewer, and onsite disposal, if applicable; and
3. identify which parcel will connect to which service.

If a service is not located in a dedicated road right of way or within the parcel that it will service, the location and access to that service shall be protected by an easement.

SECTION 4 - ADMINISTRATION AND ENFORCEMENT

4.01 Subdivision Processing Fee

An *Applicant* applying for *subdivision* approval must submit to the *District of Summerland* a *subdivision* processing fee in accordance with the Fees and Services Bylaw #98-001 as amended from -time to time.

4.02 Administration Fee

An *Applicant* applying for *subdivision* or *development* approval must submit to the *District of Summerland* an Administration fee in accordance with the Fees and Services Bylaw #98-001 as amended from time to time.

4.03 Re-inspection Fee

Where the *Applicant* has scheduled a video inspection, a witness of testing, or a final inspection with the *District of Summerland Director of Engineering and Public Works* or his designate and, due to incomplete *work* or failure of testing it is necessary for the *District of Summerland Director of Engineering and Public Works* to attend additional inspections, the re-inspection fee for each additional inspection shall be $200.00.

4.04 Authorization To Enter On Lands Being Subdivided Or Developed

To determine if the provisions and regulations of this bylaw are being met, *District of Summerland* officers, or their designates, are authorized to enter the lands for which a *subdivision or development* application has been made.

4.05 Violation

Any person who:

(a) violates bylaw provisions;

(b) causes or permits any act in contravention or violation of bylaw provisions;

(c) neglects or omits bylaw requirements;

(d) carries out, causes, or permits to be carried out any *subdivision or development* in a manner prohibited by or contrary to bylaw provisions;

(e) fails to comply with bylaw orders, directions, or notices;

(f) prevents, obstructs or attempts to prevent or obstruct the authorized entry of any officer authorized under Section 4.04 to enter upon the lands;

will be guilty upon summary conviction of an offence under this bylaw.

4.06 Offence

Each day's continuance of an offence under Section 4.05 constitutes a new and distinct offence.

4.07 Penalty

Any person who violates bylaw provisions may, on summary conviction, be liable to a penalty not exceeding $10,000.00, plus the cost of prosecution, for each offence. The penalties imposed under this section are a supplement and not a substitute for any other remedy to an infraction of this bylaw.

4.08 Completion

Should any person fail to construct or install any *works* required under this bylaw, the *District of Summerland,* its agents, or servants, may construct or install the *works* at the expense of the *Owner* in default and the expense thereof may be recovered in a like manner from the security held by the *District of Summerland.*

4.09 Stop Work Order

The *District of Summerland Director of Engineering and Public Works* or the *Building Inspector* may order:

(a) a person who contravenes this bylaw to comply with the bylaw within a time limit specified in the order;
(b) construction to stop on the *work,* or any part thereof, if such *work* is proceeding in contravention of this bylaw.

4.10 Certification of Materials, Equipment and Procedures

The *District of Summerland Director of Engineering and Public Works* or the *Building Inspector* may direct that tests of materials, equipment, devices, construction methods, assemblies, or soil conditions be made or sufficient evidence or proof be submitted, at the expense of the *Owner,* to determine whether the materials, equipment, devices, construction methods, assemblies or soil conditions meet the requirements of this by law.

SECTION 5 - QUALITY ASSURANCE

5.01 Duties of Owner

Prior to approval to commence construction, the *Owner* must:

(a) retain, as the *Owner's Engineer,* an *Engineer* to coordinate all design *work* and *field reviews* of the registered professionals required for the *subdivision* or *development,* **AND**;

(b) submit to the *District of Summerland Director of Engineering and Public Works* a letter of Commitment by *Owner* and *Engineer* and a letter of Commitment to Design and Field Review as contained in Schedule BJ and B.2.

5.02 Duties of Owner's Engineer

Prior to the issuance of a *Certificate of Total Performance* by the *District of Summerland Director of Engineering and Public Works,* the *Owner's Engineer* must sign and seal a Certification of Bylaw Compliance as contained in Schedule B.3.

5.03 As-Constructed Drawings

Prior to issuance of a *Certificate of Total Performance* by the *District of Summerland Director of Engineering and Public Works,* the *Applicant* must deposit with the *District of Summerland* one complete set of computerized Utility Service Records for water and sewer services on District of Summerland forms (provided by the District), one set of original as-constructed mylar drawings, one as-constructed electronic copy of the drawings in a format compatible with AutoCAD Release 13 and two complete sets of as-constructed blue prints. The mylar and electronic as-constructed drawings must be prepared in accordance with the provisions set out in Schedule D. 1.

All drawings required by this bylaw for *works* must be prepared, certified and sealed by the Owner's *Engineer.*

5.04 Maintenance Security

Upon *Substantial Performance* of the *subdivision* or *development* and prior to issuance of a *Certificate of Total Performance* by the *District of Summerland Director of Engineering and Public Works,* the *Owner* must:

(a) enter into a Maintenance Security Agreement with the *District of Summerland* as contained in Schedule A.4, to warrant for the maintenance of the *works* for a period of twelve (12) months after the date of *Substantial Performance* **AND**;

(b) deposit an Irrevocable Letter of Credit, as provided for in Schedule A.1 with the *District of Summerland* as a maintenance security in accordance with the following table:

***MAINTENANCE SECURITY TABLE**

Description	Maintenance Security
Fee Simple *Subdivisions*	$580 per *parcel*
Bare Land *Strata/Developments*	5% of off site *works***
Offsite *works* not abutting *subdivision* or *development*	5% of capital costs**
Deficiencies and/or defects	200% of the cost to repair ***

* more than one of the above items contained in the Maintenance Security Table may apply to any *subdivision* or *development.*

** five percent (5%) or one thousand dollars ($1,000.00), whichever is greater, of the cost of designing, constructing and installing the *works* required under this bylaw, as submitted by the *Owner's Engineer* and as approved by the *District of Summerland Director of Engineering and Public Works.*

*** two hundred percent (200%) of the cost to repair deficiencies and defects as estimated by the *Owner's Engineer* and as approved by the *District of Summerland Director of Engineering and Public Works.*

The *Owner* will not be required to enter into a Maintenance Security Agreement, nor be required to deposit an Irrevocable Letter of Credit when:

(a) there are no *works* required under the provisions of this bylaw, **OR**;

(b) the *Municipal Council* grants the *Applicant* a Development Variance Permit exempting him from **All** the required *works* required under this bylaw.

5.05 Final Inspection

Upon *substantial performance* and after submission of a Certification of Bylaw Compliance, the Owner's Engineer must arrange and conduct a final inspection with the *District of Summerland*

Director of Engineering and Public Works in order for the *District of Summerland Director of Engineering and Public Works* to ascertain the acceptability of the Certification of Bylaw Compliance.

Bylaw 2000-251 amended Section 5.06 Certificate of Total Performance (June 12, 2006):

5.06 Certificate of Total Performance

A *Certificate of Total Performance* will be issued by the *Director of Engineering and Public Works* once the *Applicant* has complied with the provisions of this bylaw.

The *Director of Engineering and Public Works* must not issue a *Certificate of Total Performance* until the *Applicant*:

(a) submits as-constructed drawings as per Section 5.03;

(b) submits a Maintenance Security Agreement as per Section 5.04;

(c) submits a copy of the Certification of Bylaw Compliance as per Section 5.02;

(d) submits three copies of the subdivision plan suitable for registration with the Land Title and Survey Authority of BC (L.T.S.A.) and which have been executed by all required parties, with the exception of the *Approving Officer.* All surveys are to include at least three points that are referenced by UTM NAD 83 CSRS (Zone 11) coordinates;

(e) submits copies of all Statutory Right of Way plans and agreements suitable for registration as per section (d), above, and Section 3.09, if applicable;

(f) pays in full by bank draft or cash, all applicable fees and charges;

(g) submits video reports as required in Schedule C.1, Section 2.01 (j) and air testing results in accordance with *MMCD*;

(h) ensures a final inspection is conducted by the *Director of Engineering and Public Works* or his designate and *Owner's Engineer* as per Section 5.05;

(i) submits a letter from the governing electrical authority which approves the *street lighting* installation and the electrical wiring;

(j) submits a letter of acceptance from the designated telecommunication and coaxial cable providers;

(k) if applicable, submits a letter of commitment from Terasen Gas to service the subdivision;

(l) ensures *total performance* of the *work* has been achieved; and

(m) complies with all the provisions of this bylaw.'

SECTION 6 - TECHNICAL REQUIREMENTS

6.01 General

The minimum standards and specifications for *works* for the *subdivision* or *development* of lands within the *District of Summerland* are prescribed in Schedule C. Where the standards and specification of other agencies having jurisdiction conflict with this bylaw, the more stringent standards and specifications shall apply.

The District of Summerland hereby adopts the *MMCD* as its specifications for all *work* required pursuant to this bylaw. Notwithstanding the above, the provisions of the *MMCD* Supplements as contained in Schedule C.1, Section 2. Shall, supersede the *MMCD.*

6.02 Highways and Walkways

All *highways* including *highway* widening, *boulevards, walkways,* bicycle *lanes,* bicycle trails, or other trails required under Schedule C.2 of this bylaw must be constructed and installed in accordance with the standards prescribed in Schedule C.3. A *highway* proposed to be dedicated by a plan of *subdivision* must not be shown on the plan of *subdivision* either dedicated, laid out, or constructed unless the dimensions, locations, alignment and gradient meet the requirements for *highways* prescribed in Schedule C.3.

Where the *Approving Officer* believes that, due to terrain and soil conditions, a *highway* of a specified width under this bylaw cannot be supported, protected, or drained, he may determine that the *Owner* provide, at the *Owner's* expense, land of a width that, in the *Approving Officer's* opinion, would permit the *highway* to be supported, protected, or drained pursuant to Section 945 (2) of the Municipal Act.

6.03 Sidewalks. Curbs and Gutters

All *sidewalks,* curbs and gutters required under Schedule C.2 of this bylaw must be constructed and installed in accordance with the standards prescribed in Schedule C.4. The location* of the *sidewalks* on highways must be as follows:

Arterial:	*sidewalks* are required on one or both sides of *highway.*
Major Collector	*sidewalks* are required on one side of highway.
Minor Collector	*sidewalks* not required
Local:	*sidewalks* are required on one side of the *highway,* where the *highway* will be used to provide the public with safe and efficient access to educational facilities, government facilities, parks, recreation sites, shopping centres, entertainment centres, health institutions or religious institutions, otherwise not required.

* *If one side only is specified for sidewalk, the determination of which side of the right of way the sidewalk must be placed shall be made by the Director of Engineering and Public Works. If sidewalk locations are in conflict with the SUMMERLAND SIDEWALK PLAN (Appendix C of this bylaw), then the more stringent of the two requirements shall prevail.*

6.04 Water Distribution Systems

If Schedule C.2 requires a *water distribution system, subdivision* or *development* must not be approved until:

(a) the *Owner* of the *parcel* being *subdivided* or *developed* provides each *parcel* within the proposed *subdivision* or *development* with a water service connected to a *water distribution system* that is connected by trunk water mains, to an existing *community water*

system. All *works* must be installed in accordance with the standards set out in Schedule C.5, and in accordance with the current bylaws and regulations of the local water authority, **AND**;

(b) the proposed *subdivision* or *development* is included within an established water system boundary which is either extended or established pursuant to the local improvement and local service provisions of the Municipal Act, as required by the authority having jurisdiction.

6.05 Water Source

If Schedule C.2 permits a *water source, subdivision* or *development* must not be approved until:

(a) each *parcel* in the *subdivision* or *development* is provided with its own *water supply* located on said *parcel.* If a *community water system* is available to service the *subdivision* or *development,* the *community water system* must be used as the *water source,* **AND**;

(b) if the *water source* is not from a *community water system,* the *Owner* must register a covenant as provided for in Schedule A.5 against the existing land title.

All *works* must be installed in accordance with the standards set out in Schedule C.5 and in accordance with the bylaws and regulations of the *community water system.*

6.06 Community Sewer

If Schedule C.2 requires a community sewer, *subdivision* or *development* must not be approved until:

(a) the *Owner* of the *parcel* being *subdivided* or *developed,* provides each *parcel* in a proposed *subdivision* or *development* with a sanitary sewer service connected to a sewage collection system by trunk sewer mains to the District of Summerland Sanitary Sewer System. All *works* must be constructed and installed in accordance with the standards as set out in Schedule C.6, **AND**;

(b) the *subdivision* or *development* is included within the boundaries of an existing or future Sewer Specified Area.

6.07 On Site Disposal

If Schedule C.2 permits on site disposal, *subdivision* or *development* must not be approved unless each *parcel* is provided with an *onsite sewage disposal* area in accordance with the standards as set out in Schedule C.7.

Notwithstanding the above, in no case shall a *parcel* be serviced by *onsite sewage disposal* if a *community sewer system* is available to service the property or if the property is in a Sewer Specified Area or is an area proposed for sewer.

6.08 Storm Drainage Systems

If Schedule C.2 requires a *drainage system,* the *Owner* of the *parcel* being *subdivided* or *developed* must provide the proposed *subdivision,* or the *parcel* being *developed* with a storm

drainage system constructed and installed in accordance with the standards set out in Schedule C.8.

In addition to the requirements of Schedule C.2, a storm *drainage system* is required where the *subdivision* or *development* is located in an area where drainage studies prepared for the *District of Summerland* and adopted by the *Municipal Council* indicate that drainage *work* should be constructed.

6.09 Drainage, Sediment and Erosion Control

The Owner's *Engineer* must prepare plans and documentation outlining the Drainage, Sediment, and Erosion Control Plan that will be used during the *subdivision* or *development* of the *parcel.* The Drainage, Sediment and Erosion Control Plan must be prepared in accordance with the Land and Development Guidelines for the protection of aquatic habitat, Ministry of Environment, Lands and Parks and the Urban Runoff Control Guideline for British Columbia. A copy of the plan must be submitted to *District of Summerland Director of Engineering and Public Works* for review and must include pre and post *subdivision* or *development* contour plans.

The *Applicant* must ensure that no silt, gravel or debris resulting from construction activity in the *subdivision* or *development* is allowed to discharge into existing *drainage systems,* natural drainage courses, water courses, or onto *highways,* or adjoining properties.

6.10 Slope Stability

In addition to any other geotechnical report that may be required, the *Owner's- Engineer,* must address issues related to safety and slope stability.

6.11 Street Lighting

If Schedule C.2 requires *street lighting,* the *Owner* must provide *street lighting* constructed and installed in accordance with the standards as set out in Schedule C.9 and in the Summerland Electrical Department Construction Standards.

The *District of Summerland Director of Engineering and Public Works* may require additional *street lighting* to be installed in locations where *street lighting* will improve public safety.

6.12 Electrical and Communication Wiring and Gas Distribution

If Schedule C.2 requires undergrounding wiring, the *Owner* of the land being *subdivided* or *developed* must provide each *parcel* within the proposed *subdivision* or *development* with a power supply, and if applicable, communication wiring, cable TV and gas service, constructed and installed in accordance with the standards set out in Schedule C.10 and the District of Summerland Electrical Department Construction Standards.

SECTION 7 – ENACTMENT

7.01 Repeal of Previous Bylaw

The District of Summerland Subdivision Servicing Bylaw #2350, 1988 is hereby repealed.

7.02 Bylaw Adoption

This bylaw shall take effect upon adoption by the *Municipal Council* of the District of Summerland.

READ A FIRST TIME THIS 12th DAY OF OCTOBER, 1999.

READ A SECOND TIME THIS 12th DAY OF OCTOBER, 1999.

READ A THIRD TIME THIS 12th DAY OF OCTOBER 1999.

RECONSIDERED AND ADOPTED THIS 25th DAY OF OCTOBER 1999.

MAYOR	ADMINISTRATOR/CLERK

SCHEDULE"A"

LEGAL DOCUMENTS

This is Schedule "A" of the District of Summerland Subdivision and Development Servicing Bylaw No. 99-004

SCHEDULE "A.1" - LETTER OF CREDIT

(Date)

(Financial Institution)

(Address of Financial Institution)

District or Summerland

13211 Henry Avenue

Summerland BC VOH 1ZO

Dear Sirs/Mesdames:

At the request of _____ (the owner/customer), we hereby establish in your favour our irrevocable credit for a sum not exceeding. This credit shall be available to you by sight drafts drawn on the _____

(Name and Address of Financial Institution)

when supported by your written demand for payment upon us.

This letter of credit is required in connection with an undertaking by the *Owner* to pay for certain *works* or services required.

We specifically undertake not to recognize any notice of dishonour of any sight draft that you shall present to us for payment under this Letter of Credit.

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

We shall honour your demand without inquiring whether you have a right as between yourself and our customer.
This Letter of Credit will expire on _____ subject to the condition hereinafter set forth.
(date)

It is a condition of this Letter of Credit that it shall be deemed to be automatically renewed and extended without amendment for one year from the present or any future expiry date hereof, unless thirty days prior to such expiry date, we notify the Director of Engineering and Public Works of the District of Summerland in writing, by registered mail, that we elect not to consider this Letter of Credit to be renewed for an additional period. Upon receipt of such notice, you may draw hereunder by means of your written demand for payment.

Our reference for this Letter of Credit is _____

_____

(Name of Financial Institution) (Signature)

SCHEDULE "A.2" - STATUTORY RIGHT OF WAY

1. Definitions

In this agreement: *"Owner"* means the Transferor as identified in Form C, Part 1, Item 5; ***"District of Summerland"*** *means* the Transferee as identified in Form C, Part·1, Item 6 and shall include its officers, employees, licensees, agents and *contractors;* "Lands" means the lands identified in Form C, Part 1, Item 2; *"Works"* means the installation, construction, operation. maintenance, replacement and repair of one or more systems of sewer, water, drainage, gas or other public utility *works* including all pipes, valves, fittings, manholes, improvements, facilities, appliances and devices, vehicles, machinery, equipment and materials required in connection therewith.

2. Statutory Right of Way

Pursuant to Section 218 of the Land Title Act the *Owner* does hereby grant to ***"District of Summerland"*** in perpetuity a statutory right of way upon, under and across that part of the Lands shown on Right of Way Plan referred to herein for the purposes of the *Works* including all things necessary or convenient to the *Works* and including the right to enter the Lands for purposes of access to and egress from the *Works* and the Right of Way Area, all of which is necessary for the operation and maintenance of the undertaking of ***"District of Summerland"***.

3. Right of Way Area

All rights granted by the *Owner* to the ***"District of Summerland"*** pursuant to this agreement shall be restricted to that part of the Lands outlined in bold on Right of Way Plan _____ deposited in the Land Title Office in Kamloops, British Columbia (hereinafter identified as "Right of Way Area"), provided that the ***"District of Summerland"*** shall have the right to enter, pass and repass over such of the Lands as may reasonably be required for the purposes of access to and from the *Works* and the Right of Way Area, together with all necessary vehicles, machinery, equipment and materials.

4. Construction of the Works

The ***"District of Summerland"*** shall, at its expense, install, construct, operate, maintain, replace and repair the *Works* in compliance with all applicable laws and in a manner that shall leave the Lands in a neat and tidy condition and minimize damage to the Lands. The *Works* shall at all times remain the property of the ***"District of Summerland"*** and shall not be considered to form part of the Lands notwithstanding any law to the contrary, provided that the ***"District of Summerland"*** may at any time remove or abandon all or part of the *Works* without obligation or affecting the rights granted to the ***"District of Summerland"*** pursuant to this agreement.

5. Non-Interference

The *Owner* shall not do or permit to be done any act or thing which shall interfere with or damage the *Works* or in any way affect or impair the rights granted to the ***"District of Summerland"*** to this agreement and, without limitation, shall not place any building, structure, material, soil cover or obstruction of any kind on the Right of Way Area so that the *Works* and Right of Way Area shall always remain open for unobstructed access and

entry upon the Lands by the ***"District of Summerland"***. The *Owner* shall not conduct any blasting on or adjacent to the Right of Way Area without the consent in writing of the ***"District of Summerland"***, which consent shall not be unreasonably withheld.

6. Indemnity

The ***"District of Summerland"*** shall indemnify and save harmless the *Owner* against all liabilities, actions, damages and claims caused by the exercise by the ***"District of Summerland"*** of the rights granted under this agreement.

7. Licence

The Transferee may grant licences to others to use the *Works,* Right of Way Area and exercise the rights granted under this agreement.

8. Registered Priority Charge and Enurement

This agreement shall be registered at the Land Title Office as a charge on the Lands in priority over all financial charges and shall enure to the benefit of and be binding upon the *Owner* and the ***"District of Summerland"*** and their respective heirs, executors, administrators, successors at law and successors in title.

9. Covenants

The *Owner* agrees that the ***"District of Summerland"*** shall have the right to do all things necessary or useful in connection with the *Works* and the rights granted under this agreement including, without limitation, the right to excavate, remove soil or other materials and to clear the Right of Way Area of all trees, vegetation, material, buildings, structures or obstructions of any kind.

10. Statutory Functions

Nothing contained herein shall impair or affect in any way the exercise by the District of Summerland of its functions and authority under any enactment, constating document, law, bylaw, resolution or other source of authority.

THE CORPORATION OF THE DISTRICT OF SUMMERLAND
by its authorized signatories

_____

_____

Bylaw 2000-291 amended Schedule A.3 (October 22, 2007):

SCHEDULE "A.3" - SUBDIVISION AND DEVELOPMENT SERVICING AGREEMENT

THIS AGREEMENT made this day of A.D.,

BETWEEN:

The Corporation of the District of Summerland, of 13211 Henry Avenue in the District of Summerland, in the Province of British Columbia

(hereinafter called the *"District"*)

OF THE FIRST PART

AND:

(hereinafter called the *"Owner"*)

OF THE SECOND PART

WHEREAS the *Owner* is the registered *Owner* or holder of a Registered Right to Purchase lands and premises situate, lying and being in the District of Summerland, Province of British Columbia, and more particularly known and described as:

(hereinafter called the *"Lands"*);

AND WHEREAS the *Owner* wishes to subdivide or develop the *Lands*, or part thereof, in the manner shown on a Subdivision or Development Plan which has been submitted by the *Owner* to the *Approving Officer* and the *District Director of Works and Utilities* for approval. A copy of said plan is attached hereto as Appendix "A", and is hereinafter called the "Subdivision or Development Plan";

AND WHEREAS the *Owner* is desirous of entering into this Agreement with the *District* pursuant to the provisions of the Local Government Act, in order to obtain approval from the *Approving Officer* for the Subdivision Plan, or issuance of a building permit for a *development* from the *Building Inspector* prior to the completion of the construction and installation of all works required under the provisions of the *Subdivision Bylaw* to be constructed and installed by the *Owner*.

NOW THIS AGREEMENT WITNESSETH that in consideration of the premises and of the mutual covenants and agreements herein contained, the parties hereto covenant and agree as follows:

1. In this Agreement, unless the context otherwise requires all words and expressions shall have the same meaning assigned to them as like word or expressions contained in the Interpretation Section of the Subdivision and Development Servicing Bylaw of the *District*.

2. The *Owner* covenants and agrees to construct and install on the *Lands* and off-site, as the case may be, in accordance with the plans and specifications marked "Approved For Construction" by the *Director of Engineering and Public Works* and initialled by each of the parties hereto for identification, the following *work*:

   (Owner must initial those items listed below that apply to this Agreement. All disciplines will not necessarily be employed in every subdivision or development.)

   ____ roads
   ____ drainage works
   ____ sewage works
   ____ water works
   ____ sidewalks
   ____ boulevards
   ____ curbs and gutters
   ____ street lighting
   ____ underground electrical, telephone, and cable works
   ____ gas

   Each of the parties hereto acknowledge having in its or his possession a true copy of the aforesaid plans and specifications, hereinafter called the *"Approved Engineering Drawings"*, and acknowledge and agree that the *Approved Engineering Plans* are hereby incorporated into and made part of this agreement and are attached as Appendix "B".

3. The *Owner* covenants and agrees that upon *substantial performance* of the *work* as certified by the *Owner's Engineer* and approved by the *Director of Engineering and Public Works* the *Owner* will enter into a Maintenance Security Agreement, as contained in Schedule A.4 of the *Subdivision Bylaw*, to warrant for the maintenance of the *work* for a period of eighteen (18) months.

4. All *work* must be carried out by the *Owner* or his *contractors* in accordance with the *Engineering Plans*, and in accordance with the provisions of the *Subdivision Bylaw* which is currently in force. Where the provisions of the *Engineering Plans* and the *Subdivision Bylaw* conflict, the more stringent provisions shall apply. The *District* reserves the right to construct or install portions of the *work* that the *Director of Engineering and Public Works* deems part of the *District's* standard operational procedures. This *work* includes, but is not limited to, the construction and installation of signage and water, storm sewer, sanitary sewer, and electrical services.

5. The cost of all *work*, including any work constructed or installed by the *District*, shall be at the expense of the *Owner*. The *Owner* must employ only bondable *contractors* to carry out and complete the *work*.

6. The *Owner* must obtain and provide to the *District* upon request and free of charge true copies of all contracts and sub-contracts entered into by the *Owner* or its *contractors* and

relating *works*.

7. The decision of the *Director of Engineering and Public Works* shall be final and binding on all parties hereto in determining whether or not the *work* or any part thereof has been carried out and completed in accordance with the provisions of this Agreement.

8. As soon as the *Owner* is satisfied that he has caused the *work* to be completed, and prior to issuance of a *Certificate of Total Performance*, the *Owner* shall submit to the *Director of Engineering and Public Works*:

   (a) a signed affidavit from the owners contractor, indicating that the electrical works have been installed according to the drawings provided and current electrical standards and applicable bylaws of the District of Summerland.

   (b) a letter of acceptance from TELUS.

   (c) A letter of acceptance from Shaw Cable.

9. The *Owner* shall cause all *work* herein to be carried out and completed not later than the ___ day of_____ (hereinafter called the "Completion Date").

10. Prior to obtaining approval of the *subdivision* by the *Approving Officer*, the *Owner* shall:

    (a) pay all arrears of property taxes chargeable against the *Lands*; **AND**

    (b) pay all currently assessed property taxes as levied against the *Lands*.

11. Prior to *final approval* and as security for the due and proper performance by the *Owner* of all his covenants and agreements herein contained, the *Owner* shall deposit with the *District* an unconditional, Irrevocable Letter of Credit, bankdraft, or cash, drawn on a chartered bank in Canada for a term of not less than twelve (12) months. The letter of credit shall be in the amount of _____, ($_____), which is equal to the amount required pursuant to Section 3.18 (b) of the *Subdivision Bylaw*.

    The Irrevocable Letter of Credit shall be as contained in Schedule A.1 of the *Subdivision Bylaw* and must be incorporated into and made part of this agreement and attached as Appendix "C".

12. The *Owner* agrees that, in addition to the Letter of Credit outlined above, the *Owner* has provided funds, in the form of a bank draft or cash, as payment for *works* that will be constructed and installed by the *District*. A breakdown of these funds is as follows:

Signage	$
Water Service	$
Storm Sewer Service	$
Sanitary Sewer Service	$
Electrical Service	$
Other	$ _____
Total Cost	**$**

The *Owner* understands that these funds are an estimate of the cost of the *work* that will be constructed and installed by the *District* and that these funds will be used to offset the District's costs and will not be returned to the *Owner*.

The Owner understands that the estimate is provided to the *Owner* to expedite the approval of his subdivision or development and that, in consideration for the *District* providing the estimate before accurate costing can be completed, the *Owner* agrees that, if the funds are insufficient to cover the actual cost of the *works* constructed and installed by the *District*, the *District* may recover any shortfall by calling for and receiving funds secured by the Letter of Credit that is being held as security for other *works*. If there is insufficient money held by the Letter of Credit, then the *Owner* will pay such deficiency to the *District* immediately upon receipt of an invoice from the *District*. It is understood and agreed that the *District* may do such *work* either by itself, or by *contractors* employed by the *District*.

13. The *Owner* agrees that if the *work*, or any part thereof, is not completed in accordance with the provisions of this agreement by the Completion Date, or if the *Owner* shall be in default of any of his covenants herein contained, and such default shall continue for a period of fourteen (14) days after notice thereof has been given by the *District* to the *Owner*, the *District* may call for and receive funds secured by the Letter of Credit and the *District* may complete the *work* at the expense of the *Owner* and deduct from any fund held by the *District* as security hereunder, the cost of such completion, and the balance of the security, if any, will be returned to the *Owner* less any administration fees and costs incurred by the *District*. If there is insufficient money on deposit with the *District* by reason of the security deposit, then the *Owner* will pay such deficiency to the *District* immediately upon receipt of an invoice from the *District*. It is understood and agreed that the *District* may do such *work* either by itself, or by *contractors* employed by the *District*.

14. The *District* will consent to a reduction in the amount secured by the Letter of Credit, or cash, from time to time in accordance with the following:

    (a) The credit reduction will be equal to the cost of *work* completed, minus a 10% holdback, as submitted by the *Owner's Engineer* and as approved by the *Director of Engineering and Public Works*; **AND**

    (b) no reduction will be allowed for an amount which represents less than 10% of the total cost of construction and installation of the *work;* **AND**

    (c) no reduction to the letter of credit will be allowed which reduces its value to less than the sum of the amounts held under Section 3.18 (b) (iii) of the *Subdivision Bylaw*.

15. The *Owner* covenants and agrees to indemnify and save harmless the *District*, its Council, officers, agents, and employees from and against all actions, proceedings, costs, damages, expenses, claims and demands whatsoever and by whomever brought or made against the *District* or its Council, officers, agents and employees, resulting directly or indirectly from the design, construction, or installation of the *work*.

16. The *Owner* acknowledges and agrees that the *District* will not issue Building Permits on any of the *parcels* created by the *subdivision* of the Lands, and no building shall occur on the Lands until the *Certificate of Total Performance* has been issued by the *Director of Engineering and Public Works*.

17. The *Owner* covenants and agrees that the *Owner* shall give all prospective purchasers a copy of this agreement and bring their attention to Section 15 of this agreement which restricts their ability to apply for a building permit.

18. In consideration of due and proper performance by the *Owner* of his covenants herein contained, the *District* covenants and agrees to permit the *Owner* to carry out and perform the *work*.

19. Any demand or notice required or permitted to be given under the provisions of this agreement must be in writing and may be given by mailing such notice by prepaid registered post to the party concerned at the address for such party first above recited, and any such notice or demand mailed as aforesaid must be deemed to have been received by the party to whom it is addresses on the second business day after the date of posting thereof.

20. The *Owner* acknowledges and agrees that the *works* become the property of the *District* or the agency having jurisdiction subject to no encumbrances upon issuance of a *Certificate of Total Performance* by the *Director of Engineering and Public Works*. Notwithstanding the above, nothing herein contained must derogate from the obligation of the *Owner* to maintain the *work* for a period of twelve (12) months following the date of *substantial performance* as aforesaid.

21. It is understood and agreed that the *District* has made no representations, covenants, warranties guarantees, promises or agreements, oral or otherwise, with the *Owner* other than those contained in this contract.

22. Wherever the singular or masculine is used herein, the same must be construed as meaning the plural, feminine, or body corporate or politic where the context or the parties so require.

23. This Agreement and the terms, covenants, and conditions herein contained shall enure to the benefit of and be binding upon the parties hereto and their respective heirs, executors, administrators, successors and assigns.

IN WITNESS WHEREOF the parties hereto have executed this Agreement at the District of Summerland, Province of British Columbia, the day and year above written.

SIGNED by the ***District*** in the presence of:	**District of Summerland** by its authorized signatories
_____ Name of Witness	_____
_____ Signature of Witness	
_____ Occupation of Witness	

If *Owner* is an individual:

SIGNED by the ***Owner*** in the presence of:	
_____ Name of Witness	_____ *Owner's* name
_____ Signature of Witness	_____ *Owner's* signature
_____ Occupation of Witness	

If *Owner* is a company:

SIGNED by the ***Owner*** in the presence of:	_____ Company name by its authorized signatories
_____ Name of Witness	_____
_____ Signature of Witness	
_____ Occupation of Witness	

APPENDIX "A"

Attach a copy of the Subdivision or Development Plan as submitted by the *Owner* to the *Approving Officer* and the *District of Summerland Director of Engineering and Public Works* for Approval.

APPENDIX "B"

Attach a copy of the *Engineering Plans* initialled by each of the parties.

APPENDIX “C"

Attach letter of credit in format as contained in Schedule A.1 of the *Subdivision Bylaw.*

SCHEDULE "A.4" - MAINTENANCE SECURITY AGREEMENT

THIS AGREEMENT made this day of A.D.,

BETWEEN:

The Corporation of the District of Summerland, of 13211 Henry Avenue in the District of Summerland in the Province of British Columbia

(hereinafter called the "*District of Summerland")*

OF THE FIRST PART

AND:

(hereinafter called the "*Owner")*

OF THE SECOND PART

WHEREAS the *Owner* is the registered *Owner* or holder of a Registered Right to Purchase Lands and premises situate, lying and being in the District of Summerland, Province of British Columbia, and more particularly known and described as:

(hereinafter called the *"Lands");*

AND WHEREAS the *Owner's Engineer* has certified that the *Owner* has attained *substantial performance* of the *subdivision* or *development* of the *Lands,* and a Certification of Bylaw Compliance has been received and accepted by the *District of Summerland Director of Engineering and Public Works.*

AND WHEREAS the *Owner* is desirous of entering into this Agreement with the *District of Summerland* pursuant to the provisions of the Subdivision and Development Servicing Bylaw to warrant the construction and installation of all *works* in order to obtain approval from the *Approving Officer* for the subdivision plan, or issuance of a *completion certificate* from the *Building Inspector.*

NOW THIS AGREEMENT WITNESSETH that in consideration of the premises and of the mutual covenants and agreements herein contained, the parties hereto covenant and agree as follows:

1. In this Agreement, unless the context otherwise requires all words and expressions must have the same meaning assigned to them as like word or expressions contained in the Interpretations Section of the *Subdivision and Development Servicing Bylaw* of the *District of Summerland.*

2. The *Owner* covenants and agrees to warrant for a period of twelve (12) months from the date of execution of this agreement any *works* or services which were installed or constructed as a requirement of the provisions of the *Subdivision Bylaw.*

3. The *Owner* covenants and agrees that any defects or deficiencies that appear prior to the expiration of this agreement will be *repaired* within 10 working days after the date of written notification by the *District of Summerland Director of Engineering and Public Works.*

4. The *Owner* agrees that the *works* for which this agreement applies are those *works* listed below and initialled by the *Owner:*

(Initial those items listed below that apply to this agreement. All disciplines will not necessarily be employed on every *subdivision* or *development.)*

_____ roads
_____ curb and gutter, sidewalks, and boulevard
_____ water distribution system
_____ sanitary sewer system
_____ storm drainage system
_____ street lighting, electrical and communication wiring
_____ gas
_____ geotechnical - temporary
_____ geotechnical - permanent
_____ sediment and erosion control

5. The cost of all *work* required to *repair* any defects or deficiencies shall be at the expense of the *Owner.* The *Owner* shall employ only bendable *contractors* to carry out and complete the *work.*

6. The *Owner* shall obtain and provide co the *District of Summerland,* upon request and free of charge, true copies of all contracts and sub-contracts entered into by the *Owner* or its *contractors* and relating to the *works.*

7. The *District of Summerland* covenants and agrees to schedule with the *Owner* a site visit at least forty five (45) days prior to the expiry date of this agreement to inspect the *works* and determine what deficiencies or defects, if any, exist. Upon completion of the site visit the *District of Summerland* will notify the *Owner,* in writing, at least thirty (30) days prior to the expiry date of this agreement what deficiencies or defects, if any, exist.

8. The *Owner* covenants and agrees that he shall cause all deficiencies and defects identified during the site visit to be to be *repaired* to the satisfaction of the *District of Summerland*

Director of Engineering and Public Works no later than seven days prior to the expiry date of this agreement hereinafter called the "Completion Date".

9. The decision of the *District of Summerland Director of Engineering and Public Works* shall be final and binding on all parties hereto in determining whether or not the *work* or any part thereof has been *repaired* and completed in accordance with the provisions of this Agreement.

10. Prior to the issuance of a *Certificate of Total Performance* by the *District of Summerland Director of Engineering and Public Works* and as security for the due and proper performance by the *Owner* of all his covenants and agreements herein contained, the *Owner* shall deposit with the *District of Summerland* an unconditional, Irrevocable Letter of Credit, bank draft or cash, drawn on a chartered bank in Canada for a term of not less than twelve (12) months, in the amount of _____ ($_____), which is equal to the amount required pursuant to Section 5.04 (b) of the *Subdivision Bylaw.*

The Irrevocable Letter of Credit shall be as contained in Schedule A.1 of the *Subdivision Bylaw* and shall be incorporated into and made part of this agreement and attached as Appendix "A"

11. The *Owner* agrees that if the required *repairs,* or any part thereof, are not completed in accordance with the provisions of this agreement, the *District of Summerland* may draw funds from the security provided under Section 10 of this agreement and the *District of Summerland* may complete the *work* at the expense of the *Owner.* The cost of the *repair* shall be deducted from security held by the *District of Summerland* and the balance of the security less any administration fees and costs incurred by the *District of Summerland* will be returned to the *Owner* at the date of expiration of this agreement. If there is insufficient money on deposit with the *District of Summerland* by reason of the security deposit, then the *Owner* will pay such deficiency to the *District of Summerland* immediately upon receipt of an invoice from the *District of Summerland.* It is understood and agreed that the *District of Summerland* may do such *work* either by itself, or by *contractors* employed by the *District of Summerland.*

12. The *Owner* agrees that he shall submit registered copies of all statutory right of way plans and agreements, if applicable, to the *District of Summerland* prior to the completion date and that the *District of Summerland* shall not be required to release the balance of the security, if any, until such time as the *District of Summerland* is in receipt of the required statutory right of way plans and agreements.

13. The *Owner* covenants and agrees to indemnify and save harmless the *District of Summerland,* its Board, officers, agents, and employees from and against all actions, proceedings, costs, damages, expenses, claims and demands whatsoever and by whomever brought or made against the *District of Summerland* or its Council, officers, agents and employees, resulting directly or indirectly from the maintenance, construction, installation, or *repair* of the *works* and services.

14. In consideration of due and proper performance by the *Owner* of his covenants herein contained, the *District of Summerland* covenants and agrees to permit the *Owner* to carry out and perform the *work.*

15. Any demand or notice required or permitted to be given under the provisions of this agreement must be in writing and may be given by mailing such notice by prepaid registered post to the party concerned at the address for such party first above recited,

and any such notice or demand mailed as aforesaid shall be deemed to have been received by the party to whom it is addresses on the second business day after the date of posting thereof.

16. It is understood and agreed that the *District of Summerland* has made no representations, covenants, warranties, guarantees, promises, or agreements, oral or otherwise, with the *Owner* other than those contained in this contract.

17. Wherever the singular or masculine is used herein, the same shall be construed as meaning the plural, feminine, or body corporate or politic where the context or the parties so require.

18. This Agreement and the terms, covenants, and conditions herein contained shall enure to the benefit of and be binding upon the parties hereto and their respective heirs, executors, administrators, successors, and assigns.

IN WITNESS WHEREOF the parties hereto have executed this Agreement at the District of Summerland, Province of British Columbia, the day and year above written.

SIGNED by the ***District of Summerland*** in the presence of:	)	**District of Summerland** by its authorized signatories
Name of Witness	)	
Signature of Witness	)	
Occupation of Witness	)	

If *Owner* is an individual:

SIGNED by the ***Owner*** in the presence of:	)	
Name of Witness	)	*Owner's* name
Signature of Witness	)	*Owner's* signature
Occupation of Witness	)	

If *Owner* is a company:

SIGNED by the ***Owner*** in the presence of:	)	Company name
	)	by its authorized signatories
Name of Witness	)	
Signature of Witness	)	
Occupation of Witness	)	

APPENDIX "A"

Attach letter of credit, photocopy of bankdraft, or photocopy of cash receipt.

SCHEDULE "A.5" – COVENANT

THIS INDENTURE made this _____ day of _____,

BETWEEN:

(hereinafter called the "Transferor")

OF THE FIRST PART

AND

District of Summerland,
13211 Henry Avenue, Summerland BC VOH 1ZO

(hereinafter called the "Transferee")

OF THE SECOND PART

A. **WHEREAS** the Transferor is the registered owner in fee simple of all and singular that certain *parcel(s)* or tract(s) of land and premises, situate, lying and being in the Kelowna Assessment Area, in the Province of British Columbia, more particularly known and described as:

Parcel Identifier:
Lot
Osoyoos Division Yale District
Plan

(hereinafter called the "Lands");

B. **AND WHEREAS** pursuant to section 219 of the *Land Title Act,* R.S.B.C. 1996 c.250, there may be registered a covenant against the title to the Lands subject to the covenant, and such covenant is enforceable against the Transferor and the successors in title of the Transferor even if the covenant is not annexed to land owned by the Transferee;

C. **AND WHEREAS** the Transferor has applied to subdivide the Lands;

D. **AND WHEREAS** the water supplied to the Lands is from a well or surface water located on the Lands and may not be potable;

E. **AND WHEREAS** chemical analyses of the water from the well or surface water indicates levels of chemicals that currently or potentially exceed the *Guidelines for Canadian Drinking Water Quality,* published by authority of the Minister of Health Canada as

amended from time to time, (the "Guidelines") and therefore the Transferor has agreed, as a condition of approval of *subdivision* of the Lands, to enter into this Covenant with the Transferee;

F. **AND WHEREAS** the results of chemical testing are representative of the individual sample and are subject to fluctuation and whereas further the quantity of water supplied to a well or surface water is subject to fluctuation;

G. **AND WHEREAS** the Lands, in order to be used for ordinary residential purposes, will require an appropriate water treatment system serving the *water supply* from the well or surface water so as to make the water fit for human consumption and satisfy the Guidelines.

NOW THEREFORE in consideration of the promises set forth in this Covenant and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the parties hereby agree as follows:

1. The Transferor shall not use the Lands to construct, erect, maintain or occupy any dwelling intended for residential use unless the Transferor shall firstly install a water treatment system that will render the water supplied to the dwelling potable according to the Guidelines.

2. The Transferor shall maintain the water treatment system so that the treated water shall continue to be potable according to the Guidelines. The Transferor shall be responsible for all future testing of the *water supply* to determine compliance with the Guidelines.

3. The Transferor does hereby, on behalf of the Transferor and the Transferor's heirs, executors, administrators, successors and assigns, remise, release, indemnify and save harmless the Transferee, its officers, officials, employees or agents from any and all claims, causes of action, loss or suits of whatever nature or kind including, without limitation, claims for property damage, personal injury or death arising out of or in any way connected with this Covenant and the *water supply* for the Lands. The Transferor does further agree that the Transferee shall have no obligation to ensure compliance with or enforce the terms of this Covenant or to do any act or thing in connection with the *water supply* for the Lands, which at all times shall remain the responsibility of the Transferor and the Transfer's heirs, executors, administrators, successors, assigns and successors in title.

4. a. No term, condition, covenant or other provision of this Covenant will be considered to have been waived by the Transferee unless the waiver is expressed in writing by the Transferee;

   b. Any waiver by the Transferee of any term, condition, covenant or other provision of this Covenant or any waiver by the Transferee of any breach, violation or non-performance of any term, condition, covenant or other provision of this Covenant does not constitute and will not be construed as a waiver of any further or other term, condition, covenant or other provision of this Covenant or any further or other breach, violation or non-performance of any term, condition, covenant or other provision of this Covenant.

5. Pursuant to section 219 of the *Land Title Act,* the covenants herein contained shall be covenants running with the Lands and shall enure to the benefit of and be binding upon

the Transferor and the Transferor's heirs, executors, administrators, successors, assigns and successors in title.

6. If any part of this Covenant 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 enforceable to the fullest extent permitted by law.

7. Nothing contained or implied in this Covenant shall prejudice or affect the exercise of any of the Transferee's functions under any source of authority including, without limitation, any statutes, regulations, bylaws, orders or other documents, all of which may be fully and effectively exercised by the Transferee.

8. The Transferor will do or cause to be done all things and execute or cause to be executed all documents and give such further and other assurances which may be reasonably necessary to give proper effect to the intent of this Covenant.

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

This is the instrument creating the condition or covenant entered into under section 219 of the *Land Title Act* by the registered owner(s) referred to herein.

_____

Approving Officer

END OF DOCUMENT

CONSENT AND PRIORITY

_____, being the registered holder of a mortgage registered under Registration Number _____ against title to the Lands hereby consents to the filing of this covenant and hereby grants priority to this covenant over its mortgage registered under Number _____.

SCHEDULE "A.6" - LATECOMER AGREEMENT

THS AGREEMENT made the day of

BETWEEN:

(hereinafter referred to as the *"Owner")*

OF THE FIRST PART

AND:

District of Summerland, a municipal corporation duly incorporated pursuant to the provisions of the Municipal Act of the Province of British Columbia, with its office at 13211 Henry Avenue, Summerland, British Columbia, VOH 1ZO.

(hereinafter ref erred to as the *"District")*

OF THE SECOND PART

WHEREAS the *Owner* is the owner within the meaning of the Municipal Act, R.C.B.C. 1996, c. 323, and proposes to subdivide or develop certain lands and premises located within the District, Province of British Columbia and legally described as:

(hereinafter ref erred to as the *"Lands"*)

AND WHEREAS the *District* has required and the *Owner* has agreed to provide certain excess or extended services as defined in Section 939 of the Municipal Act (hereinafter called the *"Excess or Extended Services")* in connection with the proposed *subdivision* or *development* of the *Lands;*

AND WHEREAS the *Excess or Extended Services* may serve land other than the *Lands* being *subdivided* or *developed;*

AND WHEREAS the *District* considers the costs to provide the *Excess or Extended Services* in whole or in part to be excessive and accordingly has required the *Owner* to pay for and provide the *Excess or Extended Services;*

AND WHEREAS the *Owner* has paid (**insert capital costs**) as the capital cost of the *Excess or Extended Services;*

AND WHEREAS it is the intent of the *District* to make every effort to provide for the collection of a share of the costs of the required *Excess or Extended Services* from the owner of all new *subdivisions* and *developments* (hereinafter referred to as the "Latecomer") that may connect to or use the *Excess or Extended Services* and provide for the repayment of these monies to the *Owner;*

AND WHEREAS this agreement is made pursuant to Section 939 of the *Municipal Act.*

NOW THEREFORE THIS AGREEMENT WITNESSETH that in consideration of the premises and the mutual covenants and agreements hereinafter set forth, it is agreed between the parties hereto as follows:

1. In this Agreement, unless the context otherwise requires, all words and expressions must have the same meaning assigned to them as like word or expressions contained in the Interpretation Section of the Subdivision and Development Servicing Bylaw of the District.

2. The *District* shall:

    a) determine the proportion of the costs of providing the services that it considers constitutes the *Excess or Extended Services;*

    b) determine which part of the *Excess or Extended Services* that it considers will benefit each of the *parcels* of land that will be served by the *Excess or Extended Services;*

    c) impose as a condition of an owner connecting to or using the *Excess or Extended Services,* a charge related to the benefit determined under Section 2 (b) of this agreement (hereinafter referred to as the *"Latecomer Charge").*

3. <u>Residential latecomer:</u>

    The parties agree that the *Latecomer Charge* which constitute the *Excess or Extended Services* to each residential dwelling unit that will be served by the *Excess or Extended Services* shall be determined as follows:

    A/C+B
    <u>Non Residential latecomer:</u>

The parties agree that the *Latecomer Charge* which constitute the *Excess or Extended Services* to lands *developed* for uses other than residential that will be served by the *Excess or Extended Services* shall be determined as follows:

((A/C + B)*D) / 1200

4. For the purposes of Section 3 above, the parties hereto agree that:

   (i) "A" equals (**insert total costs**) which is the (**insert capital costs**) paid by the *Owner* as his capital cost contribution to the *Excess or Extended Services* plus a 3% administration fee of (**insert administration fee**) payable to the *District;*

   (ii) "B" shall mean interest on the sum equal to (A divided by C) at a rate equal to the Prime Interest Rate of the Royal Bank of Canada plus three percent (3%) calculated from the date of *substantial performance* to the date of connection to the benefitting *parcel.* The date of *substantial performance* (hereinafter referred to as *"Substantial Performance")* shall be as certified in writing by the *Owner's Engineer* and attached hereto as Appendix "A" and forming part of this agreement.

   The term "Prime Interest Rate" herein shall be defined as meaning the annual rate of interest announced from time to time by the Royal Bank of Canada as a reference rate then in effect for determining interest rates of Canadian Dollar personal loans in Canada as of the 1st day of January and the 1st day of July in each year. In the event that it may be necessary at any time for the Royal Bank of Canada to prove its Prime Interest Rate applicable as at any time or times, a certificate in writing of the manager for the time being of the Main branch of the Royal Bank of Canada in Summerland, British Columbia setting forth the said Royal Bank of Canada's Prime Interest Rate as at an time of times shall be conclusive evidence as to the Royal Bank of Canada's Prime Interest Rate as in the said certificate set forth;

   (iii) "C" shall be the figure (**insert # of *parcels***) being the total number of *parcels* the *District* calculates will benefit from connection to the *Excess or Extended Services* within the term of this Agreement;

   (iv) "D" shall be defined as meaning the projected daily sewerage flow (in litres) as calculated by the Owner's *Engineer* and as approved by the *District Director of Engineering and Public Works* relating to the non-residential lands being connected to the *Excess or Extended Services.*

5. The parties agree that the area which is subject to the *Latecomer Charge* as set out in this agreement is that area shown outlined in Appendix "B" attached hereto and forming part of this agreement.

6. The *District* shall collect from the *Latecomer* within the benefitting area, the *Latecomer Charge* at the time of *subdivision* when the lands may connect to or use the Excess or Extended Service and at the time of building permit when the *Owner* of a benefitting property applies to connect to and use the *Excess or Extended Services.* For phased *development* the charges will be pro rated and collected at each phase.

7. The Parties hereto agree that the *Lands* shall be subject to *Latecomer Charges* pursuant to this agreement and these charges will be added to those *Latecomer Charges* collected

from other benefitting properties in order to ascertain if the total capital cost contribution has been collected as per Section 15 of this agreement.

8. Except as otherwise provided, the *District* agrees not to allow any owner or user of any benefitting property to connect to the *Excess or Extended Services* without such owner or user having first paid the *District* the *Latecomer Charge.*

9. The parties hereto agree that the administration fee shall be paid for by *Latecomer Charges.* The *District* shall apply all initial *Latecomer Charges* towards payment of the administration fee until such time as the total amount collected equals that amount stipulated in Section 4 (i) above. Once the administration fee has been paid in full, the *District* shall pay all subsequently collected *Latecomer Charges* to the *Owner* at the address of the *Owner* as set forth in this agreement or at such other address as the *Owner* may provide. If the said payments are returned to the *District,* the *District* shall hold such funds for one (1) year. If said funds are not claimed by the *Owner* within such time periods, the *District* shall retain all sums so held for its own use absolutely.

10. The parties hereto agree that the owners of all residentially zoned lands benefitting from the *Excess or Extended Services* included within that area shown outlined in Appendix "B" shall pay the *Latecomer Charge* as set forth in this agreement less a credit equivalent to the *Latecomer Charge* for one residential dwelling unit for each *parcel* of land legally described by lot and plan number at the Kamloops Land Title Office as at the date of application for *subdivision* or building permit.

11. Notwithstanding anything provided in this Agreement to the contrary, the parties agree that the *District* shall not be required to collect the *Latecomer Charge* from any residence or development which is in existence prior to *Substantial Performance.*

12. The *Owner* covenants and agrees that there are no financial agreements or arrangements by which owners of land within the benefitting areas have contributed or will be contributing to the cost of the *Excess or Extended Services* which are the subject of this Agreement

13. In the event of any assignment or transfer of the rights of the *Owner* voluntarily, involuntarily or by operation of law, the *District* shall pay any benefits accruing hereunder, after notice, to such successor of the *Owner* as the Administrator of the *District,* in his sole judgement, deems entitled to such benefits; and in the event that conflicting demands are made upon the *District* for benefits accruing under this Agreement, then the *District* may, at its option, commence an action in interpleader joining any other party claiming rights under this Agreement, or other parties which the *District* believes to be necessary or proper, and the *District's* liability therefore shall be fully extinguished, upon paying the person or persons whom any court having jurisdiction of such interpleader action shall determine. In such action, the *District* shall be entitled to recover its reasonable legal fees and costs, which fees and costs shall constitute a lien upon all funds accrued or accruing pursuant to this Agreement.

14. The parties agree that the *District* shall use reasonable efforts to collect *Latecomer Charges* pursuant to Section 939 of the Municipal Act. The *Owner* agrees that in the event that the *District* does not collect the *Latecomer Charge,* the *District* shall not be liable to the *Owner* for the same. The *Owner* does hereby further remise, release and forever discharge the *District,* its directors, officers and employees of all matters arising out of this agreement and the collection of *Latecomer Charges* pursuant to this Agreement.

15. This agreement shall become null and void upon the earlier of ten (10) years after *Substantial Completion* or at that date when the *Owner* has recovered his total capital cost contribution as stipulated in Section 4 (i) above, plus any applicable interest. The total *Latecomer Charges* paid to the *Owner* shall not exceed the total capital cost contributed by the *Owner* plus any applicable interest.

16. It is agreed that the *District* has made no representations, covenants, warranties, guarantees, promises or agreements, oral or otherwise, with the *Owner* other than those contained in this agreement.

17. Subject to the *District's* contractual obligation to the *Owner* as provided herein, nothing contained or implied in this agreement shall prejudice or affect the rights and powers of the *District* in the exercise of its functions under any letters patent, statute, by law, order and regulation.

18. Wherever the singular or masculine is used herein, the same shall be construed as meaning the plural, feminine or body corporate or politic where the context so requires.

19. This agreement shall enure to the benefit of and be binding upon the parties hereto and their respective heirs, executors, administrators, successors and assigns.

20. The parties hereto shall do and cause to be done all things and execute and cause to be executed all documents which may be necessary to give proper effect to the intention of this Agreement.

21. Time is of the essence in this Agreement.

22. Any notice to be given pursuant to this Agreement shall be sufficiently given if delivered or mailed to the parties at the addresses indicated on this Agreement.

23. This Agreement shall be governed by the laws of the Province of British Columbia.

24. If a company, the *Owner* represents and warrants to the *District* that all necessary corporate actions and proceedings have been taken to authorize the entering into this Agreement and that this Agreement constitutes an agreement binding to the *Owner.*

IN WITNESS WHEREOF the parties hereto have executed this Agreement at the District of Summerland, Province of British Columbia, the day and year above written.

SIGNED by the ***District of Summerland*** in the presence of:	)	**District of Summerland** by its authorized signatories
Name	)	
Address	)	
Occupation	)	

If *Owner* is an individual:

SIGNED by the ***Owner*** in the presence of:	)	
Name	)	*Owner's* name
Address	)	*Owner's* signature
Occupation	)	

If *Owner* is a company:

SIGNED by the ***Owner*** in the presence of:	)	Company name
	)	by its authorized signatories
Name	)	
Address	)	
Occupation	)	

APPENDIX "A"

Attach a copy *of Engineer's* letter certifying *Substantial Performance*

APPENDIX "B"

Attach a copy of the map indicating the boundaries of the benefitting area

SCHEDULE “B”

QUALITY ASSURANCE DOCUMENTS

This is Schedule "B" of the District of Summerland Subdivision and Development Servicing Bylaw No. 99-004

_____

Administrator/Clerk

SCHEDULE “B.1" - COMMITMENT BY OWNER AND ENGINEER

(This form must be submitted before the *District of Summerland Director of Engineering and Public Works* will issue a certificate to commence construction. A separate form must be submitted by each *Engineer.)*

Director of Engineering and Public Works
District of Summerland
13211 Henry Avenue
Summerland, B.C.
VOH 1ZO

Date: _____

Dear Sir:

RE: _____

_____
(Legal Description and Address of *Subdivision or Development)*

The undersigned *Owner* has retained _____ as the Owner’s *Engineer* to coordinate and review all associated design criteria and *field reviews* of all *works* required for this *subdivision or development.* The *Owner’s Engineer* shall take all such steps as regulated under the Provincial Statute for his or her profession and by definition of *field reviews* hereinafter set forth, to ascertain that the design will comply with and construction will substantially conform in all material respects with the provisions of the *Subdivision Bylaw* and other applicable Permits, Bylaws, Acts, and Regulations which apply to the *subdivision or development.* The *Owner’s Engineer* will ensure that only qualified personnel are retained to carry out tests, inspect or carry out design *work,* detailing, or *field reviews.*

"field reviews" mean such reviews of the *work:*

(a) at the site of *subdivision* or *development* to which the *subdivision* application or building permit relates, **AND**;

(b) where applicable, at the fabrication site where components of the required *works* are fabricated,

that the *Owner’s Engineer,* in his or her professional discretion, considers to be necessary in order to ascertain that the *work* substantially conforms in all material respects to the design drawings and supporting documents prepared by the *Owner’s Engineer* and as marked, "Approved for Construction" by the *District of Summerland Director of Engineering and Public Works.* This will include keeping record of all site visits and any corrective actions taken as a result thereof.

The undersigned *Owner* has given a contractual mandate to the *Owner's Engineer* to review reports of other testing and inspection agencies and disciplines where necessary, comment on their acceptability, determine the corrective action to take if unacceptable, and maintain a detailed record of every such report and comment. The *Owner's Engineer* will submit summary progress reports to the *District of Summerland Director of Engineering and Public Works* on request. The *Owner* and the *Owner's Engineer* acknowledge their responsibility to each notify the *District of Summerland Director of Engineering and Public Works* in writing *thirty* (30) days prior to any intended termination of or by the *Owner's Engineer.* The *Owner* and the *Owner's Engineer* understand that where the *Owner's Engineer* ceases to be retained at any time during construction of the *works, work* on the above *subdivision or development* shall cease until such time as

(a) a new *Engineer* has been retained, **AND**;

(b) new documentation as contained in Schedules B.1 and B.2 of the *Subdivision Bylaw* are submitted to the *District of Summerland Director of Engineering and Public Works.*

The undersigned *Engineer* certifies that he/she is an *Engineer* licensed to practice in the Province of British Columbia and has been retained to ensure that the design will comply with and construction of the *subdivision* or *development* will substantially conform in all material respects with the *Subdivision Bylaw* and will submit letters of Certification of Bylaw Compliance as needed, for the approval of the above *subdivision or development.*

Furthermore, the undersigned *Engineer* hereby covenants that his or her firm presently carries liability insurance in the amount of one million dollars
($1,000,000).

If ***Owner*** is an individual:

SIGNED this day of ,)
by the ***Owner*** in the presence of:)
)
)
Name of Witness) *Owner's* name
)
)
Signature of Witness) *Owner's* signature
)
_____)
Occupation of Witness)

If ***Owner*** is a company:

SIGNED this day of ,)
by the ***Owner*** in the presence of:)
)
_____) by its authorized signatories
Name of Witness)
)
)
Signature of Witness)
)
)
Occupation of Witness)

SIGNED this day of ,)
by the ***Owner's Engineer*** in the presence of:)
)
)
Name of Witness) Engineer's name
)
)
Signature of Witness) Engineer's signature
)
_____)
Occupation of Witness)

(If the *Owner's Engineer* is a member of a firm, complete the following)

I am a member of the firm _____
and I sign this letter on their behalf.

SCHEDULE "B.2" - COMMITMENT TO DESIGN AND FIELD REVIEW

(This form must be submitted before the *District of Summerland Director of Engineering and Public Works* will issue a certificate to commence construction. A separate form must be submitted by each *Engineer.)*

Director of Engineering and Public Works
District of Summerland
13211 Henry Avenue
Summerland BC
VOH 1ZO

Date: _____

Dear Sir:

RE: _____

_____
(Legal Description and Address of *Subdivision or Development)*

The undersigned *Engineer* hereby gives the assurance that the:

(Initial applicable works below and cross out and initial non-applicable works)

_____ roads
_____ curb and gutter, sidewalks, and boulevards
_____ water distribution system
_____ sanitary sewer system
_____ storm drainage system
_____ street lighting, electrical and communication wiring
_____ geotechnical - under subdivision application
_____ geotechnical - under building permit
_____ sediment, drainage, and erosion control

for the *subdivision or development* will be designed, constructed and installed in accordance with the *Subdivision Bylaw.*

The undersigned *Engineer* hereby undertakes to be responsible for the *field reviews* of the above referenced *works* during construction.

The undersigned also undertakes to notify the *District of Summerland* in writing as soon as possible if the undersigned's contract for *field reviews* is terminated at any time during construction.

I certify that I am an *engineer* licensed to practice in the Province of British Columbia

SIGNED this day of ,	)	
by the ***Engineer*** in the presence of:	)	
	)	
	)	_____
Name of Witness	)	Engineer's name
	)	
	)	_____
Signature of Witness	)	Engineer's signature
	)	
_____	)	
Occupation of Witness	)	

(If the *Engineer* is a member of a firm, complete the following)

I am a member of the firm _____
and I sign this letter on their behalf.

SCHEDULE "B.3" - CERTIFICATION OF BYLAW COMPLIANCE

(This form must be submitted after *Substantial Performance* of the *work* but before the *District of Summerland Director of Engineering and Public Works* will issue a *Certificate of Total Performance.* A separate form must be submitted by each *Engineer.)*

Director of Engineering and Public Works
District of Summerland
13211 Henry Avenue
Summerland BC VOH 1ZO

Date: _____

Dear Sir:

RE: _____

_____
(Legal Description and Address of *Subdivision or Development)*

I hereby certify that

(a) I have fulfilled my obligations for *field reviews* as outlined in the *Subdivision Bylaw,* and the previously submitted "Commitment to Design and Field Review",

(b) those *works* of the *subdivision or development* opposite my initials in the previously submitted "Commitment to Design and Field Review" substantially comply in all material respects with;

i) the applicable provisions and requirements of the *Subdivision Bylaw.*

ii) the design drawings and supporting documents submitted in support of the application for *subdivision or development.*

(c) I have enclosed the final as constructed drawings and supporting documents prepared by me for this *subdivision or development.*

(d) I am an *Engineer* licensed to practice in the Province of British Columbia.

(Each Engineer shall complete the following)

SIGNED this day of ,)
by the ***Owner's Engineer*** in the presence of:)

)
)
Name of Witness) Engineer's name
)
)
Address of Witness) Engineer's signature
)
_____)
Occupation of Witness)

(If the *Owner's Engineer* is a member of a firm, complete the following)

I am a member of the firm _____
and I sign this letter on their behalf.

SCHEDULE "C"

TECHNICAL REQUIREMENTS

This is Schedule "C" of the District of Summerland Subdivision and Development Servicing Bylaw No 99-004

_____

Administrator

SCHEDULE “C.1" - GENERAL TECHNICAL PROVISIONS

SECTION 1 - GENERAL REQUIREMENTS

1.01 Standard Drawings

The Standard Drawings must be referenced to and interpreted simultaneously with the pertinent Sections and Schedules of this bylaw.

1.02 Advance Notification

The *District of Summerland Director of Engineering and Public Works* will not accept the results of any of the following procedures unless the *Owner’s Engineer* is present during the procedure. The *Applicant* must notify the *District of Summerland Director of Engineering and Public Works* at least twenty four (24) hours in advance, so that a representative of the *District of Summerland* may attend:

- pressure testing
- leakage testing
- flushing and cleaning
- video inspection
- disinfection
- inspection chamber water test

Proceeding without giving proper notification to the *District of Summerland Director of Engineering and Public Works* will require that the procedure be performed again in the presence of the *District of Summerland Director of Engineering and Public Works or his designate.* The *Owner’s Engineer* may instruct the *contractor* to proceed with any of the above procedures if the required notification is given to the *District of Summerland Director of Engineering and Public Works* and if twenty four (24) hours has elapsed since notification, even if a representative of the *District of Summerland* is not present.

1.03 Existing Structure or Utility

Where an existing structure or utility may be affected by the *works,* the *Owner’s Engineer* must inform the *District of Summerland Director of Engineering and Public Works* and the owner of the structure or utility sufficiently in advance so that the *District of Summerland Director of Engineering and Public Works* and the owner of the structure or utility may make an inspection and specify what protective measures must be taken.

Where the alignment of an existing utility conflicts with the alignment of any *works* required under this bylaw, the *Owner* must relocate the existing utility in accordance with the Standard ***Drawing 101****.* The cost of relocating the utility shall be at the expense of the *Owner.*

When existing water, sanitary sewer, or storm drainage alignments conflict with the offsets shown on Standard Drawing 101 or when community sewer is not required pursuant to Schedule C.2, alternative alignments may be submitted for approval.

1.04 Obstructions

Where an unforeseen or other obstruction is encountered which interferes with the design, alignment, or grade, construction must cease until such time as revised proposals are approved by the *District of Summerland Director of Engineering and Public Works.* The *Owner* must repair all items damaged or destroyed to their original condition or better.

1.05 Restoration

All *highways, lanes,* driveways, *boulevards,* and other areas traversed by trenches or damaged during construction must be returned to their original condition or better.

1.06 Removal and Disposal of Accumulated Soils

Upon completion of construction or at any time during construction where soil accumulates on public *roads, sidewalks,* or in *drainage systems* as a result of construction activity in the *subdivision* or *development,* the *Applicant* must remove and dispose of the accumulated soil. If the *Applicant* fails to remove or dispose of the accumulated soil within 72 hours of notification from the *District of Summerland Director of Engineering and Public Works,* the *District of Summerland* may remove and dispose of the accumulated soil at the expense of the *Owner.*

1.07 Connection to or use of Existing Works

Where the *Owner* of a *parcel* proposed to be *subdivided* or *developed* constructs and installs the *works* required by this bylaw, the *Owner* must not use any of the existing *works* of the *District of Summerland* or any other agency until the *District of Summerland Director of Engineering and Public Works* has issued a *Certificate of Total Performance.*

1.08 Discharge of Water into Existing Sanitary or Storm Sewers

No flushing water shall be discharged into any sanitary sewer or storm sewer without the approval of the *District of Summerland Director of Engineering and Public Works* and/or the Ministry of Transportation and Highways.

SECTION 2 - MMCD SUPPLEMENTS

The *MMCD* supplements as contained in this Section shall take precedence over the *MMCD.*

2.01 Global Supplements

The following supplements shall be applied globally to the *MMCD.*

(a) In cases where the *MMCD* makes reference to trench backfill, *road* construction, asphalt paving, or traffic regulations, the Owner's *Engineer* shall ensure that all materials and procedures are in compliance with the District of Summerland requirements.

(b) Replace the word "Municipal" with the words *"District of Summerland."*

(c) Replace the words "Contract Administrator" with the words "Owner's *Engineer."*

(d) Replace the words "Contract Drawings" with the words "Design Drawings marked, **"Approved for Construction"** by the *District of Summerland Director of Engineering and Public Works."*

(e) Subsections titled "Instructions to Tenderers - Part II" or "General Conditions", which are the pink pages at the front of the *MMCD,* delete in their entirety.

(f) Subsections titled, "Payment" or "Measurement for Payment", delete in their entirety.

(g) Subsections titled, "Inspections and Testing", delete entire contents and replace with:

".1 The *Owner's Engineer* will ensure that all inspections and testing are carried out in accordance with the provisions of the *Subdivision Bylaw."*

(h) Subsections titled "Protection of Work, Property and Public", delete entire contents and replace with:

".1 The *contractor* must ensure that due care is taken in order to protect the *work,* existing underground utilities and structures, and other person's property from damage. Any damage must be repaired to the original conditions or better at the expense of the *Owner.*

The *contractor* must provide the necessary safety devices and supervision to protect the public."

(i) Subsections titled "Permits and Approvals", delete entire contents and replace with:

".1 The *Owner's Engineer,* at the expense of the *Owner,* must:

(a) ensure that the *work* is performed in accordance with all applicable laws, ordinances, rules, regulations, codes, bylaws and orders of the *District of Summerland* or other authorities having jurisdiction.

(b) ensure all permits, licenses, approvals and certificates required for the performance of the *work* are obtained."

(j) Sections titled, "Video Inspection", delete entire contents and replace with:

".1 (a) Immediately upon completion of the *works,* including all backfilling and compaction and prior to paving, the *Applicant* must video inspect the completed sewer.

(b) Prior to any video inspection, the sewer must be thoroughly flushed to remove all deleterious materials so that defects, if present, can be observed.

(c) Immediately prior to the video inspection, water must be introduced into all sewers with slopes of less than 1 % in sufficient quantities to flow the entire length of the section being videoed. Once the water has been added, the water shall be turned off. Video inspection must not take place while the water is running.

(d) Picture quality shall be such to produce a continuous 500 line resolution picture

showing the entire periphery of the pipe. Picture quality and definition shall be to the satisfaction of the *District of Summerland Director of Engineering and Public Works.*

(e) Video inspection must be continuous between manholes.

(f) A measuring device shall be provided to measure depth of ponding and shall be continuously visible from the video camera. The measuring device must be capable of measuring ponding to a depth of 100 mm and to an accuracy of 5 mm increments".

Upon completion of the video inspection and prior to paving, a typewritten report must be submitted to the *District of Summerland Director of Engineering and Public Works.* The report must include the following information:

(a) Title page with video company's name, address and phone number, *contractor's* name, *Engineer's* name, location, date, and report number.

(b) A schematic plan showing manholes, sewer mains, *road* names and manhole numbers. Manhole numbers must correspond to the as-constructed drawings.

(c) Summary page with upstream and downstream manhole number and corresponding inspection report page number.

(d) Individual inspection report for each pipe section with street name or location, upstream manhole number, downstream manhole number, direction of video, length of pipe section, type of material, pipe use, diameter of pipe, grade, technician's name, and a section for notes. In addition, the inspection report shall include:

(i) a log of distances to pertinent information such as services, defects, ponding, and debris.

(ii) a description of the pertinent information including length and depth of ponding.

(iii) the tape count to each occurrence of pertinent information.

(iv) photos showing typical view of pipe section being videoed and photos of all defects and deficiencies encountered during video inspection of each pipe section.

Upon completion of the video inspection and prior to paving, a video tape must be submitted to the *District of Summerland Director of Engineering and Public Works.* The video tape must conform to the following:

(a) Type of tape must be VHS in full color.

(b) Tapes must be numbered and cross referenced to inspection report with labels located on top and side of tape.

(c) Date and running distance in meters to an accuracy of two decimal places. The date and distance must be displayed continuously.

(d) Direct voice communication at the start of each section identifying test section, manhole numbers, location, and any other information required to describe section being videoed.

(e) Direct voice communication at all service locations, defects, ponding and deleterious materials. Communication shall be factual information only. (i.e. type of defect, depth of ponding, length of ponding, and type of obstruction).

(k) Sections titled "Low Pressure Air Test" insert at end of section the words and numbers, "Low Pressure Air Testing must be performed using a Weiss Instruments RCTS-1, or an approved equal, gauge with a pressure range of 0 to 100 kpa and incremental readings accurate to 2 kpa.

(l) Subsection Titled "Specifications Division 16 "Standard Detail Drawings Electrical " which form part of the green pages at the end of the MMCD, delete in their entirety.

2.02 Specific Supplements

The following supplements are specific to the corresponding *MMCD* sections and subsections noted and are not to be applied globally. They should, however, be read and interpreted simultaneously with the global supplements contained in Section 2.01 above. *MMCD* sections not listed in Table C.1.1 have no supplements specific to that section.

MMCD SPECIFIC SUPPLEMENTS

Table C.1.1

MMDC Section Number	MMDC Section Name	Supplements Specific to Corresponding Section
1561	*Environmental Protection*	***Section 1.6 Pollution Control:*** *delete contents of J.6.1 and replace with: "Maintain drainage, sediment and erosion control features in accordance with the Drainage, Sediment and erosion Control Plan" submitted to the District of Summerland Director of Engineering and Public Works.*
2210	*Site Grading*	***Section 3.2 Grading:*** *delete contents of 3.2.1 and replace with "Rough grade to levels, profiles and contours in accordance with the Drainage, Sediment and Erosion Control Plan" submitted to the District of Summerland Director of Engineering and Public Works*
2498	*Geosynthetics*	***Section 2.1 Geosynthetic:*** *add 2.1.6 Woven Geotextile Fabric Products providing plant and root barriers shall conform to the following:* • *Minimum Tensile Strength - 900 N* • *Maximum elongation at break - 22%* • *Minimum Tear strength - 500 N* • *Minimum Bursting Strength (Mullen) - 2200 kPa* • *Maximum Equivalent opening size - 300 um* *Add 2.1.7 Non-woven Geotextile Fabric Products providing erosion control and stabilization control shall conform to the following:* • *Minimum Textile Strength • 400 N* • *Maximum elongation at break - 50%* • *Minimum Tear S1rength • 155 N* • *Minimum Bursting Strength (Mullen) - 1275 kPa* ***Section 3.1 Installation:*** *add 3.1.5 Installation of geotextile fabric which provides plant and root barriers, shall conform to the following:*

		• *Geotextile fabric shall be installed in accordance with the manufacturer's recommendations.* • *Fabric shall be placed by unrolling into place and not by dragging across the subgrade.* • *The fabric shall be inspected for punctures or tears prior to any materials being placed upon it and any such defects shall be repaired by overlapping new material or replacement.* • *The entire fabric roll shall be placed and rolled out as smoothly as possible. Wrinkles and folds in the fabric shall be removed by stretching and staking, as required.* • *Overlap at roll ends shall be a minimum of 1 meter and the overlaps shall be stapled or pinned to maintain them during construction activities.* • *No vehicles shall he permitted to pass over the fabric.*
2666	*Waterworks*	***Section 2.1 General:*** *replace contents of 2.1.2 with "A list of approved waterworks products is provided by the District of Summerland Works & Utilities* Department". ***Section 2.2 Tapping Sleeves for Branch Connection 75mm and larger:*** *delete contents of 2.2, 12.2 and 2.2.12.3.* ***Section 2.3 Valves and Valve Boxes:*** *replace 2.3.3 with "Mainline Butterfly Valves": may only be installed on mains greater than 400mm, to AWWA C504 Class 150B.* ***Section 2.5 Service Connection Pipe, Joints and Fittings:*** *replace 2.5.1 with "Pipe diameter 19mm to 75mm to be Type K. Annealed copper, to ASTM B88M abd pipe diameter 38mm to 50mm (irrigation only) may be Pressure Class 160 Polyethylene tubing, certified to CSA BJ 37.1* ***Section 2.6 Hydrants:*** *delete contents of 2.6.1 and replace with: "For water systems owned and operated by the District of Summerland, hydrants shall be Terminal City Iron Works Number C-71P or TC20P compression", Clow Canada Brigadier Series M, or Canada Valve Century type. All fire hydrants to have Storz Connection for fire hose connection.* *Replace 2.6.2 with "Colour-All hydrants to be painted* red". ***Section 3.12 Hydrants:*** *add 3.12.7:* "A *concrete retaining wall must be installed to protect hydrants adjacent to road cut slopes. In areas where road ditches exist, a culvert sized to meet District of Summerland requirements and a 3 meter wide gravel pad across the ditch must be provided for access to the* hydrant". ***Section 3.17 Flushing, Testing and Disinfection:*** *add to 3.17,2 "Upon satisfactory completion of testing and disinfection, and prior to allowing the main to be used for active service, the Consultant shall provide the Director of Engineering and Public Works with written certification that the flushing, testing and disinfection has been performed in accordance with A WWA and MMCD requirements, and has been substantiated with Total and Fecal Coliform results if zero colonies per 100ml.* ***Section 3.21 Disinfections and Flushing Procedures:*** *add 3. 21.10: "On completion of a water storage facility, chlorination must be carried out in accordance with AWWA 652-86".*
2731	*Sanitary Sewers*	***Section 2.2 Plastic Pipe, Mainline Smooth Profile:*** *append to Section 2. 2.1: "Ribbed piping shall not be permitted".* *Add Section 2.2.5: "Colour to be green".* ***Section 2.3 Service Connections:*** *add Section 2.3. 11 "Colour to be green".* ***Section 3.0 Execution:*** *add "Section 3.21 INSPECTION CHAMBER WATER TEST .1 prior to paving, and in addition to Section 2.01 (j) of the Subdivision Bylaw, the contractor must introduce a minimum of 20 litres of water in each inspection chamber to visually inspect for ponding".* ***Section 3.6 Pipe Installation:*** *replace contents of Section 3.6.6 with "Pipes on curved alignments are not allowed".* ***Section 3.20 Connection to Existing Mains:*** *replace Section 3.20.1 with "Connections to existing sewer systems will be made by the District of Summerland and the cost of which will be borne by the Contractor. Make all necessary arrangements with the Contract Administrator to schedule work to prevent delays".* *Delete Section 3.20.2*

2732	*Sewage Forcemain*	***Section 2.2 Pipe Joints and Fittings:*** *delete Section 2.2.1* ***Section 3.16 Connections to Existing Mains:*** *delete clauses 3.16.1 and 3.16.2 and replace with "Connections to existing sewer systems will be made by the District of Summerland and the cost of which will be borne by the Contractor. Make up all necessary arrangements with Contract Administrator to schedule work and prevent delays".*
3300	*Cast-In-Place Concrete*	***Section 1.6 Inspection and Testing:*** *delete contents of 1.6.1 and replace with: "The Applicant must retain an independent materials testing firm to carry out comprehensive testing of concrete which must include unit weight determination, slump test, air test and casting of test cylinders. One test consisting of three test cylinders must be made for every 175 meters of curb, gutter and sidewalk. In no case shall there be less than one test on any given day which concrete is poured".*
16650	*Electrical*	*Delete entire Section 2.0 Products. The applicant must refer to the District of Summerland Electrical Department Construction Standards for a list of approved products to be used in conjunction with the approved subdivision plans. Delete entire Section 3.0 Execution, with the exception of Section 3.1 General.*

2.03 Drawing Supplements

MMCD Standard Detail Drawings that are superseded by District of Summerland Standard Drawings or are to be deleted, are set out in Table C.1.2. MMCD Standard Detail Drawings not listed in Table C.1.2 are not superseded or deleted and must be referenced to and interpreted simultaneously with the pertinent Sections and Schedules of this bylaw. The District of Summerland Standard Drawings are contained in Schedule D.2.

Table C.1.2

MMCD Drawing Section Name	MMCD Drawing #	Replaced by D.O.S. Standard Drawing #
General Details	G1	A01
"	G2	A02
"	G4	104
"	G5	104
"	G8	A03
"	G7	Delete
Storm & Sanitary Sewers	S1	402
"	S2	402
"	S3	404
"	S4	Delete
"	S5	Delete
"	S6	406
"	S7	407
"	S8	501
MMCD Drawing Section Name	MMCD Drawing #	Replaced by D.O.S. Standard Drawing #
"	S9	408
Storm & Sanitary Sewers	S10	Delete
"	S11	502
"	S12	509

“	S13	507
“	S14	506
“	S15	508
Waterworks	W1	306
“	W2a	301
“	W2b	301
“	W3	305
“	W4	304
“	W5	308
“	W6	303
“	W7	303
“	W8	302
Concrete & Misc. Details	C1	203
“	C2	202
“	C4	201
“	C5	201
“	C7	206
“	C8	205
“	C9	204
“	C10	105
“	C11	106
“	C12	107
“	C13	108
“	C14	109
“	C15	111
Roadworks	R1	114
Electrical Details	E1.3	Deleted
“	E5.18	Deleted
“	E8.2	Deleted
“	ES.3	Deleted

SCHEDULE "C.2" - SERVICING REQUIREMENTS

SECTION 1 - MINIMUM LOT AREA AND MINIMUM LOT WIDTH

Bylaw 2000-219 amended (August 8, 2005):
Bylaw 2000-453 replaced text and deleted entire Table C.2.1 and Figure C.2.A (September 12, 2011):

The Approving Officer may exempt a person proposing to subdivide land from any prescribed minimum lot width or minimum lot depth required under the District of Summerland Zoning Bylaw 2000-450.

Bylaw 2000-068 amended Table C.2.2. (February 26, 2001):
Bylaw 2000-453 replaced Table C.2.2. in its entirety (September 12, 2011):
Bylaw 2014-006 amended Table C.2.2. (June 23, 2014)

SECTION 2-TYPE AND EXTENT OF SERVICING

STREET REQUIREMENTS (REFER TO STANDARD DRAWINGS)

TABLE C.2.2 **UTILIITIES** **ROAD CLASSIFICATIONS**

ZONE (2)	WATER	SEWER	DRAIN	WIRING	LIGHTING	ROAD CHARACTER	LOCAL (1)	MINOR COLLECTOR (1)	MAJOR COLLECTOR (1)	ARTERIAL (1)
A1	WTR	SWRSEP	DITCH	OH	SLI	RURAL	100-9	100-4	100-3	100-2
A2	WTR	SWRSEP	DITCH	OH	SLI	RURAL	100-9	100-4	100-3	100-2
CR1	WTR	SWRSEP	STM	UG (4)	SL (4)	RURAL	100-6	100-4	100-3	100-2
CN	WTR	SWR	STM	UG	SL	URBAN	100-9	100-4	100-3	100-2
CT1	WTR	SWR	STM	UG	SL	URBAN	100-6	100-4	100-3	100-2
CH	WTR	SWR	STM	UG	SL	URBAN	100-6	100-4	100-3	100-2
CB1	WTR	SWR	STM	UG	SL	URBAN	100-6	100-4	100-3	100-2
CB2	WTR	SWR	STM	UG	SL	URBAN	100-6	100-4	100-3	100-2
CM	WTR	SWR	STM	UG	SL	URBAN	100-6	100-4	100-3	100-2
M1	WTR	SWRSEP	STM	OH (4)	SLI (4)	RURAL	100-5	100-4	100-3	100-2
M2	WTR	SWR	STM	OH (4)	SLI (4)	RURAL	100-5	100-4	100-3	100-2
M3	WTR	SWRSEP	STM	OH	SLI	RURAL	100-5	100-4	100-3	100-2
M4	WTR	SWRSEP	DITCH	OH	SLI	RURAL	100-9	100-4	100-3	100-2
I	WTR	SWR	STM	UG	SL	URBAN	100-5	100-4	100-3	100-2
FG	WELL	SWRSEP	DITCH	OH	SLI	RURAL	100-9	100-4	100-3	100-2
RSD1	WTR	SWR	STM	UG	SL	URBAN	100-6	100-4	100-3	100-2
RSD1 i	WTR	SWR	STM	UG	SL	URBAN	100-6	100-4	100-3	100-2
RSD2	WTR	SWR	STM	UG	SL	URBAN	100-6	100-4	100-3	100-2
RSD3	WTR	SWR	STM	UG	SL	URBAN	100-6	100-4	100-3	100-2
RPN	WTR	SWR	STM	UG	SL	URBAN	100-6	100-4	100-3	100-2
RDH	WTR	SWR	STM	UG	SL	URBAN	100-6	100-4	100-3	100-2
RMD	WTR	SWR	STM	UG	SL	URBAN	100-6	100-4	100-3	100-2
RSH	WTR	SWR	STM	UG	SL	URBAN	100-6	100-4	100-3	100-2
RMH	WTR	SWR	STM	UG	SL	URBAN	100-6	100-4	100-3	100-2
RHD	WTR	SWR	STM	UG	SL	URBAN	100-6	100-4	100-3	100-2
RPN	WTR	SWR	STM	UG	SL	URBAN	100-6	100-4	100-3	100-2

Notes:

(1) Sidewalks:
Arterial: sidewalks are required on one or both sides of Arterial highways
Major Collector: sidewalks are required on one side of highway
Minor Collector: sidewalks not required
Local: sidewalks are required on one side of highway, where the highway will be used to provide the public with safe and efficient access to educational facilities, government facilities, parks, recreation sites, shopping centres, entertainment centres, health Institutions or religious institutions, multiple family uses otherwise not required.

(2) The zones identified in this table are the zones designated in Zoning Bylaw 2000-450.

(3) Servicing requirements in Comprehensive Development Zones (CD's) are site specific and will be determined at the time when the zone is created.

TYPE AND EXTENT OF SERVICING KEY SHEET

ABBREVIATION	REQUIREMENT
WTR	Community water system. In subdivisions which are to be provided with a community water system, each Parcel within the proposed subdivision, or a Parcel being Developed, must be supplied by a water distribution system, including service connections, and with adequate fire flow and protection, which is designed in accordance with the standards prescribed in Schedule C.5 of this Bylaw.
WELL	Where a community water system is not available a proven water supply located on each parcel is permitted.
SWR	Community sanitary sewer system as per Schedule C.6 of this Bylaw.
SWRSEP	Sanitary sewage effluent by ground disposal approved by the Medical Health Officer, or a community sanitary sewer as per Schedule C.7 of this Bylaw.
DITCH	Drainage collection and disposal system by open ditches and culverts.
STM	Closed drainage collection and disposal system as per Schedule C.8 of this Bylaw (i.e. a system other than open ditches).
SL	Street lighting throughout the subdivision as per Schedule C.9 of thie Bylaw.
SLI	Street lighting at street intersections only as per Schedule C.9 of this Bylaw.
OH	Overhead electrical and communication wiring as per Schedule C.10 of this Bylaw.
UG	Underground electrical and communication wiring as per Schedule C.10 of this Bylaw.

SCHEDULE "C.3" - DESIGN AND CONSTRUCTION OF HIGHWAYS AND WALKWAYS

SECTION 1 - GENERAL REQUIREMENTS

1.01 Introduction

Where the provisions of **Table C.2.2** require the construction of highways (roads) the *Applicant* shall provide highways in accordance with the standards and specifications set out in this schedule, the Ministry of Highways (if applicable) and the provisions of this bylaw.

1.02 Approval of Engineering Drawings Required Prior to Construction

Engineered drawings showing detailed design of highways shall be submitted to the *Director of Engineering and Public Works* and to the Ministry of Transportation and Highway (if applicable) for approval prior to commencement of construction. These drawings must show existing ground profile, proposed horizontal and vertical alignment of the roads (including walkways and all other details as may be required.

1.03 Classification of Highways

Prior to design of the *highway* system, the *Director of Engineering and Public Works* shall classify each highway proposed within the *subdivision* and stipulate the required standards in accordance with the provisions of this bylaw.

1.04 Geotechnical Evaluation

The *Applicant* shall be responsible for engaging the services of a qualified Geotechnical Engineer to investigate surface and subsurface conditions within the proposed *subdivision.* The Geotechnical Engineer shall prepare a report outlining his findings and shall provide clear, definitive recommendations on the geometry and placement of fill section, compaction requirements over and above those stipulated in this Bylaw, cut slope geometry, pavement structures for highway, and any other geotechnical issues affecting *highway* construction within the proposed *subdivision.*

SECTION 2 - DESIGN CRITERIA – HIGHWAYS

2.01 General Design Requirements

Except as provided for in Schedule C.1 Section 1.03, all utilities must be located in accordance with Standard Drawing 101.

In the preparation of Engineering plans for *highways,* the *Applicant* shall take into account the following general design considerations.

(a) Continuation of Existing Streets

The design and arrangement of *highways* within a subdivision shall provide for the continuation or projection of existing streets in the surrounding area. In no case shall the arrangement of *highways* within a proposed subdivision make impractical subdivisions of adjoining *parcels.*

(b) Topography to be taken into Account

The design and arrangement of *highways* shall be suited to the topography of the land proposed to be subdivided.

2.02 Consistency with Official Community Plan

The location, classification, and standard of all *highways* proposed within a subdivision shall take into account the proposed use of the land and shall conform to the provision of the District of Summerland Official Community Plan.

2.03 Local Highways

Local *highways* within a proposed subdivision shall be arranged so that their use by through traffic shall be discouraged.

2.04 Cul-de-Sacs

All dead end roads must be provided with a cul-de-sac bulb. Cul-de-sacs streets shall not exceed 200 meters in length and shall be provided with an area designed to permit safe and adequate space for the turning of emergency and motor vehicles. The allowable maximum length may be increased if alternate access for emergency and evacuation purposes are provided.

2.05 Lanes

Lanes, meeting the standards set out in this bylaw, shall be provided where the *Director of Engineering and Public Works* deems them to be necessary. The minimum width of a lane shall be 6.0m.

Bylaw 2000-250 amended Section 2.06 Walkways (June 12, 2006):

2.06 Walkways

Walkways proposed by the Applicant must be installed generally in accordance with Standard Drawings 104, 105, 106 and 107 and with the specifications set out in this Schedule, MMCD Sections 02512, 02523, 02831, 02921 and the provisions of this bylaw. The location of all *walkways* shall be approved by the *Director of Engineering and Public Works* or the *Director of Parks and Recreation,* if applicable.

Walkways shall be provided where the *Director of Engineering and Public Works* or the *Director of Parks and Recreation* deems them necessary to provide access through a subdivision to schools, parks and recreation sites, shopping and entertainment areas, conservation areas, public use destinations and from one road network segment to another. The *Director of Engineering and Public Works* in consultation with the *Director of Parks and Recreation* will consider to what extent the *walkway* shall be constructed including such details as usage (urban or non-urban), location, width, horizontal alignment, vertical alignment, drainage, type of surface, lighting, wheelchair access/stairs, safety and security.

Walkways shall be delineated by the placement of landscaping and/or fencing as defined in the District of Summerland Zoning Bylaw 99-001, acceptable to the *Director of Engineering and Public Works* and the *Director of Parks and Recreation* on both sides of the walkway corridor. The height of any required fencing shall be a minimum of 1.2 meters.

2.07 Intersections

Intersections shall be designed as follows:

- intersecting highways shall meet substantially at right angles (between 70 and 110 degrees)
- jogs in highway alignment at intersections shall be avoided except where the
- distance between centrelines is sufficient to ensure traffic safety. The minimum spacing between tee intersections along a street shall be 60 m
- intersections having more than four intersecting legs shall not be permitted
- intersections shall provide adequate crossing sight distances and stopping sight distances, whichever is greater.

2.08 Reverse Curves

If reverse curves are required in a highway alignment, the Director of Engineering and Public Works may require that they be separated by means of tangents of sufficient length to prevent super elevation rotation.

2.09 Street Names and Traffic Signs

Street names shall be approved by the District of Summerland. Street names and traffic signs and road linage required as a result of constructing or improving streets shall be provided by the District of Summerland at the expense of the *Applicant.*

2.10 Appurtenances

The Owner's Engineer shall detail on the Engineering drawings the location of all proposed traffic islands, retaining walls, guardrails, and permanent barricades. These structures shall be designed in accordance with good Engineering practice.

The design shall show the location of all traffic signs, street signs, and other traffic control devices required to be placed in the road allowance.

Drawings must show all utility poles, ducts, junction boxes and pipelines. The Owner's Engineer shall indicate those utilities which require relocation prior to road construction, and shall conform with the utility the feasibility of their relocation prior to design completion. For underground systems, design drawings shall show the location of underground wiring and appurtenances including the connections to properties.

2.11 Emergency Access

Emergency access must be constructed in accordance with Standard Drawing 102, with curb, gutter and drainage as required.

SECTION 3 - HIGHWAY DESIGN CRITERIA

VERTICAL ALIGNMENT

The vertical alignment of the road shall be set so the grades of driveways of adjacent properties will comply with the current District Driveway Access Bylaw #92-047 as amended from time to time.

3.01 Design Speeds

The design speeds to be used for design of Highways shall be as per table B.1

Table B.1
Design Speed

Arterial (A)	70km/h
Collector (C)	60km/h
Local (L), Recommended for Bare Land Strata	50 km/h
Strata	30 km/h
Industrial	50 km/h

3 .02 Road Crossfall

Minimum road crossfall shall be 2%; maximum crossfall shall be 4%.

3.03 Road Grades

Minimum and maximum road centreline grades shall conform to Table B.2 based on the classification of the road.

Table B.2
Highway Grades*

Road Classification	Minimum Grade	Maximum Grade**
Arterial	0.5%	9%
Collector	0.5%	9%
Industrial	0.5%	8%
Local and Recommended for Bare Land Strata	0.5%	10%
Cul-de-Sac (entry downhill)	0.5%	8%
Cul-de-Sac (entry uphill)	0.5%	8%
Cul-de-Sac (bulbs)	0.5%	6%
Lane	0.5%	9%
Walkway	0.5%	12%

* Maximum grades are to be reduced by 1 % for each (or part of each) 30 metres that the centreline radius is less than 150 metres.

** See also District of Summerland Hillside Development Guidelines

3.04 Vertical Curves

Vertical curves shall be designed to provide safe stopping sight distances. Minimum stopping sight distance is the least distance required to bring the vehicle to a stop under prevailing vehicle and climatic conditions. Vertical curves shall be provided at the following grade changes:

Greater than 0.5% for Arterials
Greater than 1.0% for Collectors
Greater than 2.0% for Locals and Lanes

Vertical curve length is calculated by the equation L=KA where:

Lis the length of the vertical curve (Minimum L = 15m)
K is the constant related to lines and geometry of a parabolic curve
A is the algebraic difference in grades in percent
Minimum K values (in metres) for vertical curve design shall be as described in Table B.3.

Table B.3
Minimum K Values (in metres) for Vertical Curve Design

Road Classification	Crest Curve Minimum	Sag Curve Lighting	No Lighting
Arterial (70 km/hr)	22	15	25
Collector (60 km/hr)	15	10	60
Local, Recommended for Bare Land Strata (50 km/hr)	7	6	11

In order to provide proper drainage, a maximum K value of 80 meters for crest curves and 40 meters for sag curves shall be used.

HORIZONTAL ALIGNMENT

3 .05 Centre Line Radii

The minimum required centreline radius for various super elevation rates for each classification of roadways are as follows:

Road Classification	Horizontal Curve Radii (m)			
	Superelevation (m/m)			
	None	2%	4%	6%
Arterial	Center Line R= 250m	Center Line R = 230	Center Line R = 200	Center Line R = 190
Collector	Center Line R= 160m	Center Line R = 140	Center Line R = 130	N/A

*Local, Recommended for Bare Land Strata	Center Line R = 95m	N/A	N/A	N/A
Strata	Center Line R = 12	N/A	N/A	N/A

3.06 Curb Return Radii

Curb return shall conform to the following and be based on the lesser classified Highway.

Arterial	11.0 m
Collector	11.0 m
Local, Recommended for Bare Land Strata	9.0m
Cul-de-Sac	11.5 m connecting radii to tangent = 16m
Industrial	11.0 m
Strata - 6.0 m roadway	9.0 m
Strata - 7.3 m roadway	7.50

3.07 Intersection Design

Unless indicated elsewhere herein, all intersection design standards shall conform to those outlined in the latest edition of Geometric Design Standards for Canadian Roads and Streets as published by the Transportation Association of Canada. (TAC).

Bylaw 2000-068 amended the following Section 3.08 (February 26, 2001):

3.08 Intersection Grades

Approach grades of minor streets at intersections to major streets shall not exceed 7 5 % of the maximum grade allowed for that street classification. The minor street shall be designed to intersect the major street with a vertical curve of minimum length required for that street classification. The vertical curve shall terminate at the curb line of the intersecting major street using the following K values:

Table B.5
Intersection Curves

Intersecting Street	Minimum K Value	
	Crest Curve	Sag Curve
Arterial	17	15
Collector	7	6
Local, Recommended for Bare Land Strata	4	4

Table B.5A
DESIGN CRITERIA FOR LIMITED ADVERSE TOPOGRAPHIC CONDITIONS

	Collector	Local Road
Design Speed	50	50
Curvature	95	85
Grade	11%	12%
K Sag Curve	6	4
K Crest Curve	6	4

Under limited adverse access conditions, the Director of Engineering and Public Works may allow the criteria listed in Table B.5A while considering factors such as length of grade, amount of lower grade approach, amount of direct access, road width, and drainage requirements.

Crossfalling a road at an intersection will be permitted where required because of topographical features in keeping with good engineering practices.

The transition length from a normal cross-sectioned road to a section of road where there is superelevation shall be calculated based on 15m for every 1% change in grade. If these conditions are to be used the *Applicant* must submit a preliminary design showing a centre line profile with existing ground line and the proposed grade for all streets and intersections affected for adverse topography. If prior approval has not been given by the *Director of Engineering and Public Works*, then any design submitted will not be approved.

3.09 Pavement Structure

The pavement structure shall be designed in accordance with Manual Series MS 1 of the Asphalt Institute (current edition). The pavement structure shall be designed for a fifteen (15) year design life. Staged construction may be considered in the structural design by the *Director of Engineering and Public Works* when a road is to be constructed and to be widened at a later date.

Roads shall be classified as follows for purposes of structural design of the total pavement structure; design traffic values and minimum depths of hot mix asphalt are defined as well:

Table B.6

Road Classification	Design Traffic (l)(ESAL's)	Min. Depth of Hot Mix Asphalt (mm)
Arterial	$>2.8x10^5$	See note 2
Collector	2.8×10^5	75
Industrial	$.6X10^5$	75
Residential	2.8×10^4	50

Lanes	Not Applicable	50
Walkways	Not Applicable	50

NOTES:

1) See chapter IV of MS 1 of the Asphalt Institute
2) To be specifically designed, based on projected ESAL's, in accordance with MS 1 of the Asphalt Institute.

Soils used to construct the roadway subgrade shall be evaluated in accordance with MS 1 (Chapter V) to determine the load bearing capacity of the subgrade. For this purpose, the California Bearing Ratio (CBR) test value shall be obtained using soil moulded to the minimum specified compaction level. The design CBR values shall be determined in the soaked condition in accordance with ASTM D 1883. This value shall be used for structural design purposes. The minimum compacted depth of granular base·course, in the total pavement structure, shall be 75mm.

If the soaked CBR value of the sub grade soil is less than 3, sub grade enhancement shall be provided to create a soaked CBR of 3, and the pavement structure shall be designed using a soaked CBR of 3. Subgrade enhancements shall be provided by placement of an initial layer of granular sub base of a thickness which has been calculated to provide the necessary structural improvement to the sub grade.

A minimum pavement structure for roads shall be provided, notwithstanding the structural character of the subgrade. Minimum pavement structures are specified in Table B7, and will be considered structurally adequate when the subgrade soil exhibits a minimum soaked CBR of 6.

Table B.7
Minimum Pavement Structures
CBR > 3.0 < 6.0

Road Construction	Granular Sub-Base (mm)	Crushed Granular Base Course (mm)	Hot Mix Asphalt (mm)	
			Surface Course	Lower Course
Arterial	450	75	50	50
Collector	400	75	38	38
Industrial	400	75	38	38
Residential	300	75	50	
Lanes	300	75	50	
Walkways	150	50	50	

The design of structural overlays of existing pavements shall be based on the analysis of the results of Benkelman beam tests and test hole information acquired from the existing road which is to be upgraded.

The Transportation Association of Canada procedure for designing structural design of overlays of existing pavements, as published in "The Pavement Management Guide", shall be used. The maximum permissible Benkelman beam deflections to be used for overlay design are shown in Table B.8.

Table B.8

Road Classification	Maximum Permissible Deflection After Overlay
Arterial	1.00 mm
Collector	1.25 mm
Industrial	See note (1)
Residential	1.50 mm

Notes: (1) As specified by the *Director of Engineering and Public Works*

The structural design of pavements for roads shall be performed by a qualified pavements Engineer. Structural designs of pavements shall be submitted to the *Director of Engineering and Public Works* in an acceptable report format.

3 .10 Highway Cross Sections

The standard street cross section for various classifications of roadways shall be as per Table B.9 and on Standard Drawings No. 100-1 to 100-13.

Table B.9
Highway Cross Sections

Road Classification	Typical Cross Section (Drawing Number)
Arterial	100-1 & -2
Major Collector	100-3
Minor Collector	100-4
Industrial	100-5
Local	100-6
Cul-de Sac	100-7
Expanded Comer	100-8
Local Rural	100-9
Typical Boulevard Construction	100-10
Lanes	100-11

SECTION 4 - MATERIALS

4.01 Subgrade Fill Material

Subgrade fill material shall be free of rock detrimental to proper compaction and free of organic or other deleterious matter. Fill material shall be compacted to a minimum of 95% Standard

Laboratory density (ASTM 0698). Fill material shall be moisture reconditioned to within 3% of its optimum moisture content, as determined by the Standard Test Methods for Moisture-Density Relations of Soils and Soils-Aggregate Mixtures ASTM D698 or ASTM D1557, at the time compaction is undertaken.

4.02 Rock Fill

Rock, by definition, shall mean any material excepting hardpan or glacial till over 0.75 cu.m in volume requiring continuous drilling and blasting. It shall mean masonry or concrete as well as natural boulders fitting this definition.

Rock fill shall be any material containing more than 15% by volume of rock larger than 150 mm in size.

Rock fill shall only be used in approved areas and by approved methods to provide maximum stability to the fill.

GRANULAR AGGREGATES

4.03 Crushed Granular Sub-base Course

Crushed granular sub base shall be well-graded material conforming to the following limits when tested to ASTM C 136 and C 117, using the designated sieve sizes, and to have a smooth curve without sharp breaks when plotted on a semi log grading chart.

USBC Sieve Size Mm	**Percent Passing By Weight**
75	100
25	50 – 85
4.75	30 – 60
0.075	2 - 8

Any gradation supplied by the Contractor within the above limits will be accepted provided it will not rut when subjected to the loading exerted by the rear axle of a fully loaded tandem truck.

4.04 Crushed Granular Base Course

Crushed base course shall be composed of inert, durable aggregate, reasonably uniform in quality and free from soft or disintegrated pieces, wood wastes, roots, organic material or other deleterious materials. The gradation shall be within the following limits when tested to ASTM C 136 and C 117, using the designated sieve sizes, and to have a smooth curve without sharp breaks when plotted on a semi log grading chart.

USBC Sieve Size Mm	**Percent Passing By Weight**
19	100
12.5	60 – 100
4.75	40 – 80
2.36	30 – 60
0.3	10 – 25
0.15	5 – 15

0.075	2 - 8

4.05 Crushed Granular Aggregate Asphaltic Concrete

Crushed granular aggregate for asphaltic concrete shall be composed of hard, durable, crushed gravel free from shale, clay, silt balls loose coatings and other deleterious materials.

The gradation of aggregates, when blended to meet the job mix formula shall he within the limits shown in Table 8.10 when tested to ASTM C 136 and C 117, using the designated sieve sizes, and to have a smooth curve without sharp breaks when plotted on a semi log grading chart.

Table B.10
Gradation of Crushed Gravel Aggregate for Asphaltic Concrete

19 mm	100%
12.5 mm	80 – 100%
9.5 mm	70 – 90%
4.75 mm	50 – 70 %
2.36 mm	35 – 50%
0.600 mm	18 – 30%
0.300 mm	12 – 20%
0.150 mm	7 – 15%
0.075 mm	4 – 8%

A minimum of 60% of the material retained on a 4.75 mm sieve shall have at least two freshly fractured faces as determined by particle count.

Tolerance Limits (% Passing by Weight)*

Max Size To -	4.75 mm	5.0
	2.36mm	4.0
	1.18 mm	4.0
	0.600mm	3.0
	0.300 mm	3.0
	0.150 mm	2.0
	0.075 mm	1.5

*The tolerance limits are in relation to the design aggregate gradation submitted with the Marshall mix design. Aggregate short of material passing the 0.075 mm sieve shall have approved mineral filler added. Mineral filler shall be material passing the 0.075 mm sieve and shall be non plastic when tested in accordance with AS1M 0424. The moisture content of the aggregate after leaving the drier and before mixing shall not be more than 0.5 % by weight.

4.06 Tack Coat

Bituminous tack coat shall be undiluted SS 1H or SS 1 asphalt emulsion, and shall be applied at a rate not greater than 0.5 litres per square metre to a clean paving surface, and provide for

adequate curing time prior to placing asphalt paving mixtures. The temperature of the material shall be maintained between 30°C and 40°C at the time of application.

4.07 Asphaltic Cement

The asphalt cement shall be homogenous, free of water and shall not foam when heated to 177°C.

4.08 Asphaltic Concrete

Asphaltic concrete shall conform to the following.

Characteristic	Requirement
Marshall Blows Per Face	75
Asphalt Cement Viscosity Grade	AC 8
Asphalt Cement Content (by total weight of mix)	4.5% - 7.0%
Stability at 68°C	5.33 KN
Flow	8 - 16
Voids in Mineral Aggregate	14 - 17.5
% Voids Total Mix	3 - 5
Mixing Temperature	143 - 157°C
Asphalt Cement Temperature	135 - 149°C
Aggregate Temperature	141 - 163°C

The *Applicant* shall supply *the Director of Engineering and Public Works* with a current 5 point Marshall mix design, performed in accordance with ASTM D 1559, under the signature of a Professional Materials Engineer. The design asphalt content shall be specified to comply with the requirements of this article.

The asphalt content of hot mix asphalt which is produced in accordance with the approved Marshall design shall be maintained with plus or minus 0.3% of the approved design asphalt content.

4.09 Testing

The *Applicant* shall retain an independent materials testing firm to carry out comprehensive testing to frequencies defined below, for each stage of construction of roads and streets. The materials testing firm must employ a full time, qualified Professional Engineer within the office from which the testing services are provided. He or she shall review all test data and provide to the District, on a daily basis and in summary form at the completion of each stage of the work, test data at the following minimum frequencies.

For Subgrade construction:

a) Moisture density relationship (Standard-Proctor) - ASTM D698; - one test for each soil type incorporated into the subgrade.

b) Moisture and density tests

i) Trench backfill - one test per lift per 50 lineal metres of trench and one test per lift around manholes, valves, catch basins, etc.

ii) Subgrade construction and preparation three tests per 150 lineal metres of road per lift, to include dry density and moisture content.

For sub base and base course construction
(including subgrade enhancement using sub base material)

a) Gradation analysis - one test per 500 m3 or 1100 tonnes of material delivered to the site with a minimum of 1 test per day of placement.

b) Moisture density relationship (Standard Proctor) ASTM D698; one test per class of material for each 5000 m3, or 11000 tonnes delivered to site.

c) Compaction testing three tests per 150 lineal metres of road per lift, to include dry density and moisture content.

For hot mix asphalt pavement production and placement

a) Asphalt content and gradation of extracted aggregate - one test per production period, where a period is defined as that part of the working day either before or after 12:00 noon local time. In a full working day, the times of test shall not be less than two hours apart.

b) Marshall analysis of hot mix asphalt - one per week per mix type; additional tests shall be performed when any of the specified Marshall properties are not met in the initial analysis.

c) Asphalt cement tests one complete analysis per project or one every two work weeks, whichever is the lesser in timing; plus one penetration (ASTM D5) test per work week from product obtained from the Contractor's asphalt cement storage tanks.

d) Density, air voids and pavement thickness tests 3 cores (100 mm dia.) Per 1500 m2 of paved area per lift, with a minimum of 3 cores for each production day. Air void tests shall be performed in accordance with ASTM D3203.

e) Tests on tack coat - one test per project.

SECTION 5.0 – WORKMANSHIP

5.01 Notification of Director of Engineering and Public Works Prior to Undertaking Roadworks

Adequate notice shall be given to the *Director of Engineering and Public Works* by the *Applicant* prior to the commencement of roadworks in accordance with Table B.13. The *Applicant* shall not proceed from one stage as described in Table B.13 to another stage without the approval of the Director of Engineering and Public Works.

Table B.13
Construction Notification Requirements (Working Days)

STAGE	MINIMUM NOTICE REQUIRED
Prior to construction of fills or doing subgrade preparation	1.0 Days
Prior to placement of sub-base materials	1.0 Days
Prior to placement of concrete for curbs and sidewalks	2.0 Days
Prior to placement of base course (19 mm crushed gravel)	1.0 Days
Prior to paving	2.0 Days
Prior to top soil boulevards	1.0 Days

5.02 Clearing

The road right of way shall be cleared of all trees, stumps, logs, roots, and any other objectionable material likely to cause settlement for the full width of the highway, and for such additional width as may be required to contain cut and fill slopes. In addition, buildings, fences, superfluous culverts, or any other structures within the highway shall also be removed. Trees may be left within the highway only where they do not conflict with utility services and where they are not deemed a hazard at the discretion of the Director of Engineering and Public Works.

5.03 Subgrade Preparation

Prior to placing of any granular aggregate on the highway, all existing topsoil or other deleterious matter shall be removed from the full width of the road right of way and the road surface graded to the desired cross section.

Embankments shall be constructed by placing, shaping and compacting approved materials as classified in this Bylaw. All material placed in embankments shall be bladed smooth level layers not exceeding 300 mm uncompacted depth over the entire embankment area and placed in successive uniform layers.

When embankments are to be made on hillsides or where a new fill is to be applied upon an existing embankment, the slopes of the original ground or embankment (except rock embankments) shall be terraced or stepped before filling is commenced.

Each layer shall be compacted with approved equipment to 95% Standard Proctor Density.

Sufficient amounts of watering and compaction equipment required to efficiently and properly compact the material for the rate at which the material is being hauled into the embankment area shall be provided.

The embankment shall be constructed to provide adequate drainage. Should the embankment material become damaged or saturated by rain, flooding, or other effects, repair, scarification, or whatever other measures required to restore the embankment to the moisture and compaction

requirements this Bylaw shall be undertaken. Unsuitable materials encountered in the excavation areas, or at the subgrade elevation, shall be excavated, and wasted.

Over excavations shall be rebuilt to grade with an approved compacted material and compacted to the satisfaction of the Engineer.

At transition sections where the profile grade changes form embankment to cut, the natural slope (excepting solid rock) shall be excavated to a depth of 1 metre and replaced with suitable material for a distance of 15 metres in order to prevent abrupt future differential grade changes. The upper 300 mm of the subgrade shall be compacted to 100% of Standard Proctor density. Subgrade preparation shall extend a minimum of 600 mm out from back of curb or sidewalk on either of the road.

5.04 Proof Rolling

Upon completion of the subgrade preparation, the subgrade shall be proof rolled in the presence of the Director of Engineering and Public Works or his designate with a loaded single axle truck with a rear axle load of 8165 Kg. or approved alternative.

Any areas found to be soft or wet shall be excavated and back filled with select granular sub base, granular material, and compacted to 100% Standard Proctor density.

5.05 Spreading and Compaction of Granular Aggregate

Granular aggregate shall be placed in maximum 150 mm lifts and shall be spread in an approved manner such that the aggregate is neither segregated nor contaminated with foreign material. Segregated materials shall be remixed until uniform. Immediately following spreading, granular aggregate shall be compacted to 100% Standard Proctor density. The finished surfaces shall be within +/- 15 mm of the design grade and cross section.

5.06 General Paving Requirements

Paving shall not be undertaken during snow, heavy rain, temperatures below 5 degrees C or other unsuitable conditions. Asphaltic concrete shall not be placed on a frozen, muddy or rutted base.

5.07 Placing and Compacting Asphaltic Concrete

Surfaces onto which bituminous concrete pavement is placed shall be dry, above 4 degrees C and cleaned of all loose and foreign materials. Mixtures shall not normally be laid when the atmospheric temperature is less than 5 degrees C and falling. An approved self propelled mechanical paver shall be used to spread the mixture to the specified thickness. Compaction shall commence immediately after the bearing capacity of the course is adequate to support the compaction equipment without undesirable displacement or cracking. Compaction methods shall be carried out as specified in the Asphalt Paving Manual published by the Asphalt Institute.

5.08 Density of Completed Asphaltic Concrete Pavement

The minimum allowable density of the completed pavement shall be not less than 97% of the laboratory compacted Marshall density.

Flaws in the pavement surface shall be corrected by removal of the complete area and the full lift involved. Pavement which is unsatisfactory in the opinion of the Director of Engineering and Public

Works by reason of faulty materials or methods of placement shall be repaired, removed, replaced or otherwise corrected.

5.09 Tie-Ins to Existing Pavement

Tie-ins to existing pavement shall be made by cutting back the existing pavement to sound material as necessary to produce a neat, vertical face with a straight edge. Prior to placing asphaltic concrete, exposed faces and other abutting structures shall be painted with liquid asphalt and heated to 66 degrees C.

5 .10 Restoration of Improvements

Driveways, retaining wall, vegetation and other private or municipal improvements on private or municipal property or highways affected by road construction shall be restored at minimum to the condition existing prior to construction. Boulevards and slopes on municipal right of ways are to be dry land seeded, hydro seeded or sodded. All restoration to be done to the satisfaction of the Director of Engineering and Public Works.

5.11 Testing

The District shall be provided with copies of all compaction test results pertaining to subgrade, granular base, and pavement structure.

5.12 As Constructed Drawings

Prior to final acceptance, the *Applicant* shall deposit with the District one set of original as constructed mylar drawings showing all the information requested by this schedule and conforming to the criteria set out in Schedule D.

SCHEDULE "C.4" - CURBS, GUTTERS, AND SIDEWALKS

SECTION 1 - GENERAL REQUIREMENTS

1.01 Introduction

Where the provisions of Table C.2.2 require the provision of curbs, gutters, and *sidewalks,* the *Applicant* must design and construct such services in accordance with the standards and specifications set out in this Schedule, *MMCD* Section 02523 and the provisions of this bylaw. The *Applicant* must finish *boulevards* in accordance with *MMCD* Section 02921 and the provisions of this bylaw.

1.02 Engineering Drawings

Where an *Applicant* is required to construct curbs and gutters and *sidewalks,* design drawings which show the detailed design of the required *works* must be submitted to the *District of Summerland Director of Engineering and Public Works.* The drawings must show horizontal and vertical alignment and other such detail as may be required.

Elevations must be shown on the design drawings for the beginning and end of the curb return, as well as at any changes in grades in between. Engineering drawings must show all geometric details of curb returns.

1.03 Curb, Gutter and Sidewalk Requirements

The type and width of the curb, gutter and sidewalk shall be provided as specified in Table C.4.1.

TABLE C.4.1
CURB, GUTTER AND SIDEWALK REQUIREMENTS

Highway Classification	Curb Type Required	Minimum Sidewalk Widths
Residential *Zones*		
Arterial	Type 1	1.85 m
Collector	Type 1	1.5 m
Local	Type2	1.5 m
Commercial Zones		
All *Highways*	Type 1	1.5 m

SECTION 2 - DESIGN CRITERIA

2.01 Curb Return

The minimum curb return radius must be in accordance with Schedule C.3 Section 3.06 of this bylaw.

2.02 Curb and Gutter

Curb and Gutter must be provided wherever *drainage systems* are required to be constructed and installed. The curb and gutter must be constructed in accordance with Standard Drawing 201.

2.03 Sidewalks

Sidewalks, where required, must be constructed and installed in accordance with Standard Drawings 202 and 203.

2.04 Boulevards

Upon completion of *highway,* curb, gutter, and sidewalk construction, *boulevards* must be shaped, rough graded and dry land seeded from the back of curb, or sidewalk to the property line. *Boulevards* must be constructed in accordance with Standard Drawing 103.

2.05 Driveway Access

Maximum slope on a driveway access for all *boulevards* must be at 5% and be in accordance with the specifications of Bylaw 92-047 the Driveway Access Bylaw and its amendments from time to time.

2.06 Wheelchair Ramps

Wheelchair ramps must be provided at all intersections on *highways* provided with *sidewalks* and as required by the Director of Engineering and Public Works on a site specific basis. Wheelchair ramps must be constructed in accordance with Standard Drawings 204 and 205.

2.07 Barrier Curb Crossing

Barrier Curb Crossings must be provided at all access locations and must be constructed in accordance with Standard Drawing 206.

SCHEDULE "C.5"·- DESIGN AND CONSTRUCTION OF WATER SYSTEMS

SECTION 1 - GENERAL REQUIREMENTS

1.01 Introduction

Where the provisions of Table C.2.2 require the construction of a *water distribution system,* the *Applicant* must provide a *water distribution system* including storage facilities, water mains, valves, hydrants, service connections, pump stations and reservoirs in accordance with the standards and specifications set out in this Schedule, MCDD Section 02666, and the provisions of this bylaw.

Where the provisions of Schedule C.2 permit the *subdivision* or *development* to be serviced from a *water source,* the *Applicant* must provide a *water source* in accordance with the standards and specifications set out in this Schedule and the provisions of this by law. If the *Applicant* is connecting to a *community water system,* then *MMCD* Section 02666 shall also apply.

1.02 Engineering Drawings

Where the *Applicant* is required to construct a *water distribution system,* design drawings and detailed design calculations of the required *works* must be submitted to the *District of Summerland Director of Engineering and Public Works.* The drawings must show alignment, size and depths of pipes, pipe bedding requirements, existing ground line, proposed final ground line over the pipe, location and detail of all fittings, valves, and hydrants, location of all service connections, details of any pump stations and reservoirs, all easements and right of ways and all such other details as may be required.

SECTION 2 - DESIGN CRITERIA

2.01 Capacity of System and Sizing of Water Mains

Water distribution systems must be designed to deliver water in adequate quantities and at adequate pressures for both domestic use under peak consumption conditions and fire flows. Mains must be sized to carry:

(a) the peak hourly flow rate, **OR**;

(b) the maximum daily flow rate plus the fire flow rate,

whichever is the greater.

Mains must be sized using the Hazen Williams formula with the coefficient "C" equal to 120. The maximum flow velocity for peak hourly demand rate must not exceed 2.0 m/s. For maximum daily flow rate plus the fire flow rate, the maximum flow velocity must not exceed 4.0 m/s.

2.02 Domestic Demand Criteria

For residential areas, the daily domestic demand criteria for purposes of designing *water distribution systems* must be as follows:

Average Daily Demand	= 1000 litres/capita/day
Maximum Daily Demand	= 3000 litres/capita/day
Peak Hourly Demand	= 5000 litres/capita/day

For other than residential areas, the demand criteria must be selected to suit the particular circumstances as approved by the *District of Summerland Director of Engineering and Public Works.* Densities for specific zones are indicated in Schedule C.6, Section 2.01(c).

2.03 Fire Demand Criteria

Water distribution systems must be designed to ensure that fire flows as required by the most recent publication by the Fire Underwriters Survey are available for required durations. Notwithstanding the provisions of the Fire Underwriter's survey, fire flows must not be less than 60 l/s. Detailed design calculations supporting the amount and duration of the design fire flows must be submitted to the *District of Summerland Director of Engineering and Public Works* prior to final design.

2.04 Design Pressures

The *water distribution system* must be designed to provide domestic water at the probable building main floor elevation including an allowance made for pressure loss in the service line to the house wall, on each *parcel* as follows:

Maximum static pressure	1000 Kpa (145 psi)
Minimum static pressure	275 Kpa (40 psi)
Minimum residual pressure at peak hour	250 Kpa (35 psi)
Minimum residual pressure at fire flow conditions	140 Kpa (20 psi)

2.05 Hydraulic Network Considerations

Where there is an existing hydraulic network model in place, the *District of Summerland* will provide information for design calculations.

Depending on the complexity and extent of the proposed *water distribution system,* the *District of Summerland* may require a hydraulic analysis showing minimum design flows and pressures.

The maximum length of any permanent, non-interconnected watermain shall not exceed 200m in length. All mains exceeding 200m in length, unless it is a temporary situation, must be looped.

Where the water system network is deficient, installation of supplementary mains may be required and may necessitate the provision of rights of way in favour of the *District of Summerland* or the agency having jurisdiction.

The minimum pipe size for all water mains shall be 150 mm diameter. The *District of Summerland Director of Engineering and Public Works* may require water mains larger than 150 mm diameter if on a distribution or transmission route. The minimum watermain size for commercial or industrial areas shall be 200 mm.

2.06 Location and Grade of Water Mains

Except as provided for in Schedule C.1, Section 1.03, watermains must be located in the *road* right of way as shown on Standard Drawing 101.

Except for sanitary and storm sewer mains, there must be a minimum horizontal clearance of 1 meter between a water main and other existing or proposed underground services. A minimum 3 meter horizontal distance between a watermain and a sanitary or storm sewer main must be maintained. In special cases such as installations in rock or hardpan, and subject to any provincial regulations, the horizontal clearance may be reduced, with the approval of the *Director of Engineering and Public Works* and the Ministry of Health, provided the invert of the water main is a minimum of 450 mm above the crown of the sanitary sewer. On side hill streets the water main must be located on the cut side of the centre line of the street.

Water mains must be designed to follow a straight alignment between intersections and at grades parallel to the *road* centerline unless otherwise approved by the *District of Summerland Director of Engineering and Public Works.*

Curved alignments are not acceptable for the installation of water mains and in no case shall curvature be established in PVC pipelines using joint deflection. The design drawings must indicate the location, elevation and degree of deflection at all fitting installations and slope of pipe between deflection points.

Water mains must be designed with a rising grade wherever possible to minimize high points in the main. Where the slope of the watermain exceeds 20%, anchorage is recommended. Slopes 30% or greater require anchorage must be incorporated in the design.

No gas main, electric or telephone duct or other utility line shall be installed in the same trench with water mains.

Where it is necessary for the water main to cross other underground services, the crossing must be made at an angle greater than 20 degrees and the vertical clearance between services at the crossing point must be not less than 150 mm except for sanitary sewers where clearance must be in accordance with the Health Act.

The design drawings must indicate whether the water main passes over or under other underground services which it is crossing.

Bylaw 2000-068 amended Section 2.07 Services. (February 26, 2001):

2.07 Services

The diameter of water services must be determined by the *Owner's Engineer* subject to approval of the *District of Summerland Director of Engineering and Public Works,* but in no case shall the diameter be less than 19 mm. The diameter of services for District of Summerland Parks shall be as directed by the *Director of Engineering and Public Works,* but in no case shall the diameter be less than 25 mm. Curb stop operating rods shall be stainless steel in wet soil conditions.

Separate water services installed in accordance with Standard Drawing 301 must be provided to each *parcel* and installed on the same side of the *parcel* as the sanitary sewer service. Water services to District of Summerland Parks must be constructed and installed in accordance with Standard Drawing 309.

Tappings shall be made at an angle of 30 ± 10 degrees above the horizontal centerline plane of the pipe.

The curb stop at the end of each service pipe must be located 2.0 meters from the property corner pin. Where such location will conflict with other services the alternate alignments may be submitted for approval.

All service connections tapped directly into mains must be made using double strap service saddles Multiple corporation stops must be staggered.

2.08 Blow Offs

Blow offs are required at the end of all water mains and must be constructed and installed in accordance with Standard Drawing 302.

2.09 Air Valves

Double acting air and vacuum relief valves must be installed at all summits in the mains. Air valves must be designed to protect the pipe from transient conditions. In no case shall the size be less than 25 mm. Air valves must be constructed and installed in accordance with Standard Drawing 303.

Bylaw 2000-068 amended Section 2.10 Fire Hydrants (February 26, 2001):
Bylaw 2000-326 amended Section 2.10 Fire Hydrants (April 28, 2008):

2.10 Fire Hydrants

Fire hydrants shall be constructed and installed in accordance with this section.
Fire hydrant spacing:

- in single-family residential areas, fire hydrant spacing shall not exceed 180 metres or as calculated in accordance with the Fire Underwriter's Survey, whichever is more stringent;
- in commercial, industrial, institutional, and multi-family residential areas, fire hydrant spacing shall not exceed 90 metres or as calculated in accordance with the Fire Underwriter's Survey, whichever is more stringent;
- spacing shall be measured along the street curb-line or proposed curb-line offset from centre line if there is no curb;
- on streets where median boulevards are proposed, such as Rosedale Avenue and Prairie Valley Road, the hydrant spacing requirements for each side of the road shall be considered independently and the hydrant location shall be staggered with the opposite side of the road to maximize Fire Department effectiveness.

A hydrant is required at the end of all cul-de-sacs that exceed 90 metres in length.

Where hydrants are located other than at intersections, the hydrant must be placed at the projection of the property line dividing two lots.

A hydrant must not be located within 3.0 metres of a utility pole, pad mounted transformer, light standard, or any other obstruction.

In selecting the location of the hydrant, the probable route of the fire fighting equipment must be considered.

Fire hydrant spacing and location must be submitted to the Fire Department for review and comment.

The Director may:
1. adjust hydrant locations as deemed necessary;
2. adjust the spacing distances slightly if it is deemed necessary to avoid obstructions;
3. adjust the spacing distances slightly if the adjustment does not negatively impact fire fighting capabilities or effectiveness;
4. require additional hydrants if the additional hydrants are deemed necessary to improve fire fighting capabilities or effectiveness to the proposed subdivision or development.

Hydrants must be constructed and installed in accordance with Standard Drawing 304."

2.11 Valving

In general, valves must be located as follows:

(a) In intersections, in a cluster at the pipe intersection or at the projected property lines, to avoid conflicts with curbs and *sidewalks:*

(i) 4 valves at "X" intersection

(ii) 3 valves at "T" intersection

so that specific sections of mains may be isolated and maintained.

(b) Not more than 200 m apart for single family residential. All other *zones* require special designs.

(c) Not more than one hydrant isolated.

Valves must be the same diameter as the main. Gate valves must be used up to and including 400 mm diameter. Gear operated butterfly valves will be allowed in mains larger than 400 mm. Valves must be installed in accordance with Standard Drawings 305 and 307.

2.12 Reservoirs

Reservoirs must be designed to suit the particular circumstances including the provision for maintenance vehicle access. Reservoir capacity must be calculated by the following equation:

Total Storage Requirement = A + B + C

Where: A = Fire Storage
B = Equalization Storage (25% of maximum day demand)
C = Emergency Storage (25% of A+ B)

Reservoir design must incorporate the following features:

- structures to be below ground and covered unless specifically approved otherwise;

- material must be reinforced concrete designed in accordance with the American Concrete Institute's manual on Environmental Director of Engineering and Public Works Concrete Structures - ACI 350 R-89;
- 2 cells, each containing one-half of total required volume and capable of being isolated and drained and filled independently;
- two lockable access openings in roof for cleaning and maintenance. Minimum dimension to be 1 meter x 1 meter each. Overflow pipe must be visible from the access hatch;
- ventilation pipes or openings;
- floor to be sloped to the sump;
- sub-drain under floor to collect and drain any leakage, connected to overflow pipe;
- interior wall ladder from roof access to floor. Any exterior ladders must be vandal proof and prohibit unauthorized access;
- inlet and outlet pipes to be designed to disperse water throughout the reservoir;
- overflow drain to be provided and sized to transmit the maximum pump discharge. The overflow drain must be connected to an acceptable point of discharge;
- telemetry alarm system in accordance with District of Summerland Standards;
- equipment and operations manuals.

Reservoir valve chamber design must incorporate:

- sump in valve chamber floor, connected to overflow pipe through a check valve;
- 50 mm valved outlet off supply line within valve chamber for *water supply* for cleaning reservoir;
- valves must be outside stem and yolk.

2.13 Pump Stations

Pump stations must be designed to suit the particular circumstances. In general, pump stations must be designed to meet maximum daily demands with the largest pump out of service with balanced storage on line. If equalization storage is not on line, pump station capacity must meet peak hour demand with the largest pump out of service.
Pump station design must assess, and where appropriate, incorporate, the following features:

- ability to handle the ultimate flow requirements;
- type of station and impact on neighbours;
- construction dewatering requirements;
- access for construction;
- access for maintenance;
- aesthetics, noise, and landscaping requirements;
- security against vandalism and theft;
- proximity and adequacy of power supply;
- minimizing energy requirements;
- equipment and maintenance requirements (access, lifting equipment, etc.);
- standby power and its compatibility;
- Soils. Sub-surface investigations must be undertaken prior to site approval;
- Convenience of operation and maintenance.;
- Safety for operators and public;
- Capital, operation, and maintenance costs.

Pump Station design must include:

- full duplex. pump sequencing;
- low discharge pressure override start plus alarm;
- low pressure or no flow override start plus alarm;
- alarms to be both audible and visible;
- control valves to minimize starting and stopping surges;
- duplicate control cables, without splices, between pump stations and reservoirs;
- energy efficient motors;
- power factor correction to meet Power Smart standards, established by the electrical supply utility;
- hour meters, recording flow meter and recording suction and discharge pressure gauges at each pump;
- flow metering equipment;
- automatic heating, ventilating and dehumidifying systems;
- in station lighting;
- telemetry alarm system;
- drainage to be provided for all areas of pump station;
- chlorine injection equipment may be required;
- chlorine alert detection;
- chlorine weigh scale;
- electrical phase loss protection;
- electrical drawing schematics for control panel;
- reduced pressure backflow preventer.

For each design submission to the *District of Summerland,* an extra set of drawings and manuals pertaining to the design of the pump station, key plan, and location plan must be submitted to the *District of Summerland Director of Engineering and Public Works.*

The *Applicant* must provide three sealed sets of mechanical shop drawings and three sealed sets of electrical line diagrams for review by the *District of Summerland Director of Engineering and Public Works.* Two sealed copies of design calculations shall be provided for documentation. Before issuance of a *Certificate of Total Performance,* the *Applicant* must provide two copies of an Operation and Maintenance Manual to the *District of Summerland.* The manual must contain:

- as constructed shop drawings;
- equipment layout drawings;
- electrical, control, and alarm wiring diagrams;
- operating instructions for all equipment;
- maintenance instructions for all equipment, including frequency of maintenance tasks;
- equipment data sheets;
- spare circuit cards for critical components;
- certified head/capacity curves for pumps;
- equipment part lists;
- emergency operating procedures.

The maintenance manuals must be hardbacked bound documents with the name of the facility embossed on the cover. Manuals must contain a table of contents with each section identified by a plasticized, labelled divider.

2.14 Facility Access

Paved vehicular access must be provided to ail reservoirs and pump stations. The minimum standard shall be as for an emergency access *road* as shown in Standard Drawing 102, with curb, gutter, and drainage provisions as may be required.

SECTION 3 - Water Source

3.01 Requirements for Wells

All wells must be drilled and cased.

All wells must be capable of delivering water at a rate of not less than 20 liters per minute per well over a one hour period to a minimum of 2,300 liters per day per dwelling unit.

Wells must be restricted to supplying water to only one *parcel.* Where the well is not located on the *parcel* for which the well is the *water source,* the well, water mains, and all other appurtenances must be protected by an easement.

All quantity and quality testing must be verified by an *Engineer* specializing in groundwater hydrology.

A water sample taken from the well must be tested to determine conformity to potable drinking water standards. The test results must be submitted to the *District of Summerland Director of Engineering and Public Works* and the Medical Health Officer. The test results are to be registered in Land Title Office against the title of the *parcel* as a restrictive covenant as prescribed in Schedule A.5 of this bylaw. Any changes to the wording of the restrictive covenant are subject to the written approval of the *District of Summerland Director of Engineering and Public Works.*

A map prepared by a *surveyor* must be provided indicating the location of all wells.

3.02 Requirements for a Surface Water Source

A domestic water license, or written assurance that a domestic water license will be issued, must be obtained from the Provincial Water Management Branch of the Ministry of Environment. A copy of the water license must be submitted to the *District of Summerland Director of Engineering and Public Works*.

The quantity of water authorized to be used under the water license shall be as determined by the Water Bailiff, but shall not be less than 20 liters per minute over a one hour period *to* a minimum of 2,300 liters per day per dwelling unit.

A water sample taken from the surface *water source* must be tested to determine conformity to potable drinking water standards. The test results must be submitted to the *District of Summerland Director of Engineering and Public Works* and the *Medical Health Officer.* The test results are to be registered in Land Title Office against the title of the lot as a restrictive covenant as prescribed in Schedule A.5 of this bylaw. Any changes to the wording of the restrictive covenant are subject to the written approval of the *District of Summerland Director of Engineering and Public Works.*

SCHEDULE "C.6" - SANITARY SEWER

SECTION 1 - GENERAL.REQUIREMENTS

1.01 Introduction

Where the provisions of Schedule C.2.2 require the construction of a *community sewer system,* the *Applicant* must provide sanitary sewer facilities including gravity sewer mains, pump stations, force mains, manholes, service connections, and all related appurtenances in accordance with the standards and specification set out in this Schedule. *MMCD* 02731, 02732 and the provisions of this bylaw.

1.02 Engineering Drawings

Where the *Applicant* is required to construct a *community sewer system,* design drawings and detailed design calculations of the required *works* must be submitted *to* the *District of Summerland Director of Engineering and Public Works.* The drawings must show alignment and size of pipes, proposed grades, distances between manholes, manhole invert elevations, existing ground line and proposed final ground line over pipe, location of all service connections to the property line, depth of service at property line, *parcels* requiring pumping, all easements and statutory rights of way, lift stations, force mains, pipe bedding requirements, and all such other details as may be required.

SECTION 2 - DESIGN CRITERIA

2.01 Design Flows

Sanitary sewer facilities constructed in or for a *subdivision* or *development* must be designed to provide sufficient capacity to carry the required quantity of sewage flow from the full contributing area as defined by the *Owner's Engineer* and as approved by the *District of Summerland Director of Engineering and Public Works.* All *parcels* must be serviced by gravity flow unless otherwise approved by the *District of Summerland Director of Engineering and Public Works.*

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

(a) Domestic Flow Rate = 350 litres/capita/day, plus;

(b) Infiltration rates for:

New pipes not in water table	= 5,000 l/ha/d
New pipes in water table	= 8,000 l/ha/d
Old pipes	= 10,000 l/ha/d

Bylaw 2000-453 deleted and replaced Section 2.01(c) <u>Densities</u> (September 12, 2011):

(c) Densities:

‘Density Zone (s) if applicable	People/Ha	People/Unit
Residential Low/*RSD1, RSD1(i),RSD2,RSD3,RDH,*	Up to 66	2.35
Residential Medium/*RMD,RSH,RMH*	Up to 140	2.35
Residential High/*RHD*	140 and up	2.35
Low Load Commercial/*CT1,CT2,CH,CM*	40	-
High Load Commercial/*CB1,CB2*	200	-
Institutional/*I*	-	10
Industrial/*M1,M2,M3,M4*	10	-‘

(d) A peaking factor using 70% of the Harmon Equation must be applied to the average flow.

$$\text{Peak Factor} = 1 + \frac{14}{4 + \sqrt{P}}$$

P = Population in thousands

(e) Peak design flows must be determined by applying the peaking factor to the average daily flow plus infiltration.

(f) Pipe sizes must be selected so that sewers flow 2/3 to 3/4 full at peak hour design flow.

2.02 <u>Pipe Flow Formulas</u>

Gravity Sewers: Manning's formula must be used.

The roughness coefficients must be:

Concrete	=	0.013
PVC	=	0.011

Force Main Sewers: Hazen-Williams formula must be used.
Friction coefficient must be C = 120

2.03 <u>Velocities</u>

The minimum velocity must be 0.6 m/sec. There is no maximum velocity, however, consideration must be given to scour problems where flow exceeds 3.0 m/sec.

2.04 <u>Minimum Grade</u>

The grade of any sewer is governed by the minimum velocity required (0.6 m/sec). However, the last section of a main that will not be extended in the future, must have a minimum grade of 1.0% where 150 mm diameter pipe is proposed. Notwithstanding the above, the minimum grade for all pipes must be 1.0% unless restricted by topography or other factors approved by the *District of Summerland Superintend of Works and Utilities.* There must be no change in grade between manholes.

Where the slope of the sewer main exceeds 20%, anchorage is recommended. Where slope is 30% or greater, anchorage must be incorporated in the design. Anchorage must be constructed in accordance with Standard Drawing 003.

2.05 Alignment of Sewer Mains

Sewer mains must be designed to follow a straight alignment between manholes unless approved by the *District of Summerland Director of Engineering and Public Works.* Horizontal curves are not permitted.

Routing of the sewers must be approved by the *District of Summerland Director of Engineering and Public Works.*

2.06 Service Connections

Separate service connections installed in accordance with Standard Drawing 407 must be provided to each *parcel* and must be installed, wherever possible, in a common trench with the water service. All services must enter the main at a point just above the springline.

Only single connections will be permitted.

Connections to new mains must be made using standard wye fittings; connections to existing mains shall be made using wye saddles or other pre-approved methods.

The minimum grade from the main to the property line shall be 2.0% for a 100 mm service and 1.0% for a 150 mm service.

The diameter of sewer services must be as determined by the Owner's *Engineer* but in no case shall the diameter be less than 100 mm.

The minimum depth of a service at the property line must be 1.2 m within a *highway* right of way and 1.0 m within a statutory right of way.

Service connections may be permitted into manholes provided that:

(i) the connection is not in an adverse direction to the flow in the sewer main;

(ii) the connection enters the manhole so the service crown matches the sewer main crown.

Inspection chambers are required for all connections and shall be installed in accordance with Standard Drawing 408.

Manholes are required to be installed at the intersection of the main and the service for non residential services 150 mm or larger.

Service connections must be installed at the downstream corner of the *parcel* at an offset of 3.0 m from the property pin.

2.07 Minimum Pipe Diameter

The minimum permitted size of pipe is 200 mm diameter.

Where no further extension is anticipated, the minimum pipe diameter may be reduced to:

For residential lands	- 150 mm diameter with minimum 1.0% grade
For commercial and industrial	- 200 mm diameter with minimum 0.60% grade

2.08 Depth of Cover

The depth of cover of the sewer main (top of pipe to surface of *road* or ground) must be sufficient to provide "gravity flow" service connections to both sides of the *highway* and must allow for future extension(s) to properly service all of the upstream tributary lands. The minimum depth of cover shall be 1.2 m.

2.09 Manholes

Manholes must be installed at all:

- changes in grade
- changes in direction
- changes in pipe sizes
- intersecting sewers
- terminal sections

Manholes must be placed at all locations where future extensions are anticipated and must be spaced no further than 150 m apart.

For sanitary manholes not located within the *road* prism, the rim elevation must be designed to be above:

- the adjacent storm manhole rim elevation.
- the surrounding ground so that infiltration from ponding will not occur.
- the 100 year return runoff event.

Manholes must be constructed and installed in accordance with Standard Drawings 401, 402, and 403.

2.10 Hydraulic Losses Across Manholes

The following criteria must be used:

(a) The crown of the downstream pipe must not be higher than that of the upstream pipe.

(b) Minimum drop in invert levels across manholes:

(i)	Straight run	- no extra drop required other than slope of pipe.
(ii)	Deflections up to 45 degrees	- 30 mm drop
(iii)	Deflections 45 degrees to 90 degrees	- 60 mm drop

(c) Drop manholes and inside ramps must be installed in accordance with Standard Drawing 404. Where provisions are required for a future drop manhole connection, the manhole

must be constructed and installed in accordance with Standard Drawing 405. Inside ramps must not exceed 450mm.

(d) Outside ramps are not permitted.

2.11 Temporary Clean-Outs

Temporary clean-outs may be provided at terminal sections of a main where:

(a) future extension of the main is anticipated.
(b) the length of sewer to the downstream manhole does not exceed 45.0 m.
(c) the depth of the pipe does not exceed 2.0 meters of cover at the terminal point.
(d) design of the anticipated extension is completed to the next manhole to ensure the *works* will not require realignment when extended.

2.12 Sanitary Lift Stations

The use of sanitary lift stations is discouraged. Any proposed use of lift stations must receive prior approval from the *Director of Engineering and Public Works.* Sanitary sewer lift stations should be located within a right of way outside the required *road* dedication. Siting of lift station must be approved by the *District of Summerland Director of Engineering and Public Works.*

The following criteria covers both dry well and submersible sewage lift stations. Larger capacity sewage lift stations or lift stations with special design or siting requirements may require additional assessment and review of criteria.

Prior to commencing detailed design of a lift station, the *Owner's Engineer* must submit to the *Director of Engineering and Public Works* for approval a pre-design report that addresses all pertinent design considerations.

The *Applicant* must provide three sealed sets of mechanical drawings and three sealed sets of electrical line diagrams for review by the *Director of Engineering and Public Works.* Two sealed copies of design calculations shall be provided for documentation. Before acceptance by the *District of Summerland* of the completed station, the *Applicant* must provide two copies of an Operation and Maintenance Manual to the *District of Summerland.* The manual must contain:

- as constructed shop drawings;
- equipment layout drawings;
- electrical, control, and alarm wiring diagrams;
- operating instructions for all equipment;
- maintenance instructions for all equipment, including frequency of maintenance tasks;
- equipment data sheets;
- spare circuit cards for critical components;
- certified head/capacity curves for pumps;
- equipment part lists;
- emergency operating procedures.

The maintenance manuals must be hardbacked bound documents with the name of the facility embossed on the cover. Manuals must contain a table of contents with each section identified by a plasticized, labelled divider.

The location and layout of a lift station must include but not be limited to an assessment of the following basic design considerations:

- The lift station must be designed to handle the ultimate flows of the designated catchment.
- Type of station and impact on neighbours.
- Construction dewatering requirements.
- Access for construction.
- Access for maintenance.
- Aesthetics, noise, odour control and landscaping requirements.
- Security against vandalism and theft.
- Station uplift design must be based on minimum load level and maximum flood elevations.
- Proximity of receiving sewers, water mains and adequacy of power supply.
- Minimizing energy requirements.
- Standby power and its compatibility.
- Soils. Sub-surface investigations must be undertaken prior to site approval.
- Convenience of operation and maintenance.
- Safety for operators and public.
- Capital costs and operation and maintenance costs.
- Corrosion control.

Pumps must be:

- Gorman-Rupp or pre- approved equivalent
- 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 H.P. are to be 600 volt 3 phase type)
- able to operate alternately and independently of each other
- able to meet maximum flow condition with one pump in failure mode

Motor cables, power cables, etc., must be continuous from within the pump station to within the kiosk. In no instance shall a cable be spliced.

Levels to be controlled by level transmitter with emergency high and low level balls.

All auxiliary equipment and control panels must be mounted in a suitable kiosk adjacent to the station. The kiosk must be located a minimum of 3.0 m from the station lid.

The control kiosk must be designed to contain all control and telemetry equipment on the front panel and all power equipment on the rear panel.

Check valves must be ball lift type.

All stations must be equipped with an explosion-proof exhaust 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 3 minutes of activation.

All stations must be equipped with a portable pump "bypass" connection minimum 6" in diameter. The bypass connection shall be accessible above the hinged access panel outside the wet well side of the station enclosure and shall terminate with a "Kamlock" quick connect fitting.

The entrances to all stations must be water proof and be provided with a suitable lock. The access must be a minimum 900 mm x 900 mm in size. The access hatch must have:

- an aluminium 6.4 mm tread plate
- a perimeter drain
- a perimeter sealing gasket
- a slam lock with an aluminium removable sealing plug and opening tool
- a flush lift handle
- a gas spring assist cylinder
- a 90 degree hold open arm
- a flush fitting padlock tang

The hatch must be reinforced for 1465 kgs/m^2. All fasteners to be made of 316 stainless steel.

The entrance must be at ground level where feasible but, in no case, more than 300 mm above the ground. An explosion-proof light with a protective cover should be located in a suitable location in the station and the light should be activated by the entrance cover.

Access into the stations must be by an aluminium ladder. The location of the ladder must not interfere with the removal and installation of the pumps, etc. The ladder must be designed to extend and lock at least 600 mm above the station entrance. A platform is to be provided above the high water level float to permit wet well access. The platform is to be a fibreglass grating.

All wiring must be explosion-proof, Class 1, Division 2, and electrical design and installation is subject to the acceptance of the Provincial Safety Inspector.

All lift stations must be equipped with telemetry connected to the *District of Summerland* telemetry system.

All equipment must be CSA approved and have at least a one year warranty for parts and labour. The supplier is to provide to the *District of Summerland,* three sets of Operating and Maintenance Manuals. All pumps must be factory tested prior to installation.

A gate valve is required on the influent line and a plug valve on each pump discharge. The valves must be outside the station and be complete with square operating nut and nelson box.

A 50 mm diameter water connection for cleaning purposes must be provided. A backflow preventer is required for connections in the station.

The roof and cover of the lift station should be designed to withstand a loading of H-20 *(Highways* Standard).

The control panel must incorporate a Crouse Hinds receptacle and a transfer switch for a standby power source. Underground electrical wiring is required. For small lift stations, emergency storage may also be required; emergency storage is to be based on 8 hours of average day flows.

The area around the station and all associated equipment or building must be asphalted. The size of the area to be determined by the requirements for maintenance.

A receptacle compatible with the *District of Summerland's* removable lifting arm must be incorporated into the design of the pump station to facilitate the removal and installation of the pump(s).

The interior surfaces of all steel and fibreglass stations must receive at least two coats of two component white epoxy enamel.
The wet well bottom must be benched to direct all solids into the pump suction. The influent line must be located tangent to the wet well to encourage scouring of the wet well.

The pump control panel must incorporate the following indicator lamps:

- pump one on (green)
- pump two on (green)
- control power on
- phase loss
- high level alarm
- level transmitter fail
- pump 1 fail
- pump 2 fail

The panel must have a lamp test button.

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

An ammeter must be provided for each pump, switchable.

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

Minimum storage between the high level alarm and the start of overflow under the more critical of:

- Minimum 2 hour in wet well at average wet weather flow.
- Minimum 1 hour in wet well and influent pipes at peak wet weather flow.

Station to have a magnetic flow meter.

Station to allow removal of pumps using hoist truck with 1.8 m boom.

Where vandalism or safety is a concern, security lighting and perimeter fencing is to be provided. The fence must be made of black chain link.

Landscaping acceptable to the *District of Summerland,* is to be provided including irrigation.

Minimum barrel size must be 2440 mm in diameter.

Metal stations must be protected by impressed current or sacrificial anodes as determined by corrosion potential analysis.

2.13 Force Main

In conjunction with sanitary pumping facilities, the following criteria must be noted in the design of force main systems:

- At the lowest pump delivery rate anticipated to occur at least once per day, a cleansing velocity of 1.0 m/sec should be maintained. Maximum velocity should not exceed 3.5 m/s.
- An automatic air relief valve must be placed at high points in the force main to prevent air locking.
- The minimum size for force mains shall be 100 mm diameter.
- The material selected for force mains must meet the *District of Summerland* standards and must adapt to *local* conditions, such as character of industrial wastes, soil characteristics, exceptionally heavy external loadings, abrasion and similar problems.
- All force mains must be designed to prevent damage from transient conditions.

2.14 Noise Control Criteria

Noise levels for facilities must not exceed 65 dB at property line or 20 m away whichever is closer.

2.15 Corrosion and Odour Criteria

Corrosion and Odour controls must be considered in all design.

Analysis for potential odour and sulfides is required.

Odour Criteria:

- at 10 m from any gravity main, forcemain, manhole and lift station or other sewer facility (summer conditions, winds between 2-10 km/h), 1.0 odour units.

where sewer facilities are close to houses, parks or *walkways,* 0.0 odour units.

Dissolved sulfide maximum limit at any point in the system is to be 0.5 mg/l. However, for new tie-ins to the Summerland system, the maximum limit is 0.3 mg/l.

Wet well size, forcemain diameter and length, as well as other pertinent factors must be considered in optimizing system operations to avoid odours.

SCHEDULE "C.7" - DESIGN AND CONSTRUCTION OF ONSITE SEWAGE DISPOSAL SYSTEMS

SECTION 1 - GENERAL REQUIREMENTS

1.01 Introduction

Where the provisions of Table C.2.2 permit *onsite sewage disposal,* the *Applicant* must provide a sewage disposal area in accordance with the standards and specifications of the Health Act, this Schedule, and the provisions of this by law.

1.02 Engineering Drawings

Where the *Applicant* is required to construct an *onsite sewage disposal* system, as-constructed drawings must be submitted to the *District of Summerland Director of Engineering and Public Works* and to the *South Okanagan Health Unit.* The drawings must show the location of the septic tank and the disposal field established from identifiable datums.

1.03 Suitability of Site for Onsite Disposal

The sewage disposal area, which includes the proposed absorption field and reserve field areas, must conform to the following:

1) A minimum of 1.2 meters of natural *porous soil* must cover the entire disposal area and must be located above the highest anticipated groundwater table, above bedrock, and above any *impervious layer of soil.* **AND;**

2) The topography over the entire disposal area must not exceed 30 percent slope, **AND;**

3) The calculation of the disposal area must be as required by the Ministry of Health and/or the Ministry of Environment for the design, installation, operation and protection of a conventional septic tank system or a conventional package treatment plant system as defined in Schedules 2 and 3 respectively of the Sewage Disposal Regulation (B.C. Reg. 411/85) and as amended from time to time.

Bylaw 2000-453 deleted and replaced Section 1.04 (September 12, 2011):

1.04 Provision of Gravity Flow Sewer

'A gravity flow sanitary sewer system in accordance with Schedule C.6 must be designed, approved and installed in addition to the requirements of this schedule when the lands are zoned "Urban Residential" in the District of Summerland Zoning Bylaw and as amended from time to time. This includes RSD1, RSD1(i), RSD2, RSD3, RPN, RDH, RMD, RSH, RMH and RHD zones and any other zones amended as Urban Residential classification.'

SCHEDULE "C.8" - DRAINAGE SYSTEMS

SECTION 1 - GENERAL REQUIREMENTS

1.01 Introduction

Where the provisions of Table C.2.2 require construction of a storm drain system, the *Applicant* must provide drainage facilities including drainage mains, catch basins, manholes, service connections and all related appurtenances in accordance with the standards and specifications set out in this Schedule, *MMCD* 02721, and the provisions of this bylaw.

The *Owner's Engineer* must design the *drainage system* so that all downstream drainage facilities are capable of handling the projected post *development* flows. Storm water must be directed to an acceptable discharge point, such as the Okanagan Lake, a major creek, a ditch or trunk main with adequate capacity.

1.02 Engineering Drawings

Where an *Applicant* is required to construct a storm *drainage system,* design drawings prepared in accordance to Schedule D, and detailed design calculations of the required *works* must be submitted to the Director of Engineering and Public Works. The drawings must show alignment and size of pipes, proposed grades, including gutter line profiles through intersections and transition sections between standard *road* cross-sections, distances between manholes, manhole invert elevations, existing ground line and proposed final ground line over pipe, all easements and statutory rights of way, lift stations, force mains, pipe bedding requirements, and all such other details as may be required.

SECTION 2 - DESIGN CRITERIA

2.01 System Components

Each *drainage system* must consist of the following components:

(a) A Minor System consisting of pipes and ditches which convey flows of a 10-year return frequency.

Driveway culverts that form part of the minor system must be designed to the 10-year return frequency with the design headwater not to exceed half the diameter of the culvert. Minimum culvert size shall be 400 mm.

(b) A Major System consisting of surface flood paths, roadways, and water courses which convey flows of a 100-year return frequency. Major flood path routing is required wherever surface overland flows in excess of 0.01 m^3/s are anticipated. Creeks regulated by the Ministry of Environment may require design to a 1 in 200 year flood.

Roadway crossings must be designed to accommodate the 100-year return frequency. The headwater profile may not exceed half the diameter of the cross culvert. Major overland flow routes are required down-stream of any low-point in a *road* or *cul-de-sac.*

The system must be designed to accommodate the design major flow, should any facility become blocked or restricted. Minimum Major System culvert diameter 600 mm.

(c) A *Parcel Drainage System* which identifies individual *parcel* drainage patterns. Where runoff from a *parcel* will cross neighbouring properties, the *Applicant* must:

(i) provide drainage *works* designed and constructed to dispose of the runoff on the *parcel,* **OR**;

(ii) provide a surface or sub-surface conveyance system designed and constructed as part of the overall *drainage system* and where necessary, be protected by easements.

The *Owner's Engineer* shall assess the potential for groundwater problems and a storm drainage service connection shall be required and permitted only in areas where groundwater has been identified as a potential problem by the *Owner's Engineer* or in a drainage plan adopted by the *Regional Board.* Where groundwater is a potential problem, each *parcel* must be provided with a storm drainage service connection.

2.02 Design Methods

Storm *drainage systems* must be designed using conventional infrastructure (pipes, culverts, etc.) and stormwater management techniques (lot grading. detention etc.).

(a) Conventional systems must be designed using Hydrograph Methods. For *developments* where the tributary areas are less than 10 hectares, and detention facilities are not involved, the rational formula may be used. The *Owner's Engineers* must provide to the *District of Summerland* all calculations pertinent to the design of the proposed *drainage systems.* All designs must take into consideration post *Development* upstream flows.

(i) Rational Method - only applicable to small water sheds (8 ha or less) with *drainage system* not including detention systems.

(ii) Hydrograph Methods - required for larger areas and for any *drainage system* which includes detention facilities.

Manual methods will not be accepted.

Computer models shall be as contained in the District of Summerland list of approved storm water management models. Included are:

- OTIHYMO and MIDUSS for planning studies; or,
- HYDSYS for all storm water design and analysis studies,

Other modelling systems may be considered as approved by the *District of Summerland Director of Engineering and Public Works.* The U.S. Soil Conservation Service (SCS) method is not acceptable for the Summerland area (including the SCS unit hydrograph routine in OITHYMO).

Whenever possible, a model must be validated and properly calibrated under *local* conditions before its actual application. If not calibrated, the results are to be validated by comparing different models or methods.

(b) Stormwater management systems must incorporate such techniques as lot grading, surface infiltration, and sub-surface disposal, storage, or other acceptable methods, to limit the peak run-off from the *development.*

A stormwater management plan must include all drainage facilities, lot grading (showing pre and *post-Development* contours), major flood path routing, and all other appropriate information pertinent to the design.

Unless otherwise specified, a stormwater management plan is not required for rural residential or agricultural *developments* that have *parcels* 0.80 ha. or larger. A lot grading plan, however, is required for all *developments.*

2.03 Design Parameters

The soil character, land use, antecedent moisture conditions, time of concentration, intensity and duration, as well as other pertinent parameters must be considered by the *Owner's Engineer* in preparing the design.

2.04 Drainage Areas

The tributary drainage area must conform to the topography of the land and include all contributing areas.

It is the *Owner's Engineer's* responsibility to ensure that they obtain true and accurate elevations for the *development* of the site and to confirm the accuracy of any mapping or information that may be provided by the *District of Summerland or other agency.*

2.05 Runoff Return Frequency

The following return frequencies must be used for design:

- Minor Systems - 10 year return
- Major Systems - 100 year return
- 200-year return where required by the Ministry of Environment
- For major structures such as bridges, a 1 in 200 year flood return must be used.

2.06 Site and Parcel

Subdivision and *development* must incorporate site and *parcel* grading techniques according to this section.

The following criteria must be used:

(a) Each *parcel* must be graded to drain to a *drainage system,* pursuant to Schedule C.8, Section 2.01 (c)

(b) Areas around buildings must be graded away from the foundations.

(c) An individual *parcel* will not be permitted to direct stormwater discharge or foundation drainage into any natural water course, park or green belt area(s). Sheet flow must be used.

(d) Driveways must be constructed such that the runoff from the driveway does not enter any building on the *parcel* and must conform to all requirements of existing bylaws and regulations in the District of Summerland.

2.07 Minimum Building Elevations

Where a storm sewer connection is provided to a *parcel* pursuant to Schedule C.8, Section 2.01, the *Owner's Engineer* must establish a *minimum building elevation* which shall be registered as a restricted covenant against the *parcel.* The *Owner's Engineer,* when establishing the *minimum building elevation* must:

(a) ensure that the *minimum building elevation* is at least 150 mm above the maximum hydraulic grade line of the pipe system at the point of connection;

(b) consider the physical elevation for a storm drain connection to the actual building site;

(c) consider the physical elevations for a sanitary sewer connection to the actual building site.

2.08 Roof Drainage

Roof drainage must not be discharged to storm drains. Pipes directed from roof drains onto the *highway* are not permitted.

On flat roofs, in commercial, industrial and institutional *developments,* controlled-flow roof drain devices must be installed to provide temporary storage and retard the discharge to the ground or storm drain system.

2.09 Detention Facilities

Detention facilities may be incorporated in the design. The location must be pre-approved by the Ministry of Transportation and Highways (if applicable) or the *District of Summerland Director of Engineering and Public Works.*

2.10 Flow Capacities

When calculating flow capacities or minimum grades for storm drains and open channels Manning's formula must be used.

2.11 Pipe Location

Storm *drainage systems* located within the *highways* right of way must be installed in accordance with Standard Drawing 101.

2.12 Minimum Pipe Diameter

- Mains; residential - single family 250 mm diameter
- Mains; industrial, commercial, multiple family 300 mm diameter
- Catch basins leads 200 mm diameter

2.13 Minimum Culvert Diameter

A minimum culvert diameter shall be as provided for in Schedule C.8, Section 2.01(a).

2.14 Minimum Depth of Cover

The minimum depth of cover must be:

(a) for Storm Drains: 1.2 min travelled areas and 1.0 m elsewhere,
(b) for Culverts: crossing *roads* 0.3 m; crossing driveways 0.2 m,
(c) for Catch Basin Leads: 0.9 m.

The elevation of storm drains at the upstream tributary points must be of sufficient depth to service all of the tributary lands.

2.15 Service Connections

Service connections where permitted must:

(a) be installed as provided for in Schedule C.8, Section 2.01, and in accordance with Standard Drawing 501.

(b) have a minimum diameter of 100 mm for residential and 150 mm for industrial or commercial.

(c) have a slope greater than 2% for 100 mm diameter and 1%for 150 mm diameter.

(d) be installed at the downstream portion of the *parcel.*

(e) be installed at an offset of 4.0 m from the property pin.

2.16 Minimum/Maximum Velocity

The minimum velocity for pipes flowing full, or half full, must be 0.75 m/s.

Where velocity exceeds 4.5 m/s*,* scour protection may be required and anchor blocks will be required.

Where drainage discharge enters a natural watercourse, maximum velocities shall be 1.0 m/s.

2.17 Alignment of Sewer Mains

Sewer mains must be designed to follow a straight alignment between manholes unless approved by the *Director of Engineering and Public Works.* Horizontal curves will not be permitted.

2.18 Manholes

Manholes are required at:

- all changes in grade greater than 1.0%
- all intersecting storm drains
- all changes in pipe size
- every 150 m for pipes
- all changes in direction

2.19 Hydraulic Losses in Manholes

The following criteria must be used:

(a) the crown of the downstream pipe must not be higher than the crown of the upstream pipe,

(b) minimum drop in invert levels across manholes:

(i) straight run - no drop required other than slope of pipe
(ii) deflections up to 45° - 15 mm drop
(iii) deflection 45° to 90° - 33 mm drop

(c) drop manholes or outside ramps must be installed when the drop between inverts exceeds 450 mm.

2.20 Temporary Clean-outs

Temporary clean-outs may be provided at terminal sections of a main provided that:

(a) future extension of the main is proposed or anticipated,
(b) the length of storm drain to the downstream manhole does not exceed 45.0 m,
(c) the depth of the pipe does not exceed 2.0 mat the terminal point.

2.21 Catch Basins

Catch basins must be provided at regular intervals along *roads,* at intersections, and at low points. Catch basin must be installed in locations which will not conflict with crosswalks.

Catch basins must:

- be designed to drain a maximum area of 675 m^2 on *highways* with grades up to 3% and 450 m^2 on steeper grades.
- have a maximum spacing of 150 m.
- have a 200 mm diameter lead for single and 250 mm diameter lead for double catch basins.
- discharge directly into manholes wherever possible.
- be side inlet for all curbed *roads.*
- be constructed and installed in accordance with Standard Drawings 502 and 503.

2.22 Swales

Swales must be maximum 150 mm deep. All swales are to be lined with turf on a minimum 100 mm of topsoil. Swales required for lot grading conformity must be located on a 3.0 m easement where accepting drainage of adjacent lots. Swales forming major flood path routing must be designed to accommodate the anticipated flows and the easement established accordingly. Swales must have a minimum 1.0% grade.

2.23 Inlet and Outlet Structures

Outfalls of the storm sewer minor system into watercourses shall be designed recognizing aesthetics and erosion control.

When culverts or storm pipes are greater than 600 mm, the outfall pipe or structure shall be protected against entry by a free swinging, lockable, weighted grating which will allow passage of materials on discharge. Inlet and Outlet structures must be constructed in accordance with Standard Drawing 506 and 507.

2.24 Driveway Culverts

Where a driveway culvert is required to be installed, the *Applicant* must construct a concrete endwall at each end of the culvert. The endwall must be constructed in accordance with Standard Drawing 508.

2.25 French Drains

The use of french drains shall only be permitted where the topography and soil conditions are proven adequate. A soils report will be required to support the design.

2.26 Natural Watercourses

All proposals for *works* affecting natural watercourses must be forwarded by the *Applicant* to the Ministry of Environment.

Should siltation or erosion controls be required by the above agencies, details of the proposed *works* must be included in the Director of Engineering and Public Works drawings and must be installed as part of the *works.*

SCHEDULE "C.9" - STREET LIGHTING

SECTION 1 - GENERAL REQUIREMENTS

1.01 Introduction

Where the provisions of Table C.2.2 require the provision of *street lighting,* the *Applicant* must provide *street lighting* including all service wiring, bases, poles, luminaries, lamps, photo cells, control equipment and all related appurtenances consistent with the standards and specifications set out in this Schedule, *MMCD* Section 16550, and the provisions of this bylaw.

1.02 Engineering Drawings

Where the *Applicant* is required to provide *street lighting,* design drawings must be submitted to the *District of Summerland Director of Engineering and Public Works* prepared by an Engineer recognized as specializing in electrical *work.* The design drawings must show the location of the street lights, wiring and all related appurtenances. In addition to the drawings the *Applicant* must submit detailed calculations in support of the *street lighting* layout.

The *street lighting* system must be laid out in accordance with this Schedule and the Electrical Department Construction Standards as amended from time to time.

1.03 Permit Fees

The *Applicant* is responsible for obtaining all required electrical permits, arranging for all electrical inspections covering his *work* and paying all fees for such permits and inspections. A copy of the permits are to be submitted to the *District of Summerland* at the time of application for *final approval.*

SECTION 2 - DESIGN CRITERIA

2.01 Levels of Illumination

The average levels of illumination in lux must be as shown in table C.9.1.

TABLE C.9.1
LEVELS OF ILLUMINATION

Road Classification	Residential Areas	Commercial and Industrial Areas
Arterial	9	17
Collector	6	12
Local	6	9
Walkways	5	5

Note: The maximum uniformity ratio for *local* residential *roads* and *walkways* shall be 6:1 and for all other *roads,* be 4:1. The uniformity ratio is expressed as the average horizontal Lux divided by the minimum horizontal Lux.

2.02 Lamp Standard Locations

In general, lamp standards must be installed as follows:

1.	*Arterial highways*	-	Both sides of street - staggered spacing.
2.	*Collector highways*	-	Both sides of street - staggered spacing.
3.	*Local highways*	-	spaced one side of street behind sidewalk if sidewalk required, otherwise both sides of street - staggered spacing.
4.	*Walkways*	-	one at every entrance to a *walkway* and additional lighting where required to meet illumination requirements. Design of the light distribution pattern must minimize light spill into adjoining properties.

Lamp standards must not conflict with driveways, underground services and fire hydrants.

2.03 Scheduling

Scheduling of *work* with the governing electrical authority is the *Applicant's* responsibility. Where costs are incurred with West Kootenay Power or the District of Summerland Electrical Department in installing the light system, these costs shall be considered as part of the cost of the system and shall be at the expense of the *Owner.*

2.04 Approval

Prior to issuance of a *Certificate of Total Performance:*

(a) the *Applicant* must submit a to the Director of Engineering and Public Works a copy of the Certificate of Inspection by the governing electrical authority showing that the installation is unconditionally approved.

(b) If the *subdivision* or *development* is not located in an existing streetlight local service area, the *Owner* must submit a letter formally requesting that the local service area boundary be expanded to include the *subdivision* or *development.*

2.05 Connection to Utility

Connection shall be made in accordance with Standard Drawings located in the District of Summerland Electrical Department Construction Standards.

SCHEDULE "C.10" - ELECTRICAL AND COMMUNICATIONS WIRING AND GAS DISTRIBUTION

SECTION 1 - GENERAL REQUIREMENTS

1.01 Introduction

Electrical and communication wiring must be provided to serve each *parcel* being *subdivided* or *developed* in accordance with the standards and specifications set out in this Schedule. MMCD Section 16650 and the provisions of this bylaw and the District of Summerland Electrical Department Construction Standards. Where the *subdivision* or *development* is to be serviced by a natural gas distribution system, the system must be designed and installed in accordance with the standards and specifications of BC Gas Inc., this schedule and the provisions of this bylaw. Provisions of *underground wiring* shall be as shown in Table C.2.2.

1.02 Engineering Drawings

Design drawings showing detailed design of the necessary *works* must be submitted to the *District of Summerland Director of Engineering and Public Works.* The Engineering drawings must clearly indicate the locations of poles, structures, conduits, pipes and any other facilities required.

SECTION 2 - DESIGN CRITERIA

2.01 Utility Locations

Location of underground ducting and gas main piping must be in accordance with Standard Drawing 101.

2.02 Installation

All electrical and communication wiring and duct work must be installed in accordance with the applicable authorities standards and specifications.

SCHEDULE “D”

ENGINEERING DRAWINGS

This is Schedule "D" of the District of Summerland of Central Okanagan Subdivision and Development Servicing Bylaw No. 99-004

_____

Administrator/Clerk

SCHEDULE "D.1" - PREPARATION OF ENGINEERING DRAWINGS

SECTION 1 - GENERAL REQUIREMENTS

1.01 Introduction

These requirements pertain to the preparation of design and as-constructed drawings for all *works* required to be constructed and installed under the provisions of this bylaw. Existing *works* refers to the *works* which were constructed and installed during prior *subdivision* or *development.* Proposed *works* refers to the *works* which are to be constructed and installed during the current *subdivision* or *development* phase. Future *works* refers to any *works* that will be constructed or installed in future phases of *subdivision* or *development.*

Where no standard is defined in this Schedule for the preparation of a drawing to portray a particular service, structure, or other item, instructions and requirements shall be obtained from the *District of Summerland Director of Engineering and Public Works.*

1.02 As-Constructed Drawings

The *Applicant* must submit as-constructed drawings after the completion of the *works* and prior to issuance of a *Certificate of Total Performance.* The *Applicant* must deliver as constructed drawings in both mylar and electronic format to the *District of Summerland.* The as-constructed drawings shall include a title page, key plan, building envelope plan, composite utility plan, plan profile, details, cross sections, and any other related drawings.

SECTION 2 - PREPARATION OF DRAWINGS

2.01 Format

Drawings must be prepared as follows:

(a) using the *District of Summerland* standard border, title block, drawing symbols and material symbols in accordance with Standard Drawings A01 and A02 and as contained in electronic format and attached as Appendix "A", **AND**;

(b) using the legal plan which will be sent to Land Titles Office for registration as the cadastral base, **AND**;

(c) in accordance with the sample engineering drawings attached as Appendix "B", **AND**;

(d) in compliance with the provisions of this bylaw.

2.02 Sheet Layout

Sheet layout shall conform to the following standards:

- Sheet size to be A1. Mylar to be 3 mil with matte both sides.
- All information shall be completely contained with the drawing borders and shall not encroach on the title block.

- Place north arrow close to the top right hand side of the sheet. For fragmented plan views, place north arrow at the top right hand side of each fragment.
- North arrow must point towards the top of the page or towards the left hand edge of the page.
- In all cases the title page, key plan, location plan and composite utility plan must be oriented in the same direction.
- Matchlines must be drawn and reference the appropriate sheet showing the continuation if the size of the *subdivision* or *development* makes it necessary to place the key plan or composite utility plan onto two or more sheets.

2.03 Dimensions and Units

The following conventions must be used:

- Dimensions and units must be shown in metric. No imperial units are permitted.
- Distances must be in meters and grade in percent to an accuracy of 2 decimal places.
- Elevations to an accuracy of 3 decimal places.
- Areas must be in square meters rounded to the nearest square meter.
- Pipe sizes must be in millimeters as per ASTM specifications using 1" = 25 mm.
- Existing imperial dimensions, except for pipe sizes, are to be soft converted using the factors of 1 inch = 25.4 millimeters or 1 foot = 0.3048 meters.

2.04 Lettering

Lettering must conform to the following:

- All lettering to be upper case Leroy or AutoCAD - Romans.
- All lettering to maintain a 1:10 ratio between plotted text height and plotted pen thickness.
- The minimum plotted text height shall be 1.5 mm.
- The maximum plotted text height shall be 5.0 mm.
- Use black ink on all as-constructed drawings except that green ink may be used on the plan profile grid lines.

2.05 Scales

The following scales must be used:

- Plan View Drawings 1:500
- Plan and Profile Drawings Horizontal 1 :500
  Vertical 1:50

Scales for location plans, key plans, cross-sections, and details shall be chosen as deemed suitable for the application.

2.06 Title Page

Title Pages shall contain the following information:

- Name of *Development*
- Name and address of Developer

- Name and address of *Engineer*
- Site plan of *subdivision* or *development*
- Overall plan with lot numbers, plan numbers and street names for the subject *development* and adjoining properties. For phased development all phases must be shown with the current phase outlined darker than future or existing phases.
- File numbers of approving authorities, (i.e. *District of Summerland* and the Ministry of Transportation and Highways)
- Complete list of drawings belonging to the set
- Legal description of subject properties
- North Arrow

Note: The lettering used on this page is not required to conform to Schedule D.1, Section 2.04 in respect to text styles and text height.

2.07 Key Plan

Key Plans shall contain the following information:

- Lot numbers, plan numbers, and road names of the subject *development* and adjoining properties.
- Cross reference of the detailed drawings by outlining the area contained in each drawing and referencing that drawing by drawing number.
- North Arrow.

2.08 Building Envelope Plan

Building Envelope Plan shall contain the following information:

- Overall plan of current phase
- Lot numbers
- *Roads,* curbs, gutters and *sidewalks*
- Rights of way and easements
- Offset lines from all property boundaries indicating required building setbacks
- 10 meter by 10 meter square on each parcel indicating the required minimum building envelope
- Notes that indicate the required setbacks from all property boundaries pursuant to the *Zoning Bylaw*
- North Arrow

2.09 Composite Utility Plan

Composite Utility Plans shall contain the following information:

- All existing and proposed utilities, *roads, walkways,* and *sidewalks.*
- All rights of way and easements including widths.
- Control station monuments with identification number.
- All legal information, including bearings, dimensions, lot numbers, block numbers, legal plan numbers, and street names. All lots must be numbered.
- Show all BC and EC locations on curved lot lines.
- Dimensions for curved lot lines shall include radius and arc length.

- All roadway dimensions including width of right of way, BOC to BOC and BOC to edge of right of Way. Area of each parcel.
- Lots with curved frontage that do not meet the minimum frontage requirement, show arc length and radius at property line and at 6.0 meter offset.
- North Arrow.

2. 10 Plan and Profile Drawings

The plan and profile drawings shall be divided into two parts with the top half of the page containing the plan view and the bottom half of the page containing the profile view. The plan and profile drawing shall be prepared as follows:

1. Plan View

Plan views must be divided into two views as follows:

(a) Above Ground View

Above ground view must include the following:

- All features and utility installations visible above ground
- Lot numbers
- Dimensions establishing location of all surface works constructed within statutory rights of way and easements.
- Horizontal curve data for *road* centerlines including radius, arc length, tangent length, and delta angle.
- Curb, gutter, and *sidewalk* information including type of curb, width of sidewalk, location of letdowns for driveways, wheelchair ramps, etc.

(b) Below Ground View

Below ground view must include the following:

- Lot numbers.
- All underground utilities such as sanitary and storm sewers, water, electrical and communication wiring, gas and all applicable appurtenances.
- Utility alignment referenced to the nearest property line or right of way boundary.
- Size of all pipes and direction of flow for sewers.
- Specifications for all fittings, valves, and hydrants.
- Geodetic invert elevations at property line for all sewer services connected directly into manhole.
- Lot services (sanitary, storm, water) referenced to the nearest legal pin.

2. Profile View

Profiles shall be drawn on a grid that has horizontal lines with 2 mm spacing and vertical lines with 20 mm spacing. Horizontal lines must be accented every 20 mm. All vertical lines must be accented. All elevations shall be relative to a geodetic datum.

Plan and profile drawings must include the following:

- Continuous stationing on the accented vertical grid line.
- Pre-construction ground profile along the centerlines of proposed *roads.* In statutory rights of way or easements, show pre-construction ground profile for each utility. Include any related data or date surveyed.
- Profile shown at true centerline length and projected above to the plan view in as close a relationship as possible.
- *Road* centerline profile including the following information:
    - percent grade
    - chainage and elevations of BVC, EVC, and PVI
    - external "e" value
    - "K" value
    - "A.D." value
    - length of vertical curve
    - station and elevation of low point or high point vertical curves
    - on super elevated curves and crossfall sections, show percent crossfall and transition length and crown
- Profiles of invert and crown of pipes for sanitary sewer, storm sewer, and water mains as well as length, size, type, grade, and class of pipe (i.e. 75 m - 200 mm SAN SDR 35 PVC at 2.38 %).
- Manhole rim elevations and invert elevations at all inlets and outlets.
- Top and bottom inverts on manhole drop structures.
- Location type, and elevation of all crossing utilities.
- Gutterline and grate elevations for catch basins.
- Elevations at the right and left hand side of the profile and repeated at breaks in the profile.
- Elevations at every even metre graduation on the horizontal accented line.

SECTION 3 - ELECTRONIC DRAWINGS

3.01 General Requirements

The *Applicant* must submit to the *District of Summerland Director of Engineering and Public Works* a complete set of electronic drawings of the *subdivision* or *development* in DXF or DWG format compatible with the current version of AutoCAD being used by the *District of Summerland.*

The electronic drawing must be prepared in accordance with Schedule D.1, Section 2.0 and the conventions prescribed in Schedule D.1, Section 3. 0.

3.02 Conventions

Layernames, color, linetype, line thickness, pen number, and type of object placed on each layer must be in accordance with Table D.1.1. No drawing shall be submitted that contains layernames not included in Table D.1.1. The *Owner's Engineer* may submit a request to the *District of Summerland Director of Engineering and Public Works* to include additional layernames in Table D.1.1 for use in the preparation of drawings. The *District of Summerland Director of Engineering and Public Works* will determine if the requested layernames will be added to Table D.1.1 for use by all Director of Engineering and Public Works. The decision of the *District of Summerland Director of Engineering and Public Works* will be final.

Drawing symbols must be in accordance with Standard Drawing A01.

Material symbols must be in accordance with Standard Drawing A02.

No drawing shall be submitted that contains any external references (xrefs).

All as-constructed drawings must be purged of all unnecessary information prior to submission to the *District of Summerland.*

3.03 Prototype Drawings

An electronic copy of the *District of Summerland* prototype drawing is attached as Appendix "A". The prototype drawing contains the *District of Summerland* standard border, titleblock, layers, blocks and linetypes to be used in all submissions of design or as-constructed drawings.

Table D.1.1
District of Summerland
STANDARD AUTOCAD LAYERS

AUTOCAD LAYER SETTINGS				PLOT SETTINGS	
NAME	**DESCRIPTION**	**COLOR**	**LINETYPE**	**PEN NUMBER**	**PEN THICKNESS**
0	not used	7	N/A	N/A	N/A
Bldg-env	building envelope	7	continuous	7	0.35
Border	D.O.S standard	6	continuous	7	0.7
Boundary	subdivision boundary	252	borderx2	252	0.2
Curb	Curb	2	continuous	7	0.15
Curvdata	curve data	1	continuous	7	0.25
Defpoints	dimension nodes	N/A	N/A	N/A	N/A
Dims	parcel dimensions	15	continuous	7	0.2
Easement	utility rights of way	8	hidden	8	0.25
Grid-1	20mm profile grid	8	continuous	8	0.25
Grid-2	2mrn profile grid	9	continuous	8	0.15
House-no	civic addresses	2	continuous	7	0.15
Ip	iron pins	2	continuous	7	0.15
Legal	lot & plan lines	1	continuous	7	0.25
Mailbox	Mailbox	2	continuous	7	0.15
Monu	survey monuments	7	continuous	7	0.35
P-f-ground	profile final ground	7	continuous	7	0.35

P-o-ground	profile original ground	2	hidden	7	0.15
P-san	profile sanitary	3	sanitary	7	0.5
P-stm	profile storm	4	storm	7	0.5
Roadcl	road centerline	1	center	7	0.25
Setback	building setback	8	hidden	8	0.25
Swalk	Sidewalk	2	continuous	7	0.15
Uctv	cable television	11	cable-tv	7	0.2
Uelect	Electrical	12	ug_electrical	7	0.2
Ugas	Gas	13	gas	7	0.2
Usana	sanitary appurtances	80	continuous	7	0.3
Usanfm	sanitary force main	3	continuous	7	0.5
Usanml	sanitary main	3	sanitary	7	0.5
Usans	sanitary service	3	continuous	7	0.5
Ustma	storm appurtances	140	continuous	7	0.3
Ustmml	storm main	4	storm	7	0.5
Utel	telephone	14	telephone	7	0.2
Uwata	water appurtances	150	continuous	7	0.3
Uwatml	water main	5	water	7	0.5
Uwats	water service	5	continuous	7	0.5
Viewlayer	viewport (F)	7	continuous	N/A	N/A
Prefix "fut-	prefix future works	8	varied	8	0.25
Prefix "ex-	prefix existing works	8	varied	8	0.25

* For works or features that are not part of the *subdivision* or *development* and which are proposed to be constructed in the future or in a subsequent phase, add the prefix "fut-" to the appropriate layer name and place the entities on that layer.

* For existing *works* or features add the prefix "ex-" to the appropriate layer name and place the entities on that layer.

* For utility above ground *works* add the suffix "-abv" to the appropriate layer name and place entities on that layer.

* For all text labels add the suffix "-txt" to the appropriate layer name and input text on that layer.

HP DESIGNJET 750C PLOTTER CONFIGURATION

Pens:	Lines merge: on Fill: solid
Annotations:	Drawing file name: on Plot date/time: on
Print colors:	Colors as grey

SCHEDULE "D.2" - STANDARD DRAWINGS

SECTION 1 - LIST OF DRAWINGS

Division	Description	Drawing #
General	Standard Drawing Symbols	A01
	Material Symbols	A02
	Water Main and Sewer Main Anchors	A03
Roads	Arterial Highway (Divided) 27.0 m R.O. W.	100-1
	Arterial Highway (Undivided) 20.0 m R.O.W.	100-2
	Major Collector Highway - 20.0 m R.O.W	100-3
	Minor Collector Highway - 20. 0 m R. 0. W.	100-4
	Industrial Highway - 18.0 m R.O.W.	100-5
	Local Residential Highway- 16.0 m R.O.W.	100-6
	Cul-de-sac - 16.0 m R.O.W.	100-7
	Expanded Comer- 16.0 m R.O.W.	100-8
	Typical Rural Road	100-9
	Typical Boulevard Construction	100-10
	6.0 m Lane	100-11
	Gradation Limits - 19 mm Base Gravel	100-12
	Gradation Limits -75 mm Sub Base Gravel	100-13
	Alignment of Utilities	101
	Emergency Access Roads	102
	Utility Trench	103
	Urban Walkway	104
	Bicycle Baffle	105
	Removable Restriction Post	106
	Chain Link Fence	107
	Handrail on Concrete Wall	108
	Sidewalk Fence Welded or Slip On	109
	Concrete or Concrete Block Retaining Wall	110
	Reinforced Concrete Stairs	111
	Non Urban Walkway	112

Division	Description	Drawing #
Roads (cont'd)	Bicycle Lane	113
Curb and Gutter	Curb and Gutter	201
	Sidewalk (No Boulevard Strip)	202
	Sidewalk (With Boulevard Strip)	203
	Wheelchair Ramp (No Boulevard Strip)	204
	Wheelchair Ramp (With Boulevard Strip)	205
	Driveway Crossings for Barrier Curbs	206
Water	19 mm - 25 mm Water Service Connection	301
	Blow-Off Detail	302
	Air Valve Assembly	303
	Fire Hydrant Installation	304
	Gate Valve Installation	305
	Thrust Block Configurations	306
	Gate Valve Thrust Blocks	307
	Test Point Installation	308
	Summerland Park Irrigation Service	309
Sanitary/Storm	Manhole Frame and Cover	401
	Stom1 & Sanitary Reinforced Manhole for Pipes 450 Dia. and Less	402
	Storm & Sanitary Manhole Base Details for Pipes Greater Than 450mm Dia.	403
	Storm & Sanitary Manhole Drop Structures	404
	Storm & Sanitary Manhole Inside Ramp Structure	405
	Storm & Sanitary Cleanout	406
	Sanitary Sewer Service Connection for Riser Type and Non Riser Type	407

Division	Description	Drawing #
Sanitary/Storm (cont'd)	Sanitary Sewer Inspection Chamber	408
	Pressure Service Connection to Forcemain	409
Storm	Storm Sewer Service Connection	501
	Road Way Type Precast Concrete Catch Basin	502
	Catch Basin Detail Side Inlet	503
	Catch Basin Gutter Detail	504
	Bicycle Safe Catch Basin Grate	505
	Concrete or Concrete Block Endwall	506
	Storm Sewer Inlet with Safety Grill	507
	Concrete or Concrete Block Driveway Culvert Endwall	508
	Lawn Drain	509
Electrical	Electrical Trench Detail	601

APPENDIX “A"

STANDARD BORDER & BLOCKS (Can be provided upon request)

APPENDIX “B"

SAMPLE ENGINEERING DRAWINGS

The CORPORATION of the DISTRICT of SUMMERLAND

STANDARD DRAWINGS

INSERT AT SCALE 1:1

DESCRIPTION	BLOCK DEF.	SYMBOL	SYMBOL (WITH INSERTION POINT)
CAP	(CAP)		
CATCH BASIN	(CB)		
CLEAN OUTS	(CO)		(CENTER)
DRYWELL (EXISTING OR FUTURE)	(EDW)		(CENTER)
DRYWELL (PROPOSED)	(PDW)		(CENTER)
ELECTRICAL BOX	(ESB)		(CENTER)
FLOW ARROW	(FA)		
HYDRANT & VALVE ASSEMBLY	(HYD)		
IRON PIN	(IP)		(CENTER)
LAMP STANDARD	(LAMP)		
LAWN BASIN	(LB)		
LIFT STATION	(LS)		
MAIL BOX	(MAIL)		
MANHOLE, SANITARY PROFILE	(MSANP)		
MANHOLE, STORM PROFILE	(MSTMP)		
NORTH ARROW	(N_ARROW)		
POINT OF CURVATURE	(PC)		(CENTER)
POWER POLES	(PP)		(CENTER)
REDUCER	(RDCR)		
SANITARY INSPECTION CHAMBER	(IC)		(CENTER)
SANITARY MH (EXISTING OR FUTURE)	(ESAN)		(CENTER)
SANITARY MH (PROPOSED)	(PSAN)		(CENTER)
STORM MH (EXISTING OR FUTURE)	(ESTM)		(CENTER)
STORM MH (PROPOSED)	(PSTM)		(CENTER)
TELEPHONE BOX	(TSB)		
TEST PIT	(TP)		
TRAFFIC LIGHT	(TL)		
TRANSFORMER	(LPT)		
UTILITY JUNCTION BOX	(JB)		
VALVE	(VAL)		
WATER CURB STOP	(WS)		(CENTER)

SAN

STM

N

STANDARD DRAWING SYMBOLS

DIVISION: GENERAL

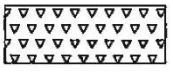
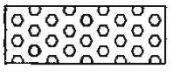
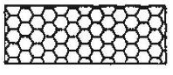
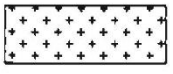
REVISED: DEC. 1999

DRAWING NUMBER: A01

The CORPORATION of the DISTRICT of SUMMERLAND

STANDARD DRAWINGS

NOT TO SCALE

SYMBOL	MATERIAL
	PROPOSED A.C. PAVEMENT
	EXISTING A.C. PAVEMENT
	GRANULAR BASE
	GRANULAR SUBBASE
	UNDISTURBED EXISTING GROUND
	GRANULAR PIPE BEDDING
	IMPORTED GRANULAR BACKFILL
	APPROVED NATIVE BACKFILL
	PIT RUN SAND
	DRAIN ROCK
	IMPORTED TOP SOIL
	CONCRETE

MATERIAL SYMBOLS

DIVISION: GENERAL

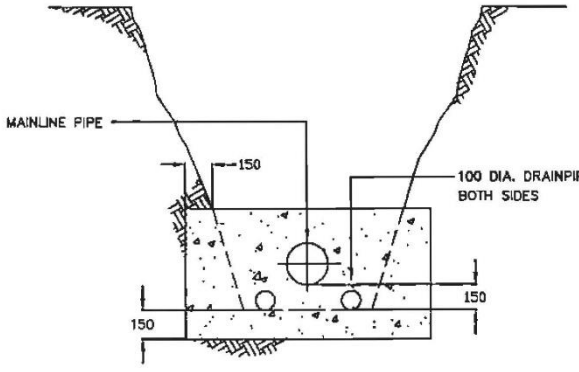
REVISED: DEC. 1999

DRAWING NUMBER: A02

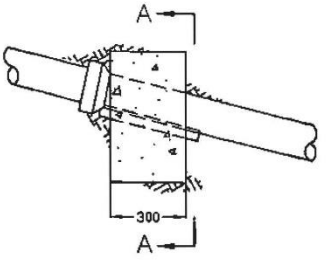
The CORPORATION of the DISTRICT of SUMMERLAND

STANDARD DRAWINGS

NOT TO SCALE

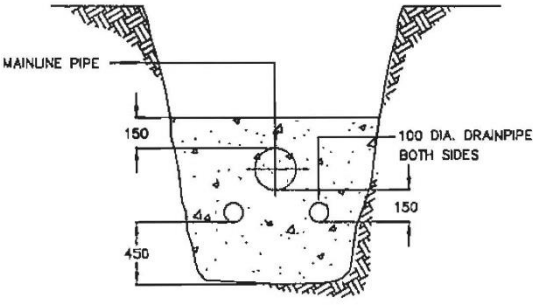


SECTION A-A

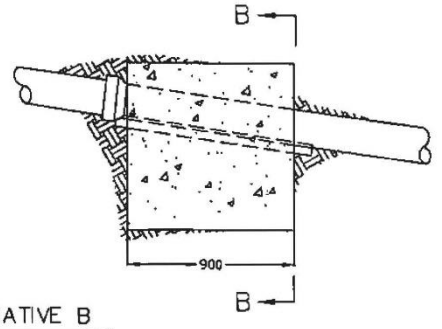


ALTERNATIVE A

FOR USE IN TILLS AND OTHER STABLE, WELL COMPACTED NATIVE MATERIALS.



SECTION B-B



ALTERNATIVE B

FOR USE IN CLEAN GRAVELS, SANDS AND OTHER LOOSE, PERMEABLE NATIVE MATERIALS.

NOTE:

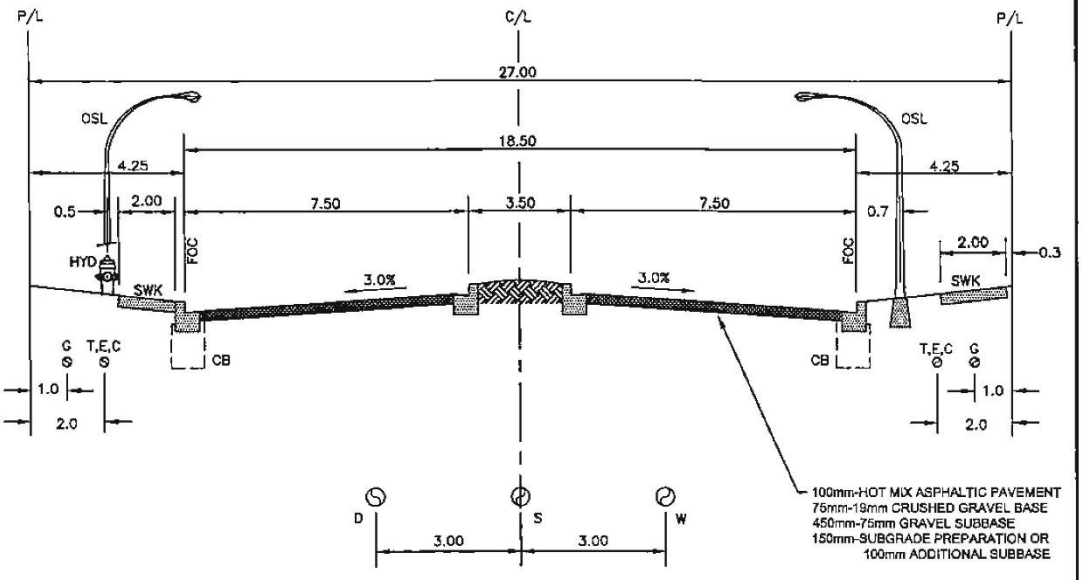
1) REFER TO DESIGN DRAWINGS, MMCD 03300 AND SCHEDULE C OF THIS BYLAW FOR DETAILED SPECIFICATIONS.
2) USE 20 MPa CONCRETE UNLESS SPECIFIED OTHERWISE IN DESIGN DRAWINGS.
3) ANCHORS ARE TO BE PLACED AGAINST AND ON THE DOWNHILL SIDE OF THE BELL OF THE PIPE, BUT MUST NOT SURROUND IT.
4) DOWNHILL FACE OF ANCHORS TO BE BEARING ON UNDISTURBED SOIL.
5) THIS DRAWING REPLACES MMCD G8.

WATER MAIN AND SEWER MAIN ANCHORS	DIVISION: GENERAL	DRAWING NUMBER: A03
	REVISED: DEC. 1999	

The Corporation of the District of Summerland

STANDARD DRAWINGS

NOT TO SCALE



LEGEND

		MIN. COVER	
C –	CABLEVISION	0.60	
T –	TELEPHONE	0.75	
G –	GAS	0.60	
E –	ELECTRICAL	1.05	(SEE NOTE 6)
W –	WATER	1.50	
S –	SANITARY SEWER	1.20	
D –	STORM SEWER	1.20	

HYD – HYDRANT
P/L – PROPERTY LINE
C/L – CENTER LINE
R/W – RIGHT–OF–WAY
SWK – SIDEWALK
C – CURB
FOC – FACE OF CURB
CB – CATCH BASIN
OSL – STREET LIGHT

NOTE:

1) HYDRANT VALVES ON TEE.
2) WATER SERVICE VALVES 0.3 FROM P/L.
3) NON–MOUNTABLE CURB.
4) SIDEWALKS SHOWN ARE FOR INSTALLATION ILLUSTRATIVE PURPOSES. FOR REQUIREMENTS, REFER TO APPENDIX C OF THIS BYLAW. (THE SUMMERLAND SIDEWALK PLAN) DETAILS TO BE FINALIZED AT TIME OF SUBDIVISION APPLICATION.
5) STREET LIGHTS ON BOTH SIDES ALTERNATING.
6) FOR ELECTRICAL DUCT DETAILS SEE ELECTRICAL DEPARTMENT CONSTRUCTION STANDARDS.

ARTERIAL HIGHWAY (DIVIDED)
27.0m RIGH–OF–WAY

DIVISION: ROADS

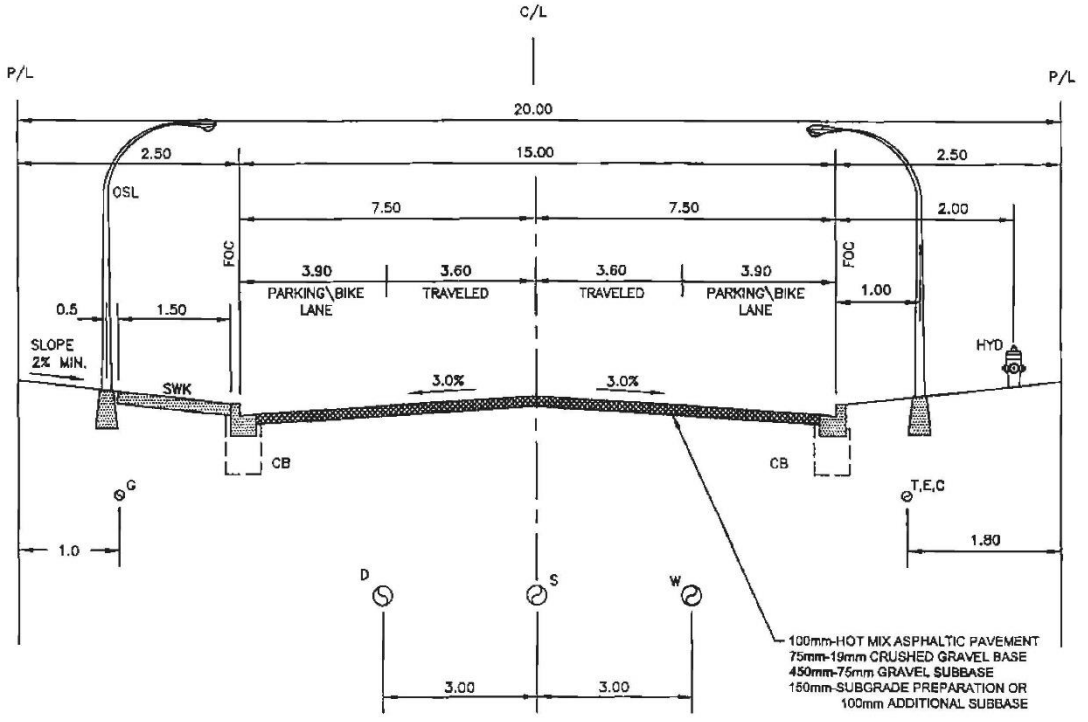
REVISED: NOV. 1999

DRAWING NUMBER: 100–1

The CORPORATION of the DISTRICT of SUMMERLAND

STANDARD DRAWINGS

NOT TO SCALE



LEGEND

		MIN. COVER	
C –	CABLEVISION	0.60	
T –	TELEPHONE	0.75	
G –	GAS	0.60	
E –	ELECTRICAL	1.05	(SEE NOTE 6)
W –	WATER	1.50	
S –	SANITARY SEWER	1.20	
D –	STORM SEWER	1.20	

HYD – HYDRANT
P/L – PROPERTY LINE
C/L – CENTER LINE
R/W – RIGHT-OF-WAY
SWK – SIDEWALK
C – CURB
FOC – FACE OF CURB
CB – CATCH BASIN
OSL – STREET LIGHT

NOTE:

1) HYDRANT VALVES ON TEE.
2) WATER SERVICE VALVES 0.3 FROM P/L.
3) NON-MOUNTABLE CURB.
4) SIDEWALKS SHOWN ARE FOR INSTALLATION ILLUSTRATIVE PURPOSES. FOR REQUIREMENTS, REFER TO APPENDIX C OF THIS BYLAW. (THE SUMMERLAND SIDEWALK PLAN) DETAILS TO BE FINALIZED AT TIME OF SUBDIVISION APPLICATION.
5) STREET LIGHTS ON BOTH SIDES ALTERNATING.
6) FOR ELECTRICAL DUCT DETAILS SEE ELECTRICAL DEPARTMENT CONSTRUCTION STANDARDS.

ARTERIAL HIGHWAY (UNDIVIDED)
20.0m RIGHT OF WAY

DIVISION: ROADS

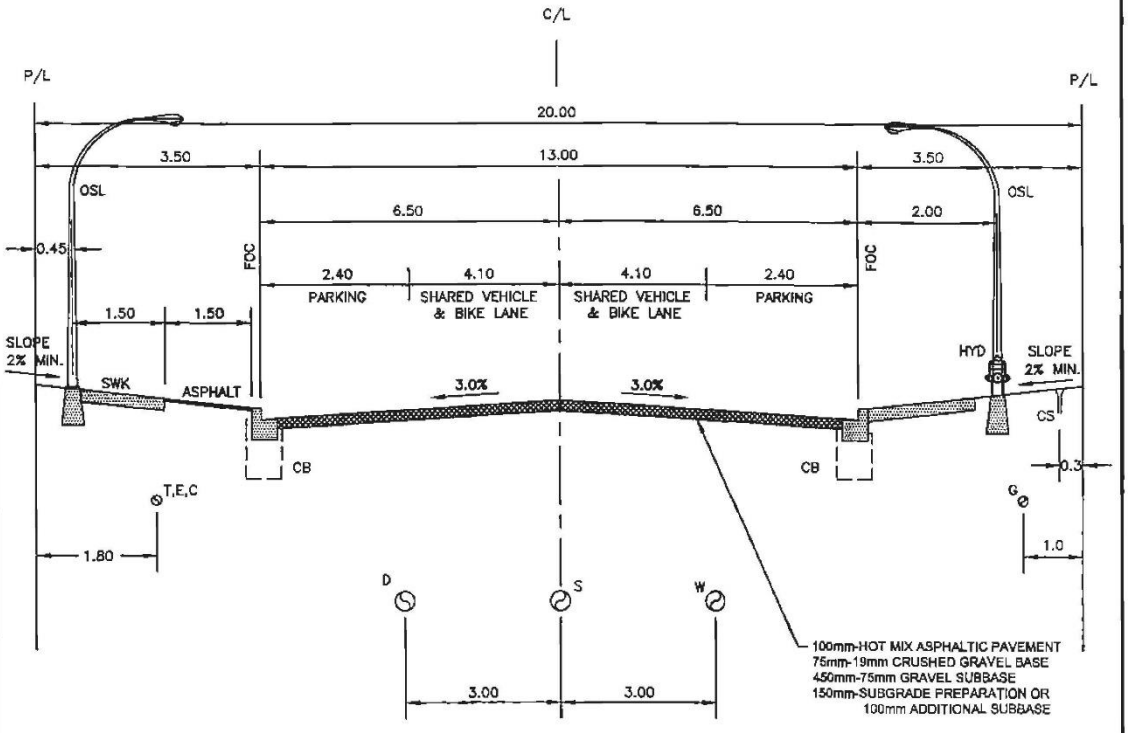
REVISED: JAN. 1999

DRAWING NUMBER: 100–2

The CORPORATION of the DISTRICT of SUMMERLAND

STANDARD DRAWINGS

NOT TO SCALE



LEGEND

		MIN. COVER	
C –	CABLEVISION	0.60	
T –	TELEPHONE	0.75	
G –	GAS	0.60	
E –	ELECTRICAL	1.05	(SEE NOTE 6)
W –	WATER	1.50	
S –	SANITARY SEWER	1.20	
D –	STORM SEWER	1.20	

HYD – HYDRANT
P/L – PROPERTY LINE
C/L – CENTER LINE
R/W – RIGHT-OF-WAY
SWK – SIDEWALK
C – CURB
FOC – FACE OF CURB
CB – CATCH BASIN
OSL – STREET LIGHT

NOTE:

1) HYDRANT VALVES ON TEE.
2) WATER SERVICE VALVES 0.3 FROM P/L.
3) NON-MOUNTABLE CURB.
4) SIDEWALKS SHOWN ARE FOR INSTALLATION ILLUSTRATIVE PURPOSES. FOR REQUIREMENTS, REFER TO APPENDIX C OF THIS BYLAW. (THE SUMMERLAND SIDEWALK PLAN) DETAILS TO BE FINALIZED AT TIME OF SUBDIVISION APPLICATION.
5) STREET LIGHTS ON BOTH SIDES ALTERNATING.
6) FOR ELECTRICAL DUCT DETAILS SEE ELECTRICAL DEPARTMENT CONSTRUCTION STANDARDS.

MAJOR COLLECTOR HIGHWAY
20.0m RIGHT OF WAY

DIVISION: ROADS

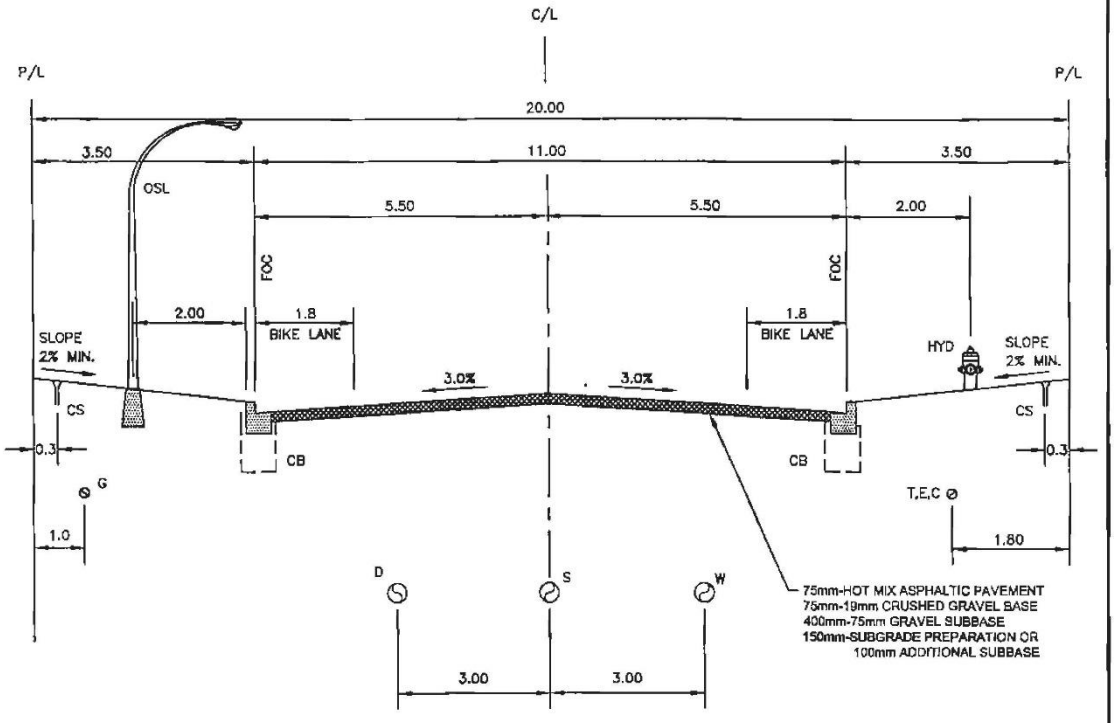
DRAWING NUMBER: 100-3

REVISED: JAN. 1999

The CORPORATION of the DISTRICT of SUMMERLAND

STANDARD DRAWINGS

NOT TO SCALE



LEGEND

		MIN. COVER	
C –	CABLEVISION	0.60	
T –	TELEPHONE	0.75	
G –	GAS	0.60	
E –	ELECTRICAL	1.05	(SEE NOTE 6)
W –	WATER	1.50	
S –	SANITARY SEWER	1.20	
D –	STORM SEWER	1.20	

HYD – HYDRANT
P/L – PROPERTY LINE
C/L – CENTER LINE
R/W – RIGHT-OF-WAY
SWK – SIDEWALK
FOC – FACE OF CURB
CB – CATCH BASIN
OSL – STREET LIGHT

NOTE:

1) HYDRANT VALVES ON TEE.
2) WATER SERVICE VALVES 0.3 FROM P/L.
3) NON-MOUNTABLE CURB.
4) SIDEWALK NOT REQUIRED ON MINOR COLLECTOR UNLESS SHOWN ON SUMMERLAND SIDEWALK PLAN (APPENDIX C OF THIS BYLAW) AS AMENDED FROM TIME TO TIME.
5) STREET LIGHTS REQUIRED ONLY AT INTERSECTIONS.
6) FOR ELECTRICAL DUCT DETAILS SEE ELECTRICAL DEPARTMENT CONSTRUCTION STANDARDS.

MINOR COLLECTOR HIGHWAY
20.0m RIGHT-OF-WAY

DIVISION: ROADS

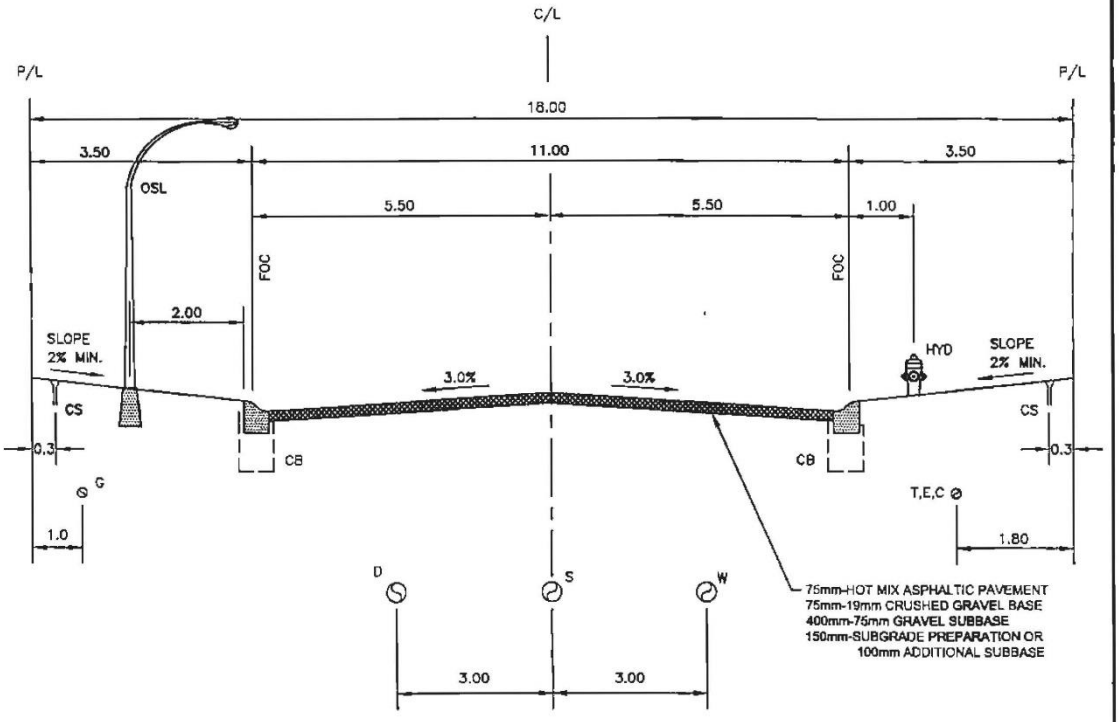
REVISED: JAN. 1999

DRAWING NUMBER: 100-4

The CORPORATION of the DISTRICT of SUMMERLAND

STANDARD DRAWINGS

NOT TO SCALE



LEGEND

		MIN. COVER	
C –	CABLEVISION	0.60	
T –	TELEPHONE	0.75	
G –	GAS	0.60	
E –	ELECTRICAL	1.05	(SEE NOTE 6)
W –	WATER	1.50	
S –	SANITARY SEWER	1.20	
D –	STORM SEWER	1.20	

HYD – HYDRANT
P/L – PROPERTY LINE
C/L – CENTER LINE
R/W – RIGHT-OF-WAY
SWK – SIDEWALK
FOC – FACE OF CURB
CB – CATCH BASIN
OSL – STREET LIGHT

NOTE:

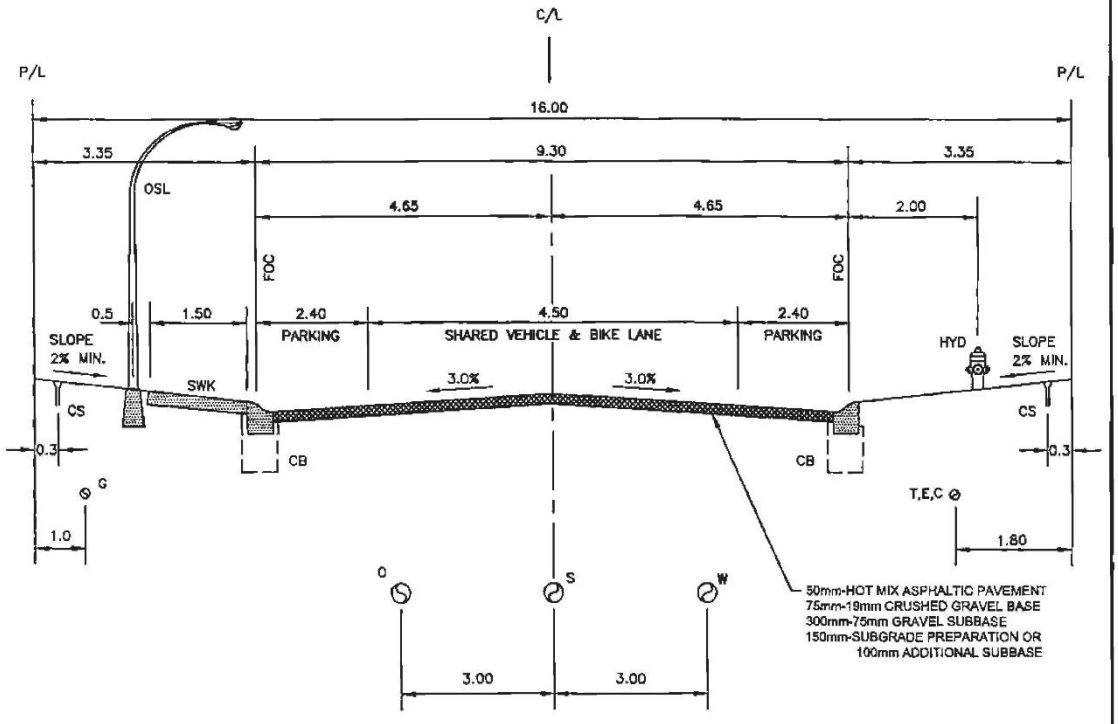
1) HYDRANT VALVES ON TEE.
2) WATER SERVICE VALVES 0.3 FROM P/L.
3) MOUNTABLE CURB.
4) SIDEWALK NOT REQUIRED ON MINOR COLLECTOR UNLESS SHOWN ON SUMMERLAND SIDEWALK PLAN (APPENDIX C OF THIS BYLAW) AS AMENDED FROM TIME TO TIME.
5) STREET LIGHTS REQUIRED ONLY AT INTERSECTIONS.
6) FOR ELECTRICAL DUCT DETAILS SEE ELECTRICAL DEPARTMENT CONSTRUCTION STANDARDS.

INDUSTRIAL HIGHWAY 18.0m RIGHT-OF-WAY	DIVISION: ROADS REVISED: JAN. 1999	DRAWING NUMBER: 100-5

The CORPORATION of the DISTRICT of SUMMERLAND

STANDARD DRAWINGS

NOT TO SCALE



LEGEND

		MIN. COVER	
C –	CABLEVISION	0.60	
T –	TELEPHONE	0.75	
G –	GAS	0.60	
E –	ELECTRICAL	1.05	(SEE NOTE 6)
W –	WATER	1.50	
S –	SANITARY SEWER	1.20	
D –	STORM SEWER	1.20	

HYD – HYDRANT
P/L – PROPERTY LINE
C/L – CENTER LINE
R/W – RIGHT-OF-WAY
SWK – SIDEWALK
FOC – FACE OF CURB
CB – CATCH BASIN
OSL – STREET LIGHT

NOTE:

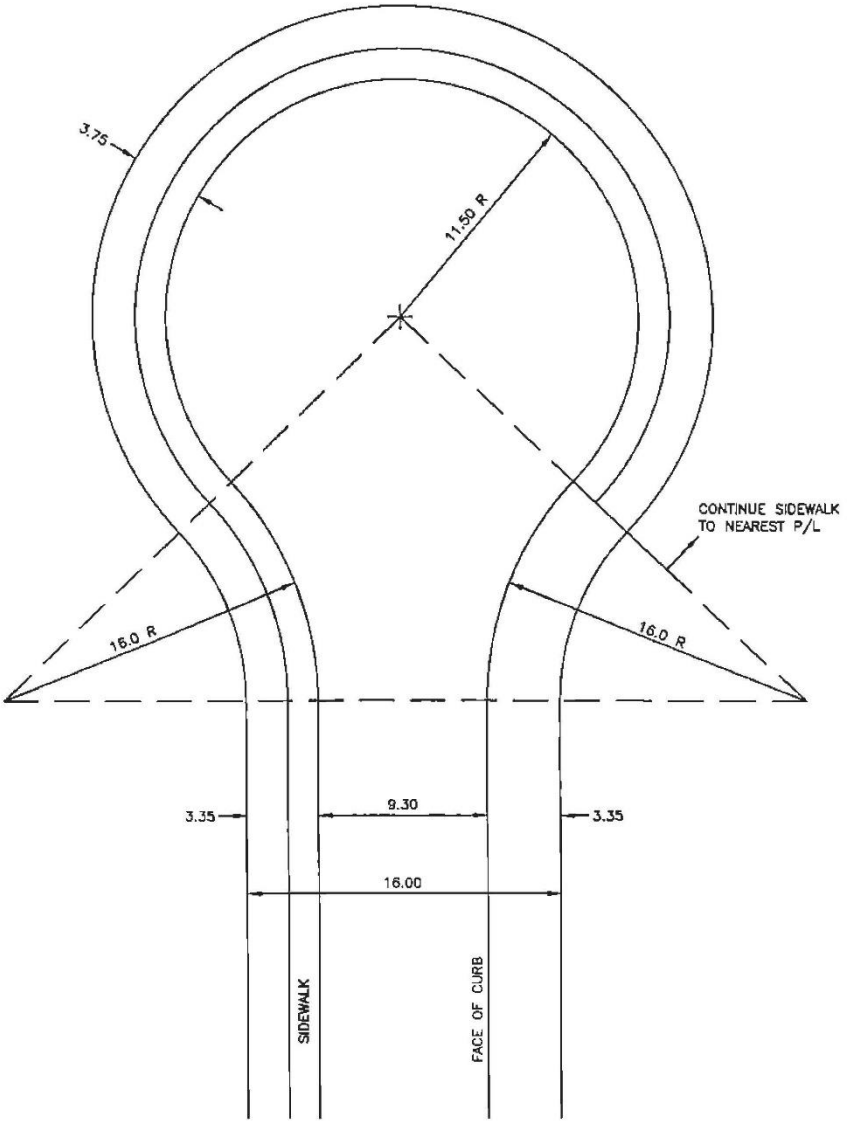
1) HYDRANT VALVES ON TEE.
2) WATER SERVICE VALVES 0.3 FROM P/L.
3) MOUNTABLE CURB.
4) SIDEWALKS SHOWN ARE FOR INSTALLATION ILLUSTRATIVE PURPOSES. FOR REQUIREMENTS, REFER TO APPENDIX C OF THIS BYLAW. (SUMMERLAND SIDEWALK PLAN) DETAILS TO BE FINALIZED AT TIME OF SUBDIVISION APPLICATION.
5) STREET LIGHTS ON BOTH SIDES, ALTERNATING.
6) FOR ELECTRICAL DUCT DETAILS SEE ELECTRICAL DEPARTMENT CONSTRUCTION STANDARDS.

LOCAL RESIDENTIAL HIGHWAY 16.0m RIGHT-OF-WAY	DIVISION: ROADS	DRAWING NUMBER: 100-6
	REVISED: JAN. 1999	

The CORPORATION of the DISTRICT of SUMMERLAND

STANDARD DRAWINGS

NOT TO SCALE



CUL-DE-SAC
16.0m RIGHT-OF-WAY

DIVISION: ROADS

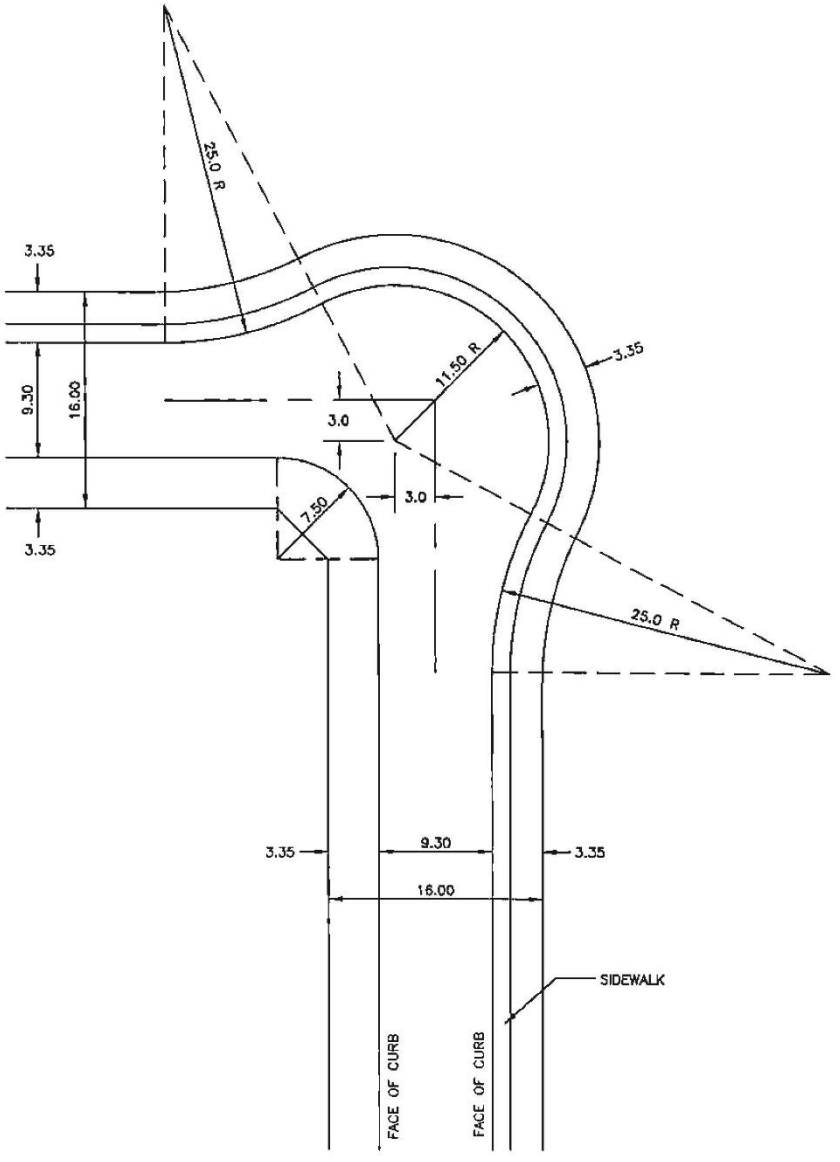
REVISED: JAN. 1999

DRAWING NUMBER: 100-7

The CORPORATION of the
DISTRICT of SUMMERLAND

STANDARD DRAWINGS

NOT TO SCALE



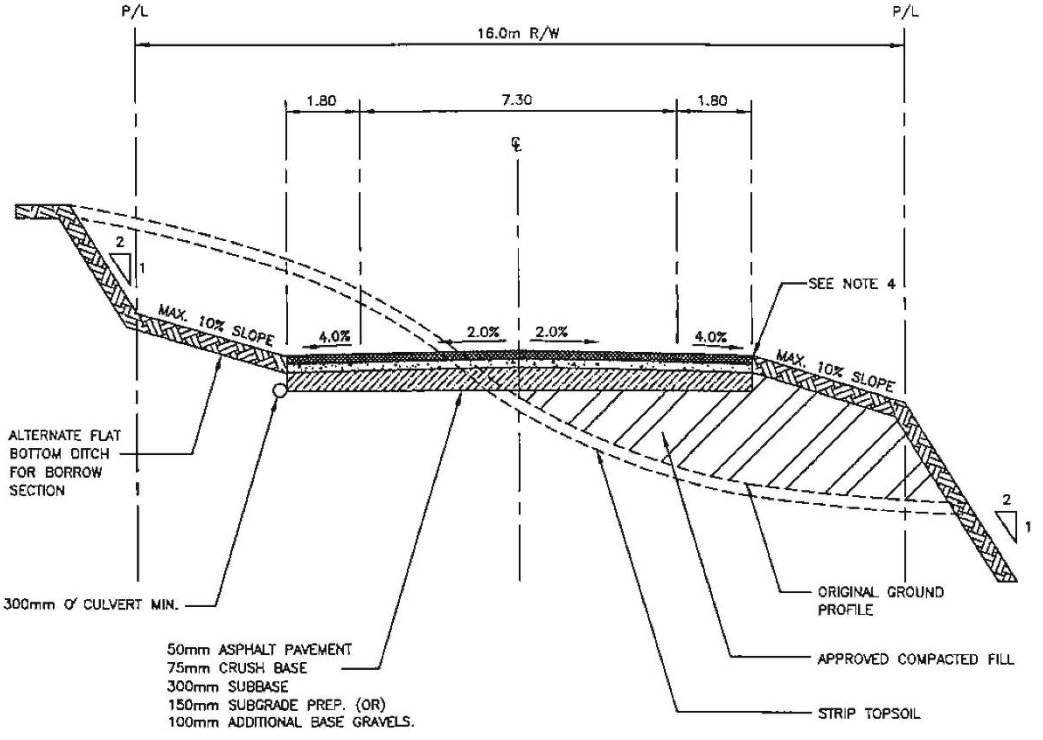
EXPANDED CORNER
16.0m RIGHT-OF-WAY

DIVISION:	DRAWING NUMBER:
ROADS	100-8
REVISED: JAN. 1999	

The CORPORATION of the DISTRICT of SUMMERLAND

STANDARD DRAWINGS

NOT TO SCALE



NOTE:

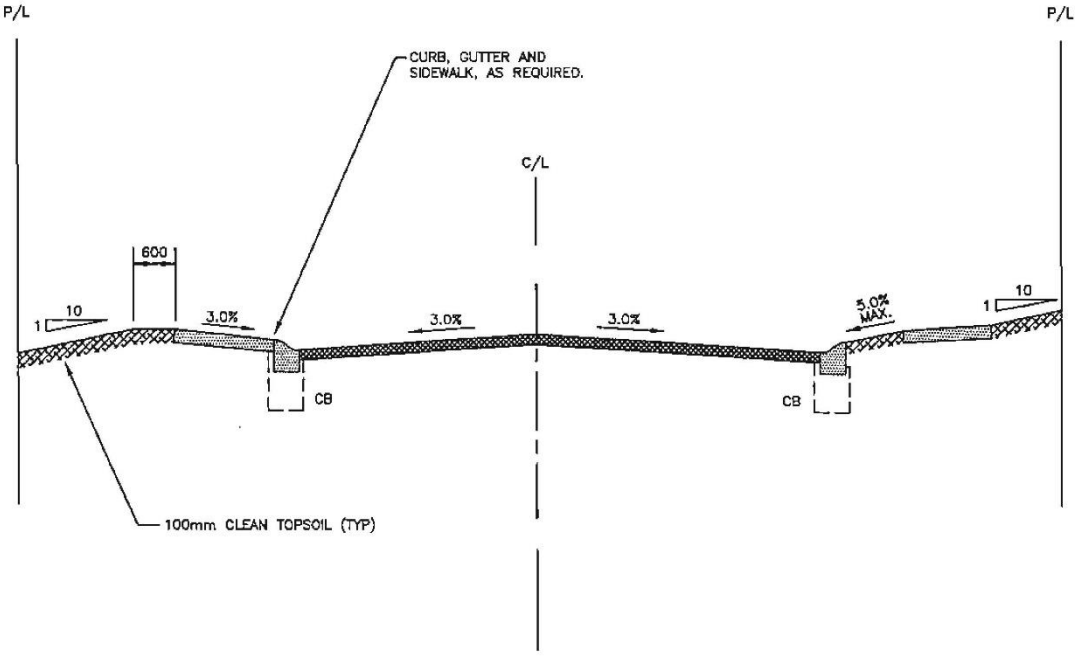
1) BACK SLOPES IN SOLID ROCK CUT ARE NOT TO BE STEEPER THAN 1/4.
2) ALL SLOPES SHOWN ARE MAXIMUM.
3) 1.8m WIDE PAVED SHOULDER REQUIRED ON ONE SIDE AS DETERMINED BY THE SUPERINTENDENT OF WORKS AND UTILITIES.
4) ASPHALT CURBS REQUIRED WHERE LOCAL CONDITIONS WARRANT – TO BE DETERMINED BY THE SUPERINTENDENT OF WORKS AND UTILITIES.

TYPICAL RURAL ROAD	DIVISION: ROADS	DRAWING NUMBER: 100–9
	REVISED: JAN. 1999	

The CORPORATION of the DISTRICT of SUMMERLAND

STANDARD DRAWINGS

NOT TO SCALE



NOTE:

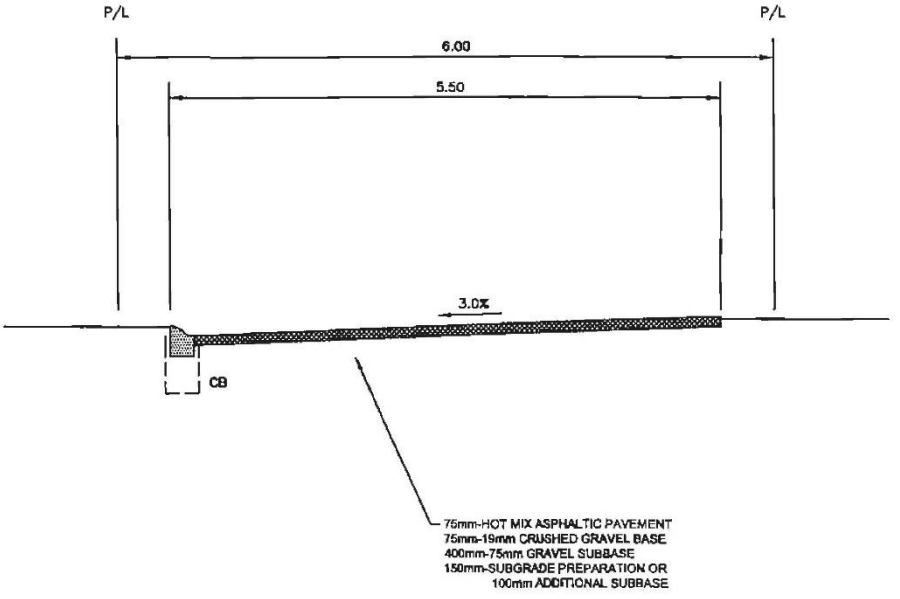
1) BACK SLOPES IN SOLID ROCK CUT ARE NOT TO BE STEEPER THAN 1/4.
2) ALL SLOPES SHOWN ARE MAXIMUM.
3) MAXIMUM GRADE FOR A DRIVEWAY ACROSS THE CITY BOULEVARD SHALL NOT EXCEED 5%.

TYPICAL BOULEVARD CONSTRUCTION	DIVISION: ROADS	DRAWING NUMBER: 100–10
	REVISED: JAN. 1999	

The CORPORATION of the DISTRICT of SUMMERLAND

STANDARD DRAWINGS

NOT TO SCALE

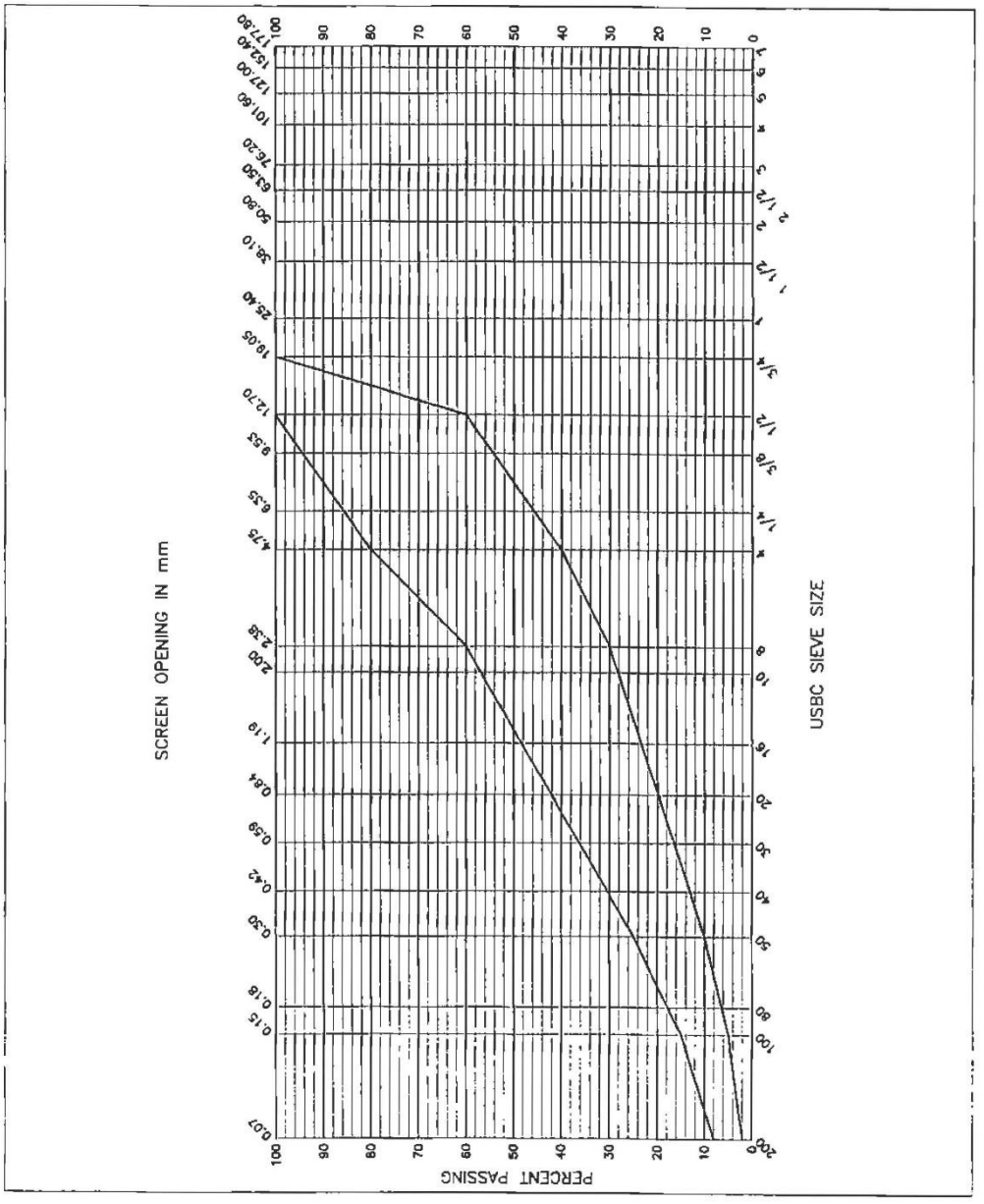


6.0m LANE	DIVISION: ROADS	DRAWING NUMBER: 100-11
	REVISED: JAN. 1999	

The CORPORATION of the DISTRICT of SUMMERLAND

STANDARD DRAWINGS

NOT TO SCALE



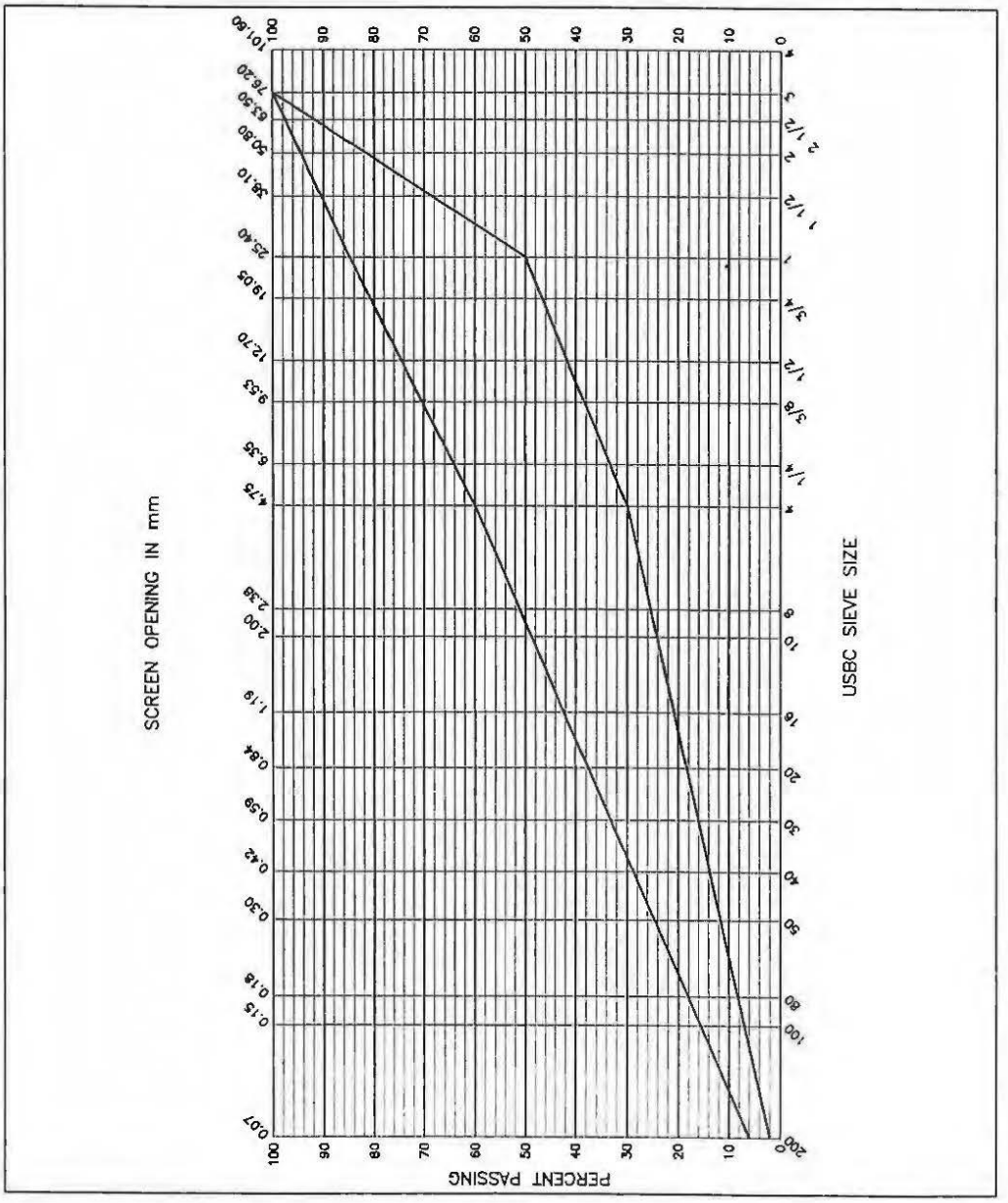
GRADATION LIMITS
GRANULAR BASE COURSE
19mm BASE GRAVEL

DIVISION:	DRAWING NUMBER:
ROADS	100–12
REVISED: DEC. 1999	

The CORPORATION of the
DISTRICT of SUMMERLAND

STANDARD DRAWINGS

NOT TO SCALE



GRADATION LIMITS
GRANULAR SUBBASE COURSE
75mm MINUS GRAVEL

DIVISION: ROADS

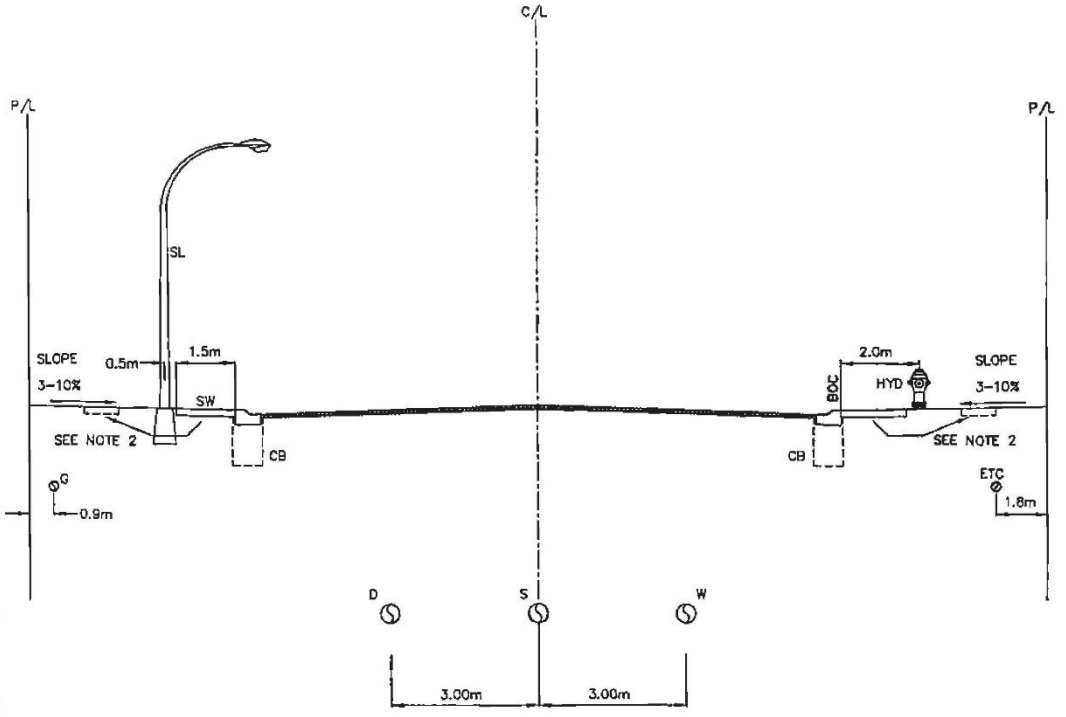
REVISED: DEC. 1999

DRAWING NUMBER: 100–13

The CORPORATION of the DISTRICT of SUMMERLAND

STANDARD DRAWINGS

NOT TO SCALE



LEGEND

	MIN. COVER(m)
C – CABLEVISION	0.6
T – TELEPHONE	0.75
G – GAS	0.6
E – ELECTRICAL	1.05 (SEE NOTE 4)
W – WATER	1.5
S – SANITARY SEWER	1.2
D – STORM SEWER	1.2

HYD – FIRE HYDRANT
P/L – PROPERTY LINE
C/L – CENTER LINE
SW – SIDEWALK
BOC – BACK OF CURB
CB – CATCH BASIN
SL – STREET LIGHT

NOTE:

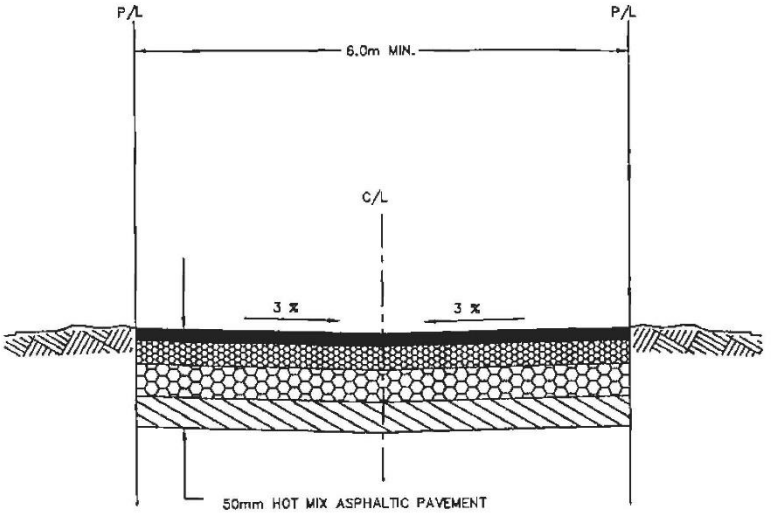
1) REFER TO DESIGN DRAWINGS, SCHEDULE C OF THIS BYLAW, AND THE APPROPRIATE MMCD SECTION FOR DETAILED SPECIFICATIONS.
2) OPTIONAL SIDEWALK LOCATION AS DIRECTED BY THE SUPERINTENDENT OF WORKS & UTILITIES.
3) MINIMUM SEPARATION BETWEEN ELECTRICAL AND TELEPHONE/CABLEVISION IS 0.3m.
4) FOR ELECTRICAL DUCT DETAILS SEE ELECTRICAL DEPARTMENT CONSTRUCTION STANDARDS.

ALIGNMENT OF UTILITIES	DIVISION: ROADS	DRAWING NUMBER: 101
	REVISED: JAN. 1999	

The CORPORATION of the DISTRICT of SUMMERLAND

STANDARD DRAWINGS

NOT TO SCALE



50mm HOT MIX ASPHALTIC PAVEMENT
75mm – 25mm CRUSHED BASE
150mm SELECT GRANULAR SUBBASE
150mm SUBGRADE PREPARATION OR 100mm
ADDITIONAL SELECT GRANULAR SUBBASE

NOTE:

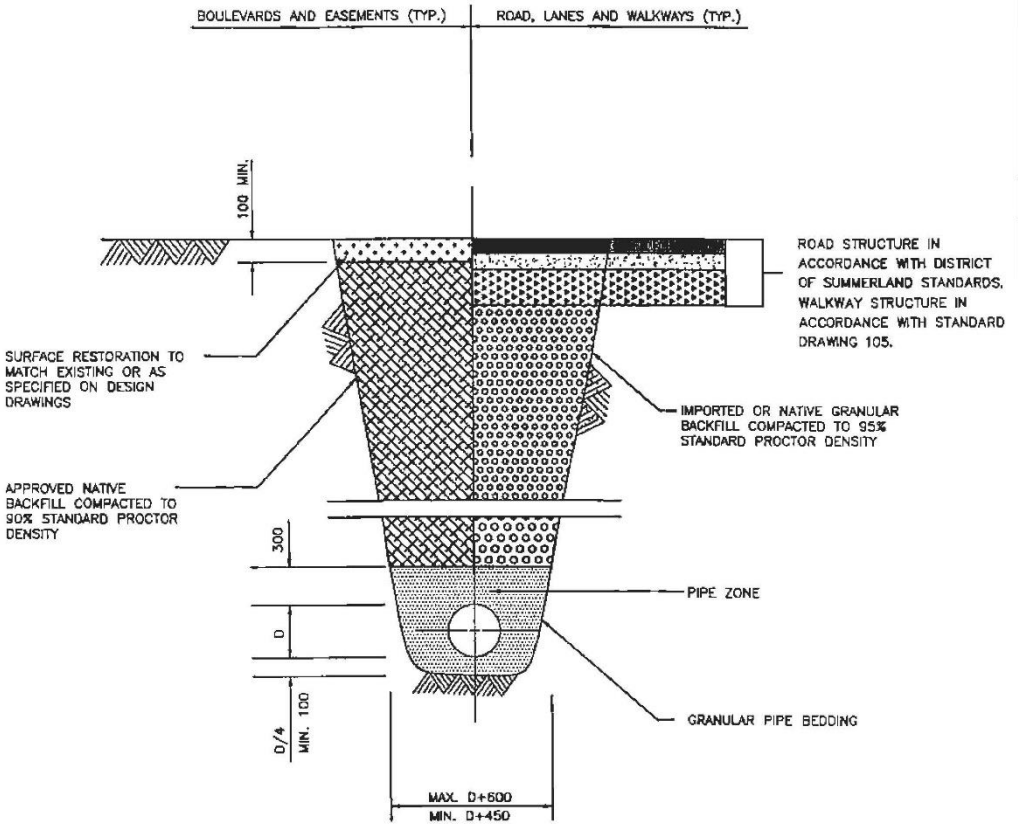
1) REFER TO DESIGN DRAWINGS, SCHEDULE C OF THIS BYLAW, AND THE APPROPRIATE MMCD SECTION FOR DETAILED SPECIFICATIONS.
2) THE STRUCTURAL ROAD ELEMENTS SHOWN ARE THE MINIMUM REQUIREMENTS. THE DESIGN THICKNESS MUST BE INCREASED WHEN POOR SUB-GRADE MATERIAL IS ENCOUNTERED AND BENKELMAN BEAM TESTS MAY BE REQUIRED TO VERIFY DESIGN THICKNESS.

EMERGENCY ACCESS ROADS	DIVISION: ROADS	DRAWING NUMBER: 102
	REVISED: JAN. 1999	

The CORPORATION of the DISTRICT of SUMMERLAND

STANDARD DRAWINGS

NOT TO SCALE



NOTE:

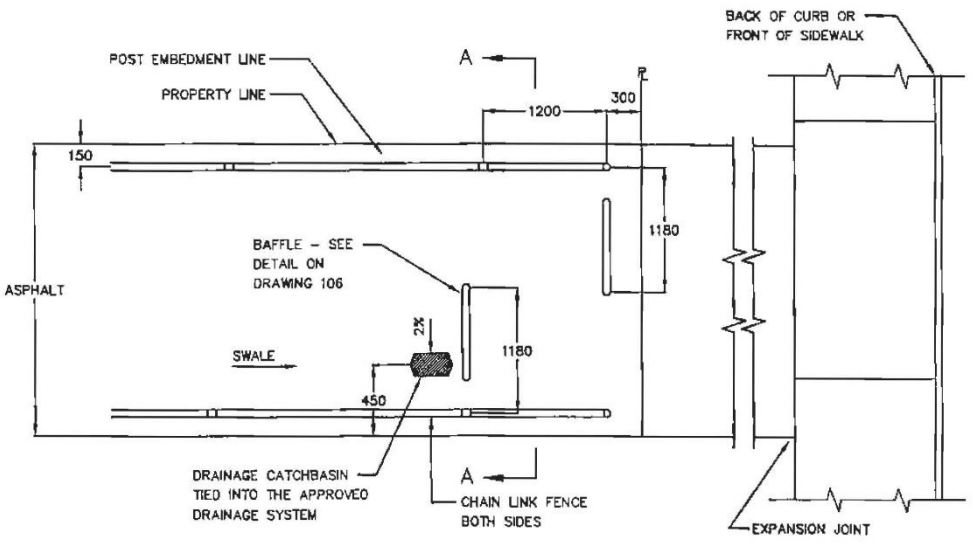
1) REFER TO DESIGN DRAWINGS, MMCD SECTION 02223 AND SCHEDULE C OF THIS BYLAW FOR DETAILED SPECIFICATIONS.
2) TRENCHING TO COMPLY WITH ALL REQUIREMENTS OF THE WORKERS' COMPENSATION BOARD.
3) THIS DRAWING REPLACES MMCD G4 AND G5.

UTILITY TRENCH	DIVISION: ROADS	DRAWING NUMBER: 103
	REVISED: JAN. 1999	

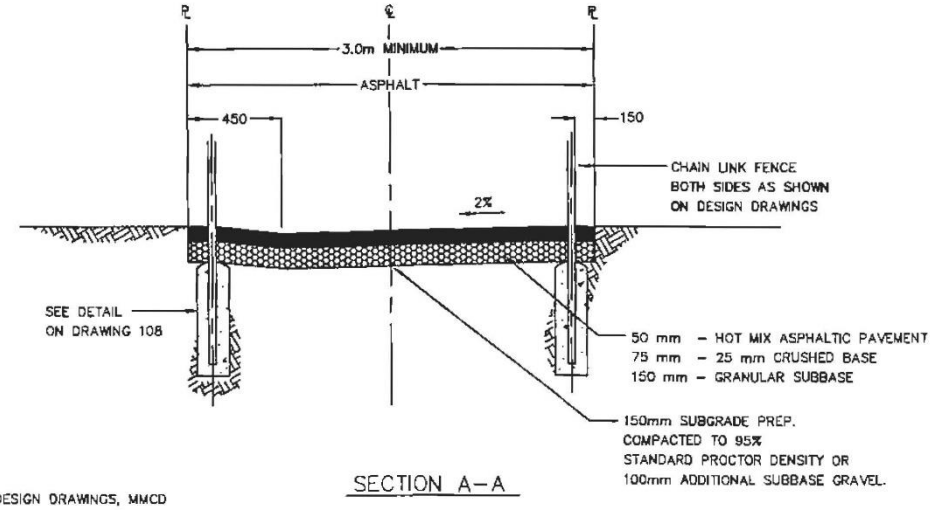
The CORPORATION of the DISTRICT of SUMMERLAND

STANDARD DRAWINGS

NOT TO SCALE



PLAN



SECTION A-A

NOTE:

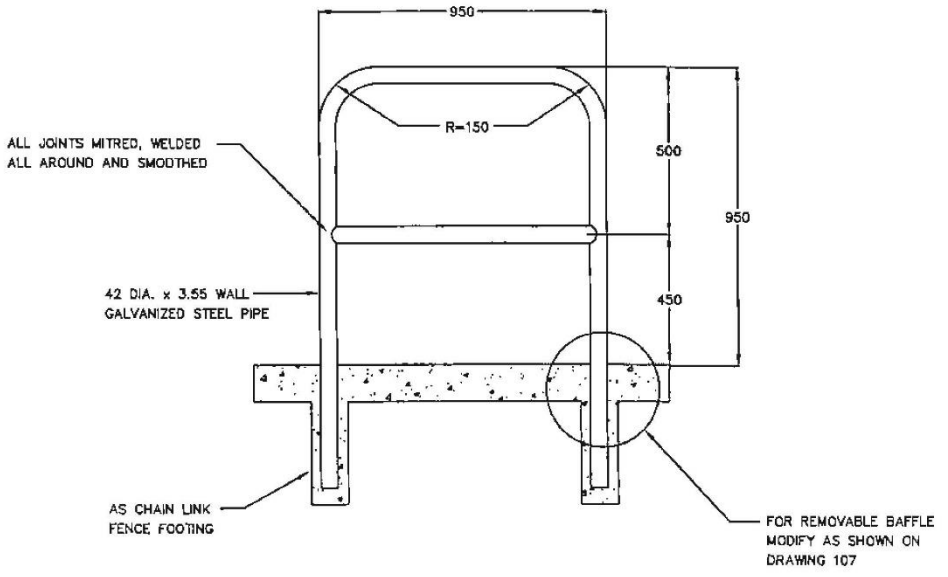
1) REFER TO DESIGN DRAWINGS, MMCD SECTIONS 02523 AND 02831, AND SCHEDULE C OF THIS BYLAW FOR DETAILED SPECIFICATIONS.
2) THIS DRAWING REPLACES MMCD C10.
3) FOR STAIRS WITHIN AN URBAN WALKWAY REFER TO STANDARD DRAWING 112.

URBAN WALKWAY	DIVISION: ROADS	DRAWING NUMBER: 104
	REVISED: JAN. 1999	

The CORPORATION of the DISTRICT of SUMMERLAND

STANDARD DRAWINGS

NOT TO SCALE



BICYCLE BAFFLE DETAIL

NOTE:

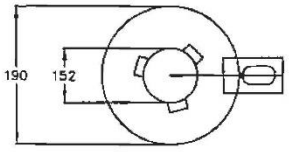
1) ALL COMPONENTS TO BE HOT DIPPED GALVANIZED AFTER FABRICATION.
2) REFER TO DESIGN DRAWINGS, MMCD SECTION D2831, AND SCHEDULE C OF THIS BYLAW FOR DETAILED SPECIFICATIONS.
3) THIS DRAWING REPLACES MMCD C11.

BICYCLE BAFFLE	DIVISION: ROADS	DRAWING NUMBER: 105
	REVISED: JAN. 1999	

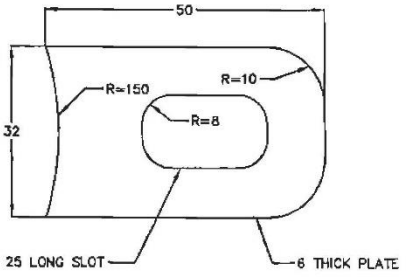
The CORPORATION of the DISTRICT of SUMMERLAND

STANDARD DRAWINGS

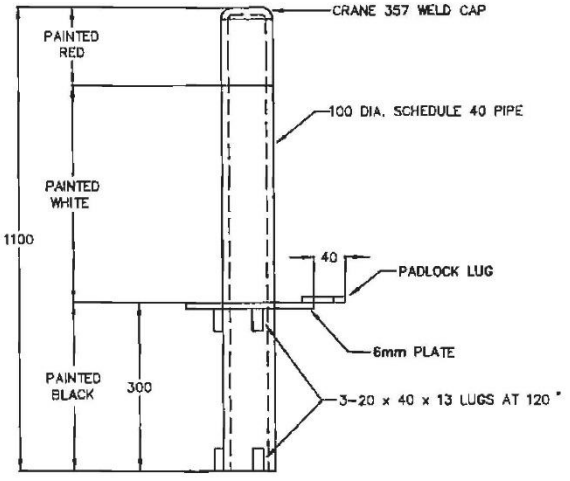
NOT TO SCALE



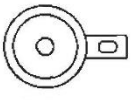
PLAN



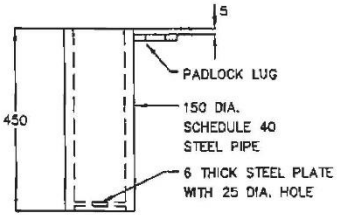
LUGS FOR PADLOCK



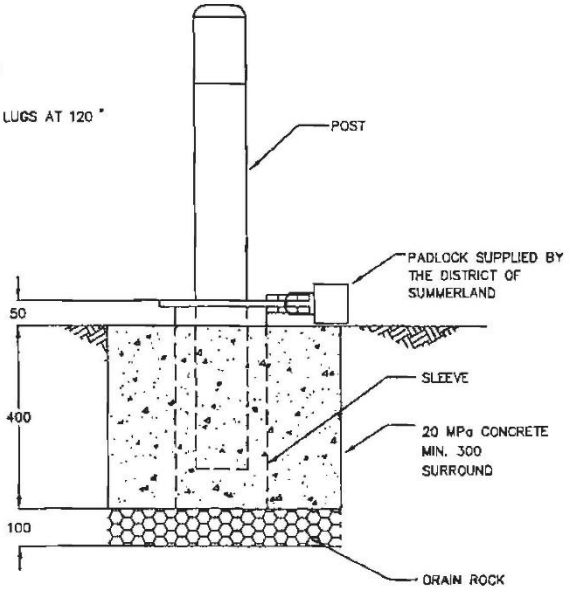
POST



PLAN



SLEEVE



ASSEMBLY

NOTE:

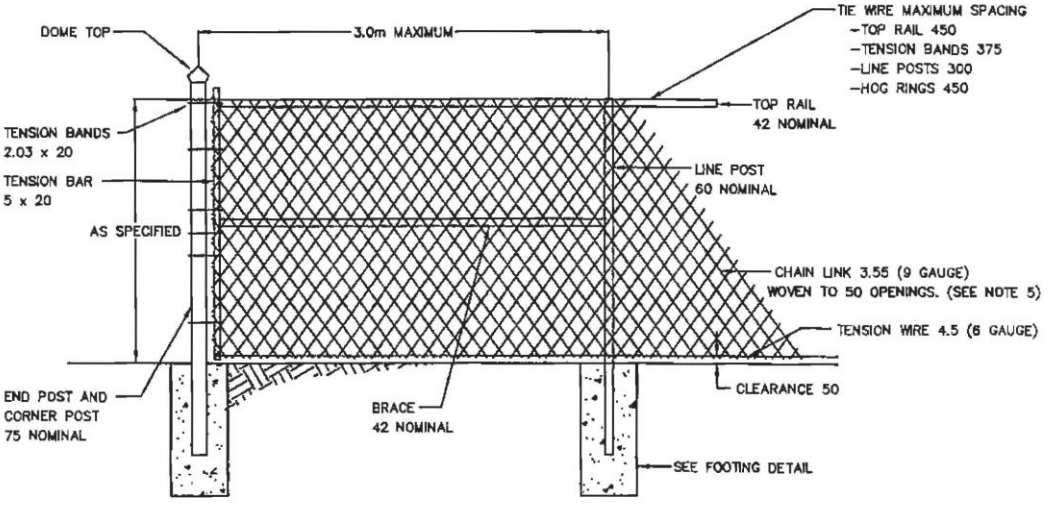
1) ALL COMPONENTS TO BE HOT DIPPED GALVANIZED AFTER FABRICATION.
2) THIS DRAWING REPLACES MMCD C12.
3) REFER TO DESIGN DRAWINGS, MMCD SECTION 02831, AND SCHEDULE C OF THIS BYLAW FOR DETAILED SPECIFICATIONS.

REMOVABLE RESTRICTION POST	DIVISION: ROADS	DRAWING NUMBER: 106
	REVISED: JAN. 1999	

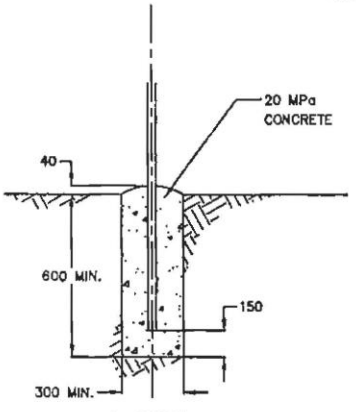
The CORPORATION of the DISTRICT of SUMMERLAND

STANDARD DRAWINGS

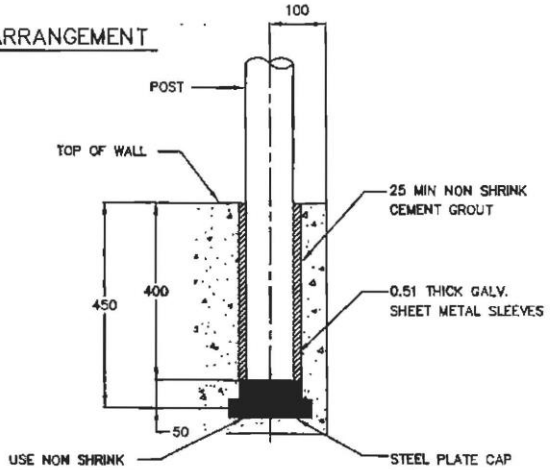
NOT TO SCALE



GENERAL ARRANGEMENT



IN EARTH



ON RETAINING WALL

FOOTING DETAILS

NOTE:

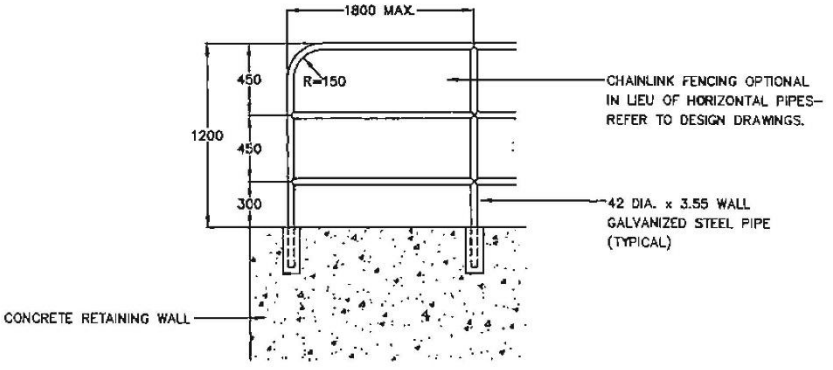
1) FOR PURPOSE OF CLARITY, DETAILS OF TENSION BARS, TENSION BANDS AND MISCELLANEOUS FITTINGS NOT SHOWN ON DRAWINGS.
2) ALL RAILS AND POSTS SCHEDULE 40 PIPE.
3) GATE POSTS AS SPECIFIED (89 NOMINAL MINIMUM).
4) REFER TO DESIGN DRAWINGS, MMCD SECTION 02831 AND SCHEDULE C OF THIS BYLAW FOR DETAILED SPECIFICATIONS.
5) FENCE COLOR AND OPENING SIZE TO BE DETERMINED BY THE SUPERINTENDENT OF WORKS & UTILITIES PRIOR TO INSTALLATION.
6) THIS DRAWING REPLACES MMCD C13.

CHAIN LINK FENCE	DIVISION: ROADS	DRAWING NUMBER: 107
	REVISED: JAN. 1999	

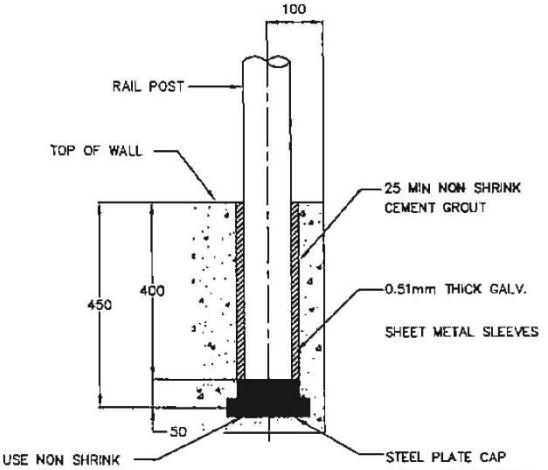
The CORPORATION of the DISTRICT of SUMMERLAND

STANDARD DRAWINGS

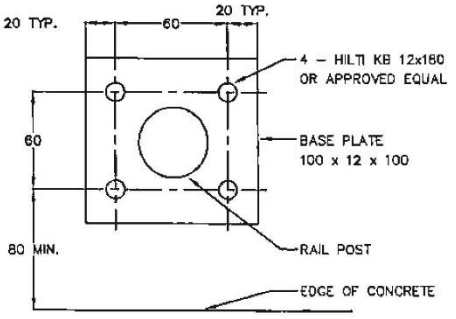
NOT TO SCALE



GENERAL ARRANGEMENT



EMBEDDED MOUNTING



ATTACHED MOUNTING

CONNECTION DETAILS

NOTE:

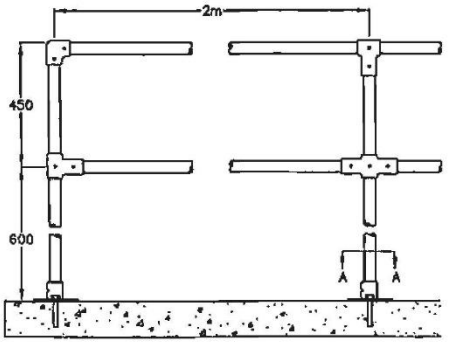
1) ALL JOINTS MITRED, WELDED ALL AROUND AND SMOOTHED.
2) ALL COMPONENTS TO BE HOT DIPPED GALVANIZED AFTER FABRICATION.
3) REFER TO DESIGN DRAWINGS, MMCD SECTION D2831 AND SCHEDULE C OF THIS BYLAW FOR DETAILED SPECIFICATIONS.
4) THIS DRAWING REPLACES MMCD C14.

HANDRAIL ON CONCRETE RETAINING WALL	DIVISION: ROADS	DRAWING NUMBER: 108
	REVISED: JAN. 1999	

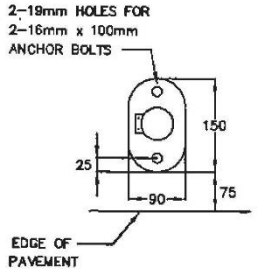
The CORPORATION of the DISTRICT of SUMMERLAND

STANDARD DRAWINGS

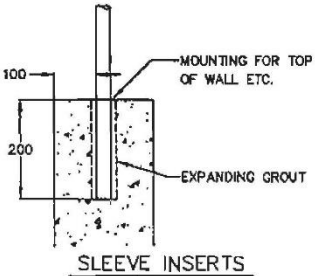
NOT TO SCALE



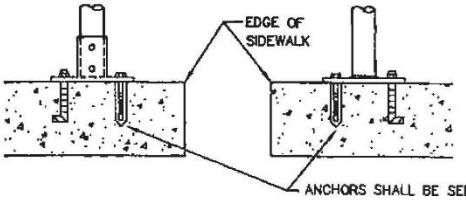
SLIP–ON FENCE



SECTION A–A



SLEEVE INSERTS



ANCHOR FLANGE

ANCHORS SHALL BE SELFDRILLING OR SMOOTH WALL, INTERNALLY THREADED, INTERNAL PLUG EXPANSION TYPE.

ANCHOR PLATE

NOTE:

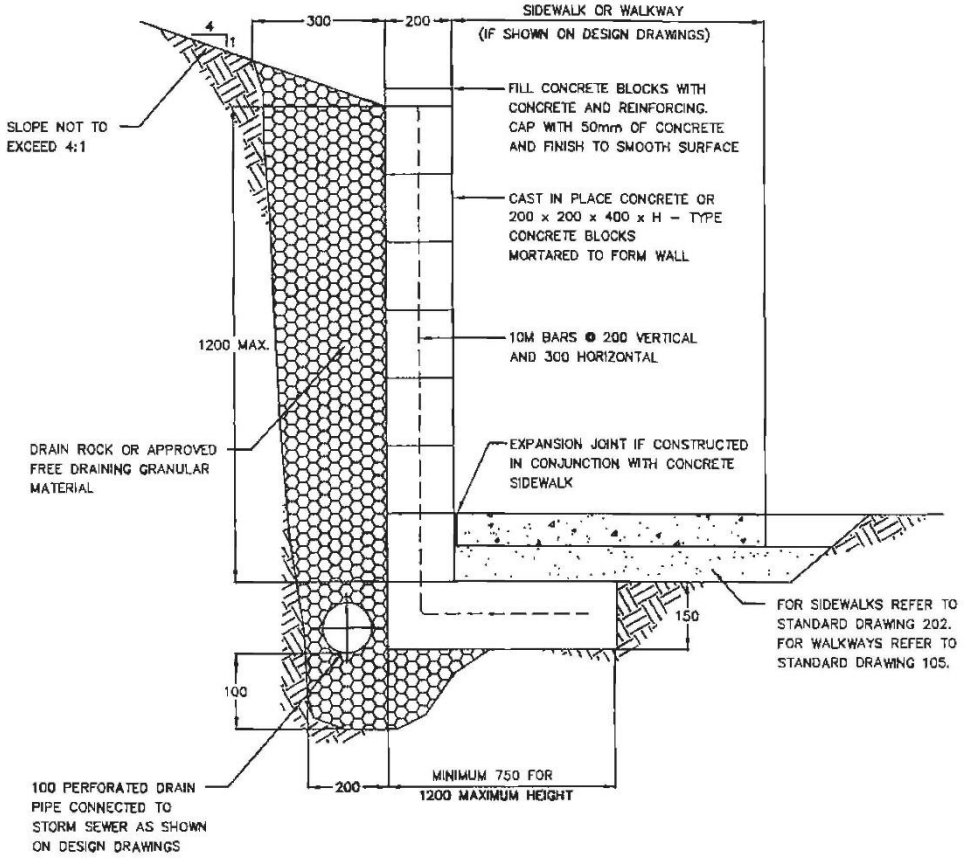
1) ALL POSTS AND ROLLS TO BE 48mm O.D. TO A.S.T.M. A120 "STANDARD" WEIGHT (SCHEDULE 40) GALVANIZED PIPE.
2) WELDS SHOULD BE FULL LOAD.
3) WELDING SHALL HAVE ALL ROUGH EDGES GROUND SMOOTH FOLLOWED IMMEDIATELY BY TWO APPLICATIONS OF A ZINC RICH COATING CONFORMING TO THE CGSB 1–GP–181 M.
4) PIPE FITTINGS SHALL BE GALVANIZED MALLEABLE IRON WITH CORE HARDENED SAL–SCREWS CONFORMING TO A.S.T.M. A 47 GRADE 32510 AND A.S.T.M. A 153 CLASS A (1610 g/sq.m OF ZINC COATING)

SIDEWALK FENCE WELDED OR SLIP ON	DIVISION: ROADS	DRAWING NUMBER: 109
	REVISED: JAN. 1999	

The CORPORATION of the DISTRICT of SUMMERLAND

STANDARD DRAWINGS

NOT TO SCALE



NOTE:

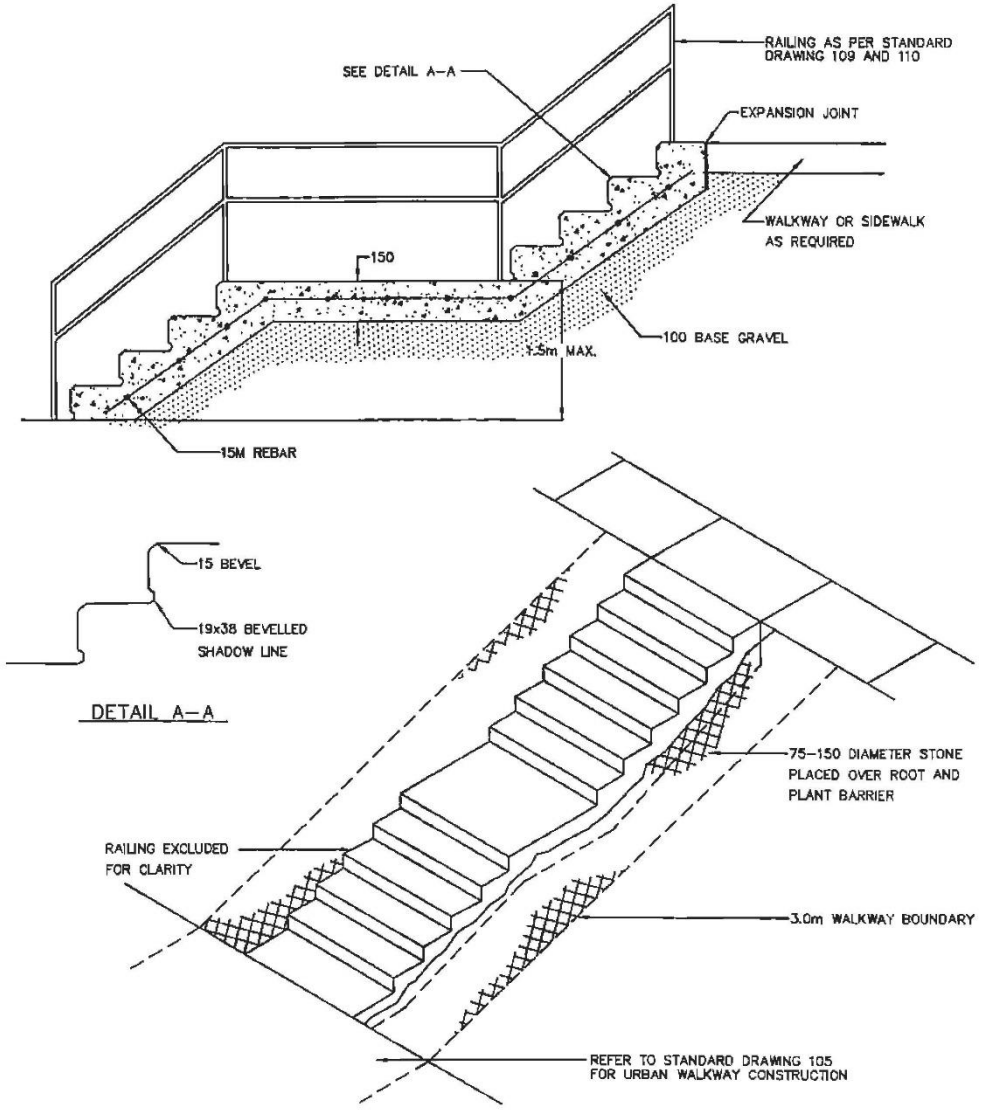
1) TYPE AND FINISH OF CONCRETE BLOCKS AS SHOWN ON DESIGN DRAWINGS
2) NOT TO BE USED FOR RETAINING WALLS SUBJECT TO SURCHARGE ON RETAINED MATERIAL.
3) REFER TO DESIGN DRAWINGS, MMCD SECTIONS 03200 AND 03300 AND SCHEDULE C OF THIS BYLAW FOR DETAILED SPECIFICATIONS.
4) THIS DRAWING REPLACES MMCD C15.

CONCRETE OR CONCRETE BLOCK RETAINING WALL	DIVISION: ROADS	DRAWING NUMBER: 110
	REVISED: JAN. 1999	

The CORPORATION of the DISTRICT of SUMMERLAND

STANDARD DRAWINGS

NOT TO SCALE



NOTE:

1) REFER TO DESIGN DRAWINGS, MMCD 3300, AND SCHEDULE C OF THIS BYLAW FOR DETAILED SPECIFICATIONS.

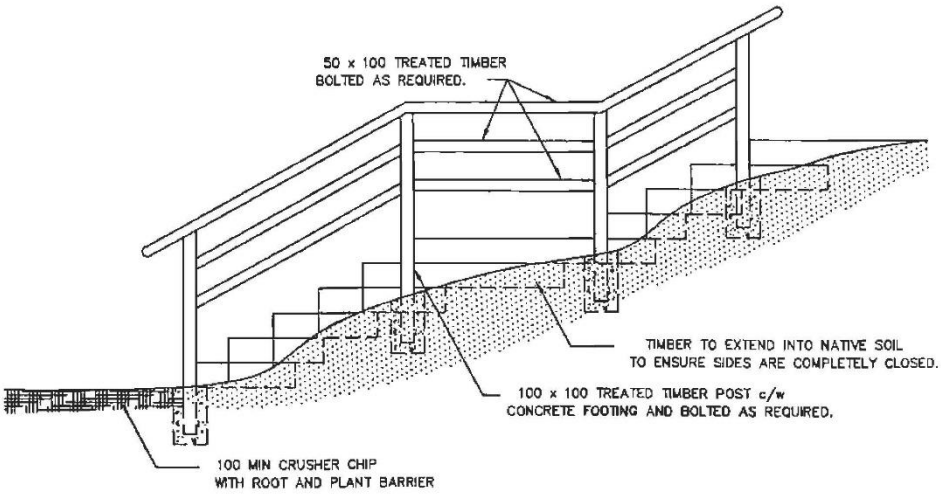
2) DETAILS OF RAILING TO BE FINALIZED AT TIME OF SUBDIVISION AS DETERMINED BY THE SUPERINTENDENT OF WORKS & UTILITIES.

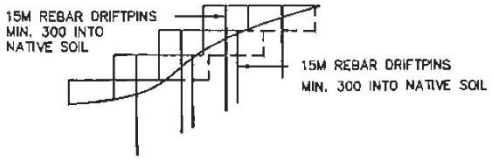
REINFORCED CONCRETE STAIRS	DIVISION: ROADS	DRAWING NUMBER: 111
	REVISED: JAN. 1999	

The CORPORATION of the DISTRICT of SUMMERLAND

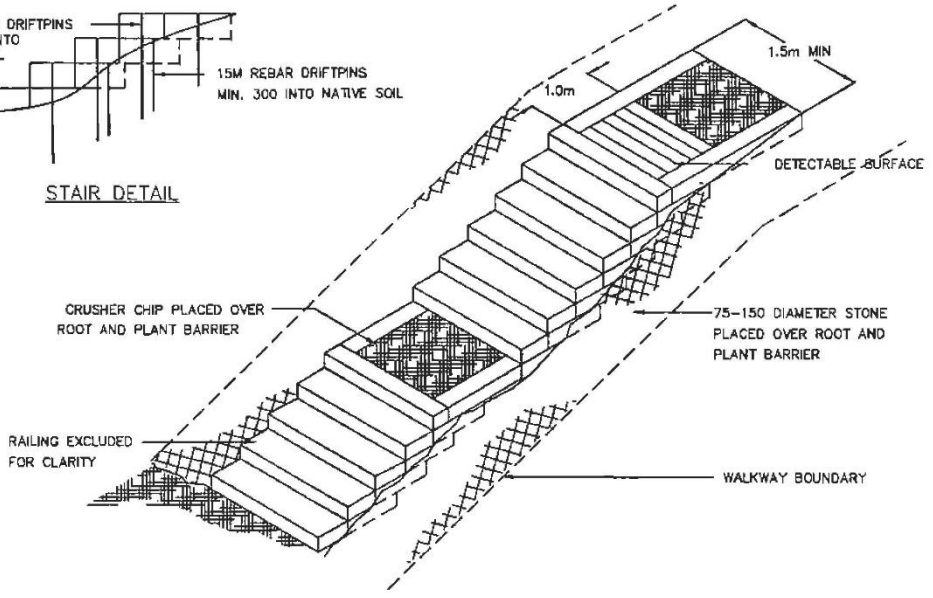
STANDARD DRAWINGS

NOT TO SCALE





STAIR DETAIL



NOTE:

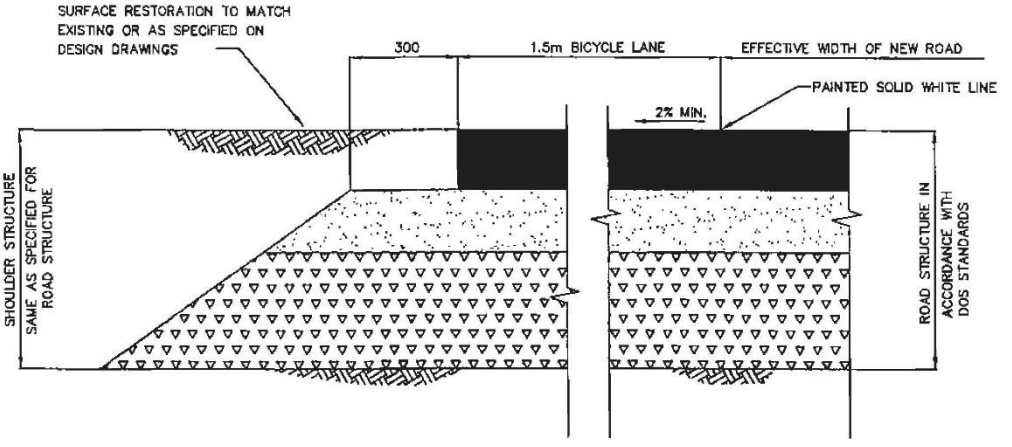
1) REFER TO DESIGN DRAWINGS AND SCHEDULE C OF THIS BYLAW FOR DETAILED SPECIFICATIONS.

NON URBAN WALKWAY	DIVISION: ROADS	DRAWING NUMBER: 112
	REVISED: JAN. 1999	

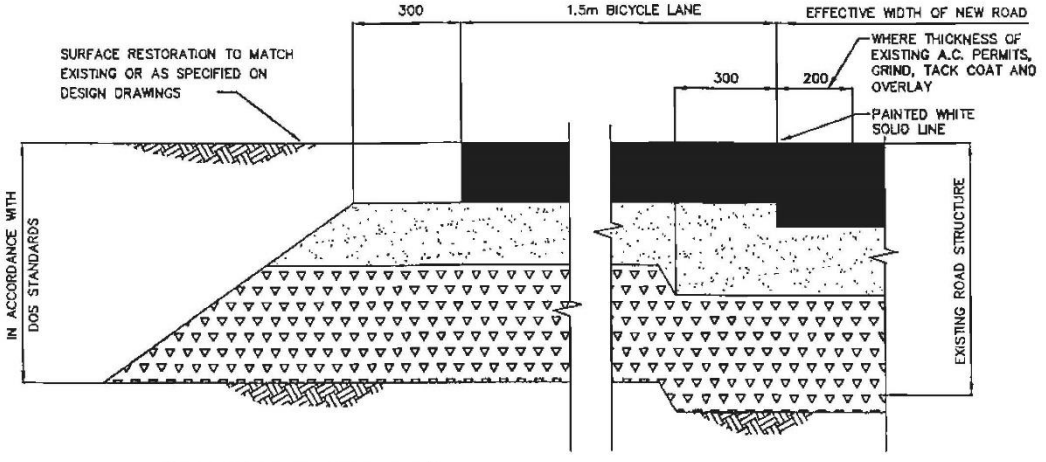
The CORPORATION of the DISTRICT of SUMMERLAND

STANDARD DRAWINGS

NOT TO SCALE



BICYCLE LANE ADJACENT TO NEW A.C. ROAD



BICYCLE LANE ADJACENT TO EXISTING A.C. ROAD

NOTE:

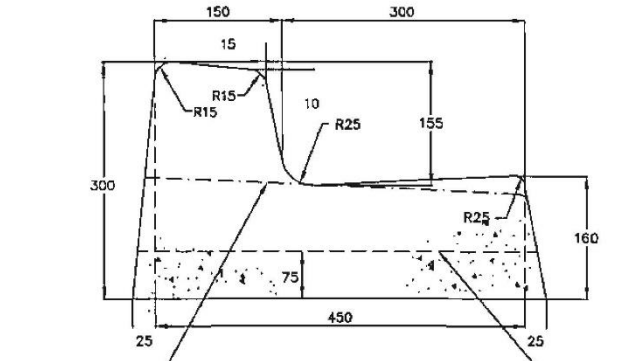
1) REFER TO DESIGN DRAWINGS AND MMCD SECTIONS 02233, 02234, 02235 AND 02512, AND SCHEDULE C OF THIS BYLAW FOR DETAILED SPECIFICATIONS.
2) THIS DRAWING REPLACES MMCD R1.

BICYCLE LANE	DIVISION: ROADS	DRAWING NUMBER: 113
	REVISED: JAN. 1999	

The CORPORATION of the DISTRICT of SUMMERLAND

STANDARD DRAWINGS

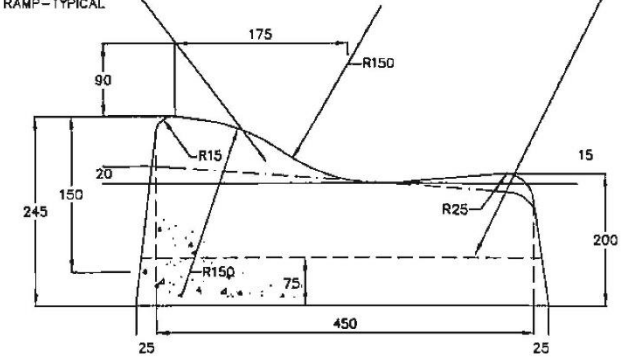
NOT TO SCALE



TYPE 1
BARRIER CURB
WITH GUTTER

SECTION AT WHEELCHAIR RAMP–TYPICAL

DEPTH OF CONTROL JOINTS



TYPE 2
ROLLOVER CURB
WITH GUTTER

NOTE:

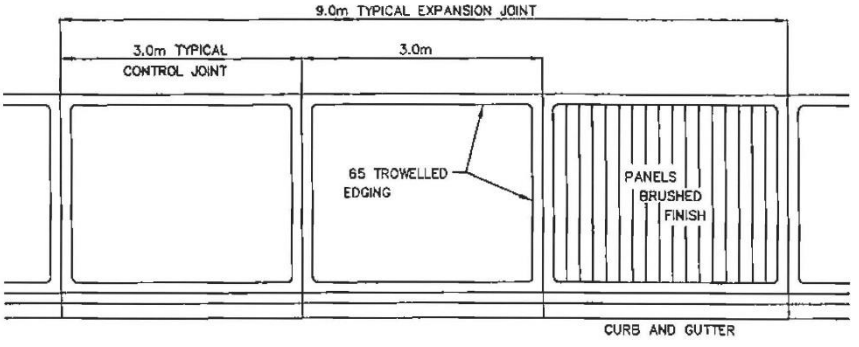
1) REFER TO DESIGN DRAWINGS, MMCD 02523 AND SCHEDULE C OF THIS BYLAW FOR DETAILED SPECIFICATIONS.
2) REFER TO STANDARD DRAWINGS 202 AND 203 FOR INSTALLATION DETAILS.
3) THIS DRAWING REPLACES MMCD C4 AND C5.

CURB AND GUTTER	DIVISION: C & G	DRAWING NUMBER: 201
	REVISED: JAN. 1999	

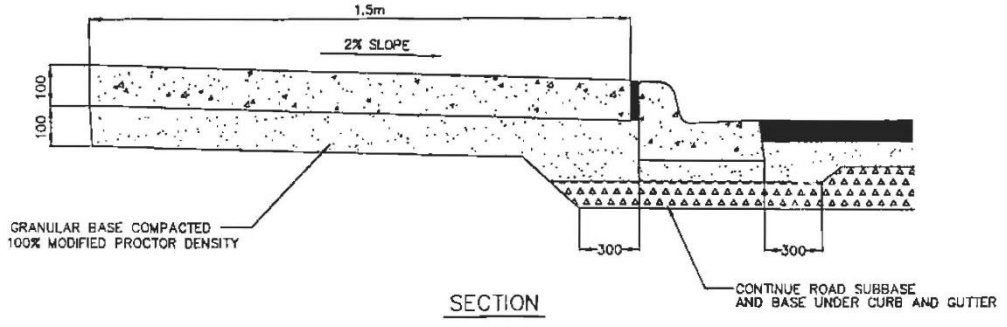
The CORPORATION of the DISTRICT of SUMMERLAND

STANDARD DRAWINGS

NOT TO SCALE



PLAN



SECTION

NOTE:

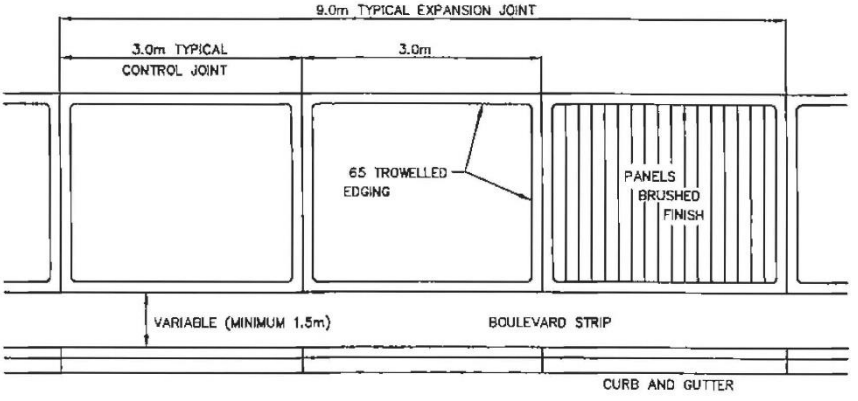
1) REFER TO CONTRACT DRAWINGS, MMCD 02523 AND SCHEDULE C OF THIS BYLAW FOR DETAILED SPECIFICATIONS.
2) THIS DRAWING REPLACES MMCD C1.

SIDEWALK (NO BOULEVARD STRIP)	DIVISION: C & G	DRAWING NUMBER: 202
	REVISED: JAN. 1999	

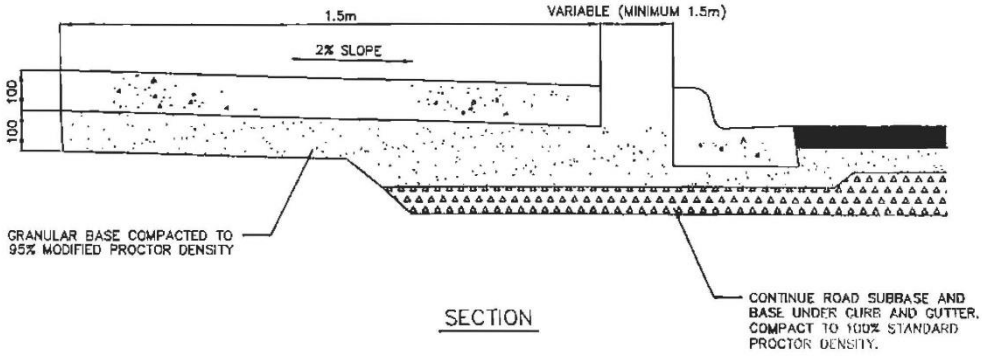
The CORPORATION of the DISTRICT of SUMMERLAND

STANDARD DRAWINGS

NOT TO SCALE



PLAN



SECTION

NOTE:

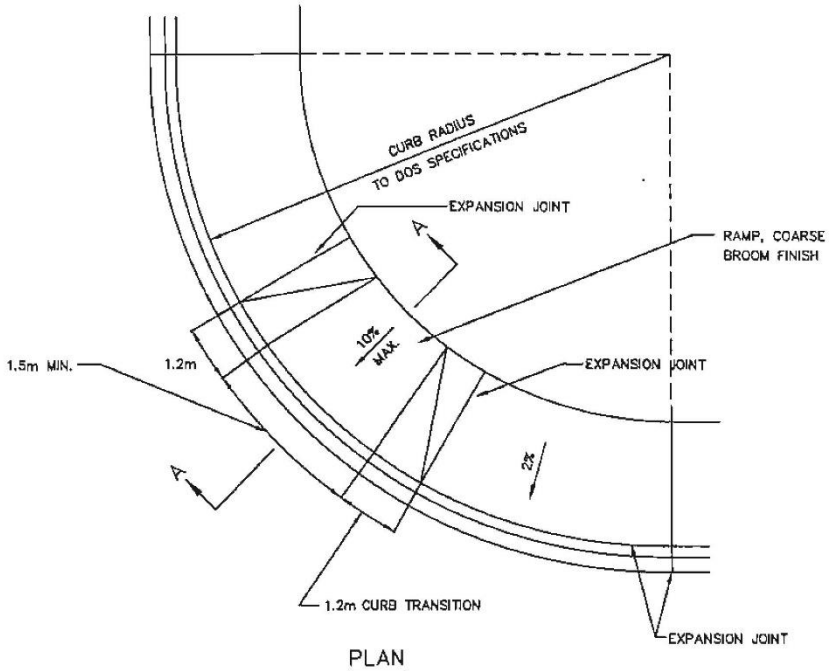
1) REFER TO DESIGN DRAWINGS, MMCD 02523 AND SCHEDULE C OF THIS BYLAW FOR DETAILED SPECIFICATIONS.
2) THIS DRAWINGS REPLACES MMCD C2 AND C3.

SIDEWALK (WITH BOULEVARD STRIP)	DIVISION: C & G	DRAWING NUMBER: 203
	REVISED: NOV. 1998	

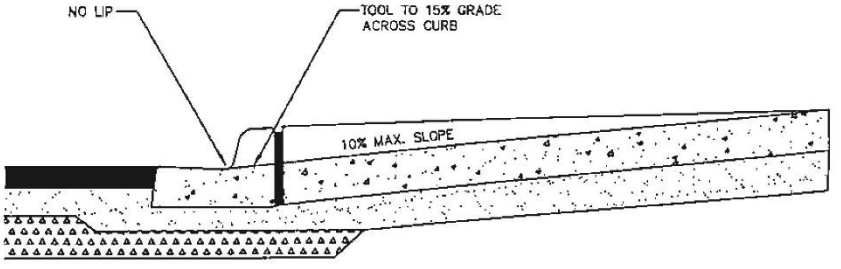
The CORPORATION of the DISTRICT of SUMMERLAND

STANDARD DRAWINGS

NOT TO SCALE



PLAN



SECTION A–A

NOTE:

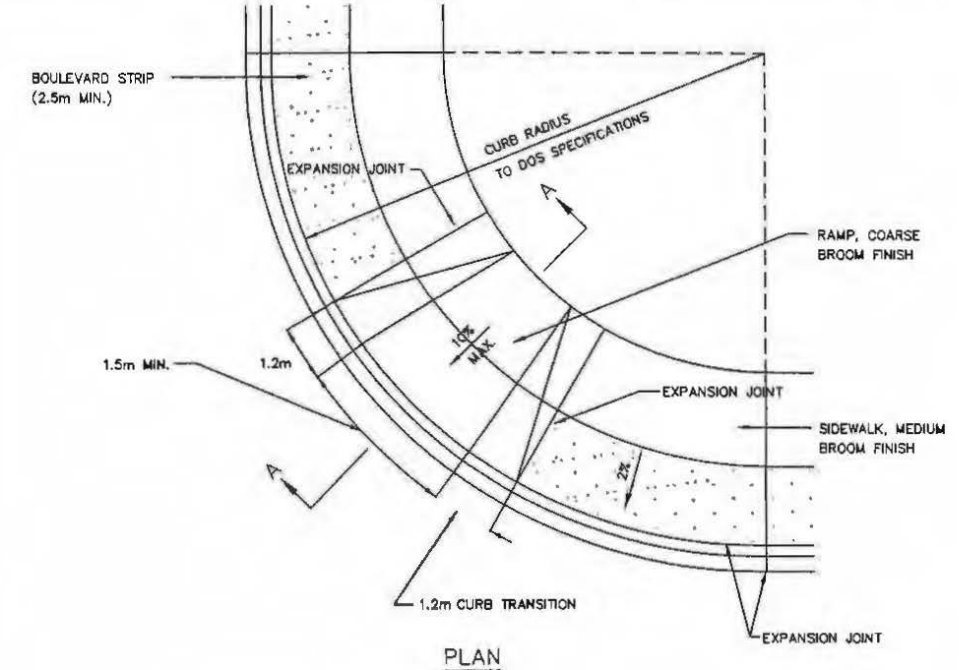
1) REFER TO DESIGN DRAWINGS, MMCD 2523 AND SCHEDULE C OF THIS BYLAW FOR DETAILED SPECIFICATIONS.
2) REFER TO STANDARD DRAWINGS 202 AND 203 FOR INSTALLATION DETAILS.
3) THIS DRAWING REPLACES MMCD C9.

WHEELCHAIR RAMP (NO BOULEVARD STRIP)	DIVISION: C & G	DRAWING NUMBER: 204
	REVISED: JAN. 1999	

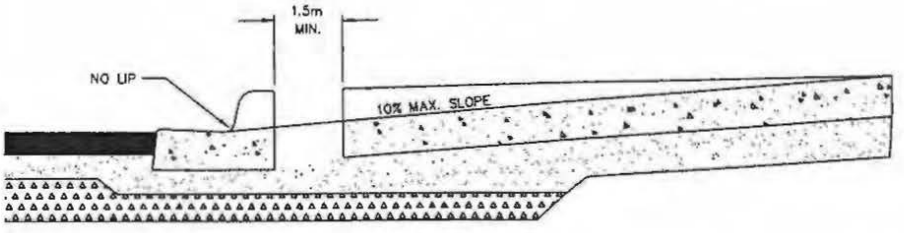
The CORPORATION of the DISTRICT of SUMMERLAND

STANDARD DRAWINGS

NOT TO SCALE



PLAN



SECTION A–A

NOTE:

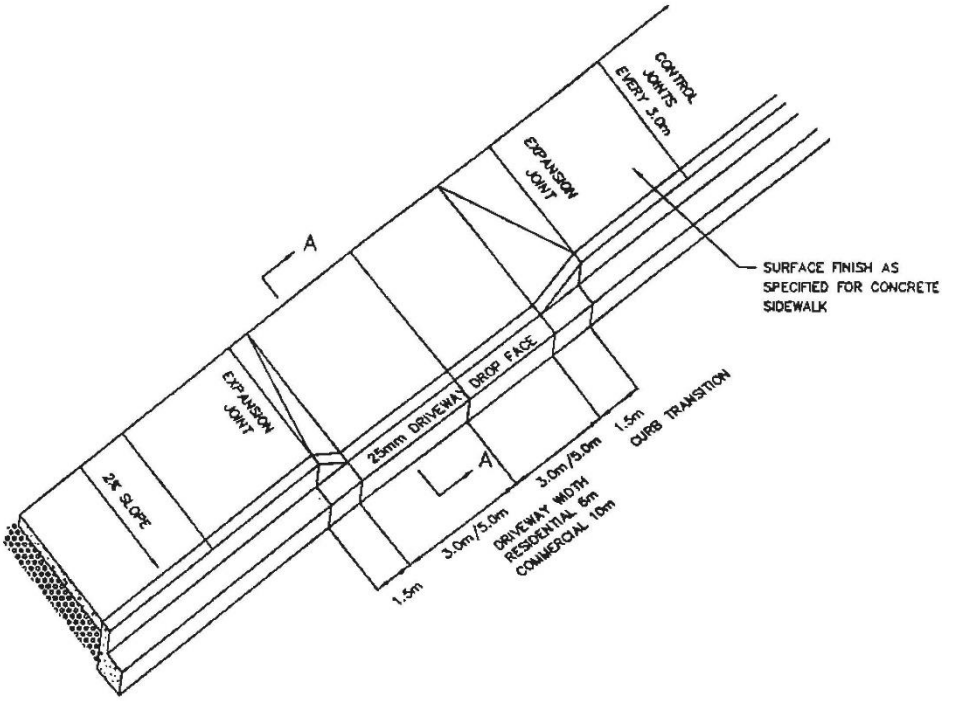
1) REFER TO DESIGN DRAWINGS, MMCD 2523 AND SCHEDULE C OF THIS BYLAW FOR DETAILED SPECIFICATIONS.
2) REFER TO STANDARD DRAWINGS 202 AND 203 FOR INSTALLATION DETAILS.
3) THIS DRAWING REPLACES MMCD C9.

WHEELCHAIR RAMP (WITH BOULEVARD STRIP)	DIVISION: C & G REVISED: JAN. 1999	DRAWING NUMBER: 205

The CORPORATION of the DISTRICT of SUMMERLAND

STANDARD DRAWINGS

NOT TO SCALE



SECTION A–A

NOTE:

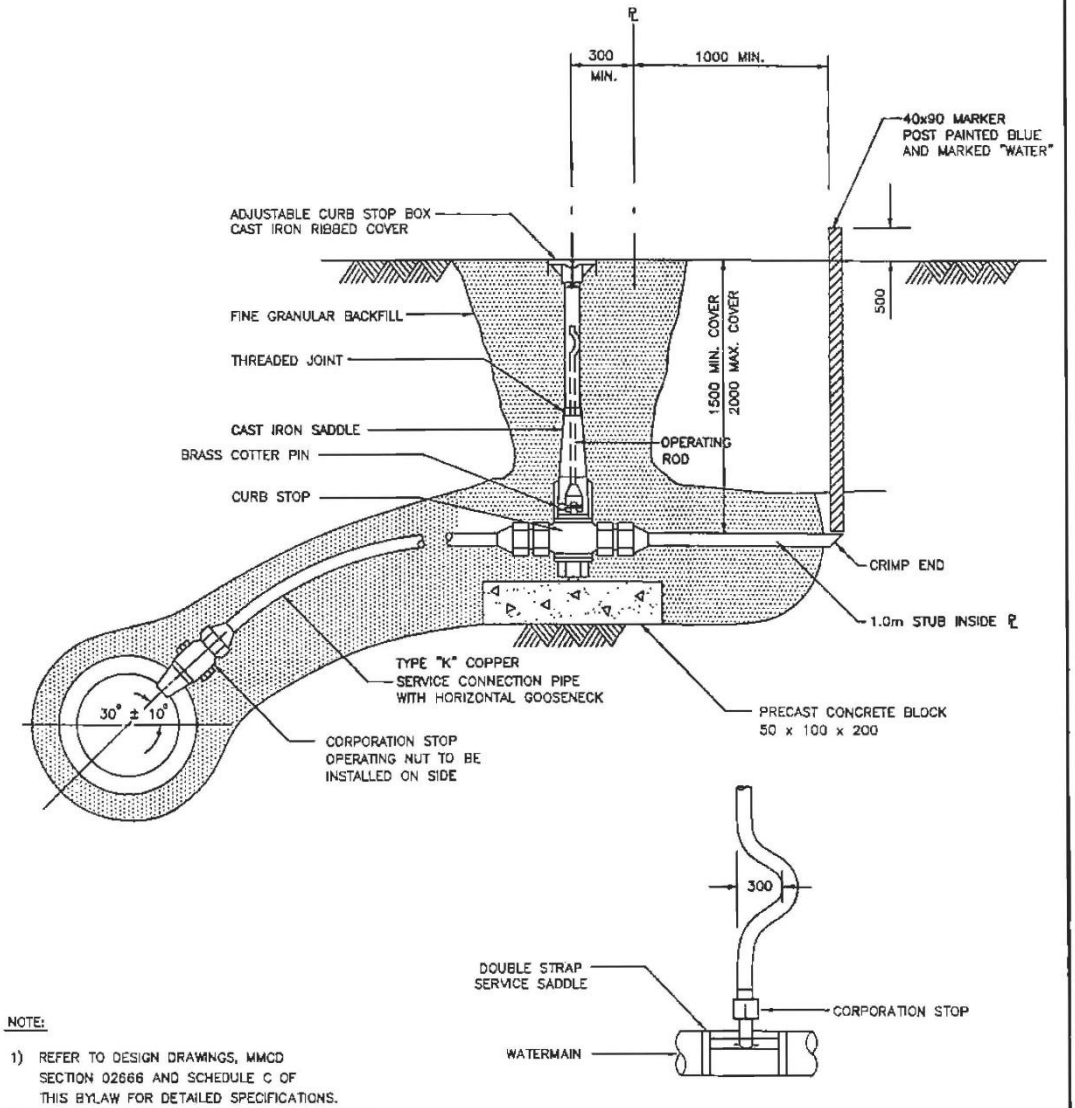
1) REFER TO DESIGN DRAWING, MMCD 2523 AND SCHEDULE C FOR DETAILED SPECIFICATIONS.
2) REFER TO STANDARD DRAWINGS 202 AND 203 FOR INSTALLATION DETAILS.
3) THIS DRAWING REPLACES MMCD C7.

DRIVEWAY CROSSINGS FOR BARRIER CURBS	DIVISION: C & G	DRAWING NUMBER: 206
	REVISED: JAN. 1999	

The CORPORATION of the DISTRICT of SUMMERLAND

STANDARD DRAWINGS

NOT TO SCALE



GOOSENECK DETAIL

NOTE:

1) REFER TO DESIGN DRAWINGS, MMCD SECTION 02666 AND SCHEDULE C OF THIS BYLAW FOR DETAILED SPECIFICATIONS.
2) THIS DETAIL FOR 19mm & 50mm SERVICES ONLY.
3) THIS DRAWING REPLACES MMCD W2a AND W2b.

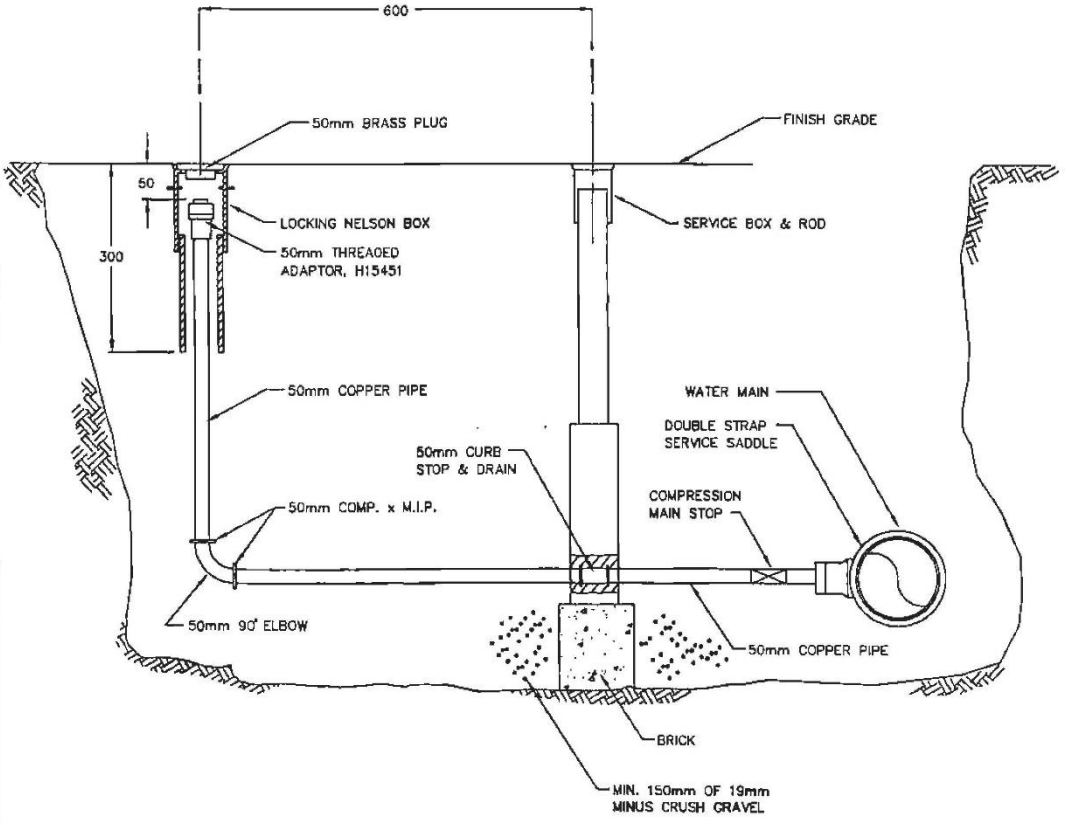
19mm – 25mm WATER SERVICE CONNECTION

DIVISION:	DRAWING NUMBER:
WATER	301
REVISED: JAN. 1999	

The CORPORATION of the DISTRICT of SUMMERLAND

STANDARD DRAWINGS

NOT TO SCALE



NOTE:

1) REFER TO DESIGN DRAWINGS, MMCD SECTION 02665 AND SCHEDULE C OF THIS BYLAW FOR DETAILED SPECIFICATIONS.
2) THIS DRAWING REPLACES MMCD W8.

SELF-DRAIN STANDPIPE BLOW-OFF

DIVISION: WATER

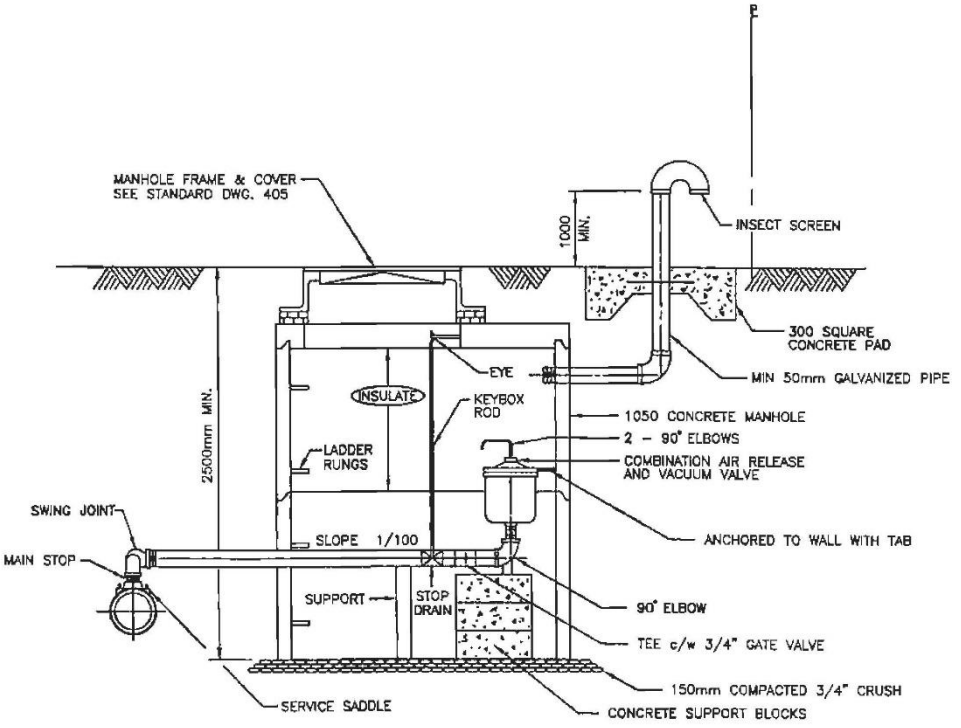
REVISED: JAN. 1999

DRAWING NUMBER: 302

The CORPORATION of the DISTRICT of SUMMERLAND

STANDARD DRAWINGS

NOT TO SCALE



NOTE:

1) REFER TO DESIGN DRAWINGS, MMCD SECTION 02666 AND SCHEDULE C OF THIS BYLAW FOR DETAILED SPECIFICATIONS.
2) THIS DRAWING REPLACES MMCD W6 AND W7.
3) INSULATION – STYROFOAM PEANUTS INSIDE NYLON PERFORATED SACKS.
4) ALL PIPE TO BE BRASS OR COPPER.
5) VENT TO BE GALVANIZED.

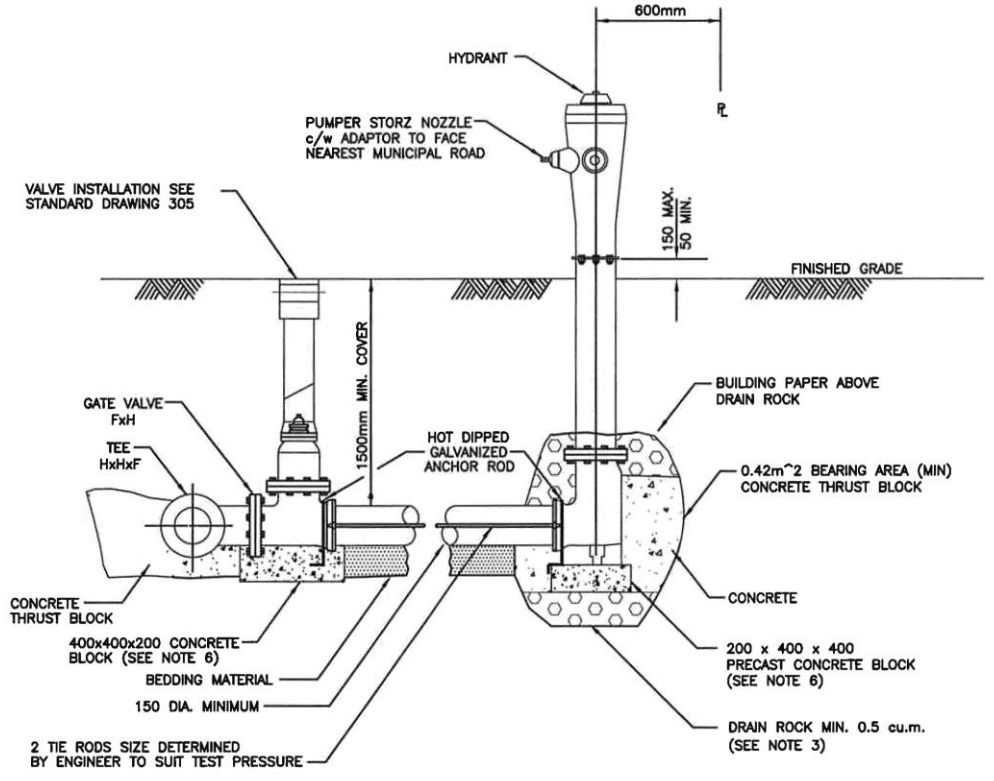
AIR VALVE ASSEMBLY	DIVISION: WATER	DRAWING NUMBER: 303
	REVISED: JAN. 1999	

Bylaw 2000-068 amended Drawing Number 304 (February 26, 2001):

The CORPORATION of the DISTRICT of SUMMERLAND

STANDARD DRAWINGS

NOT TO SCALE



NOTE:

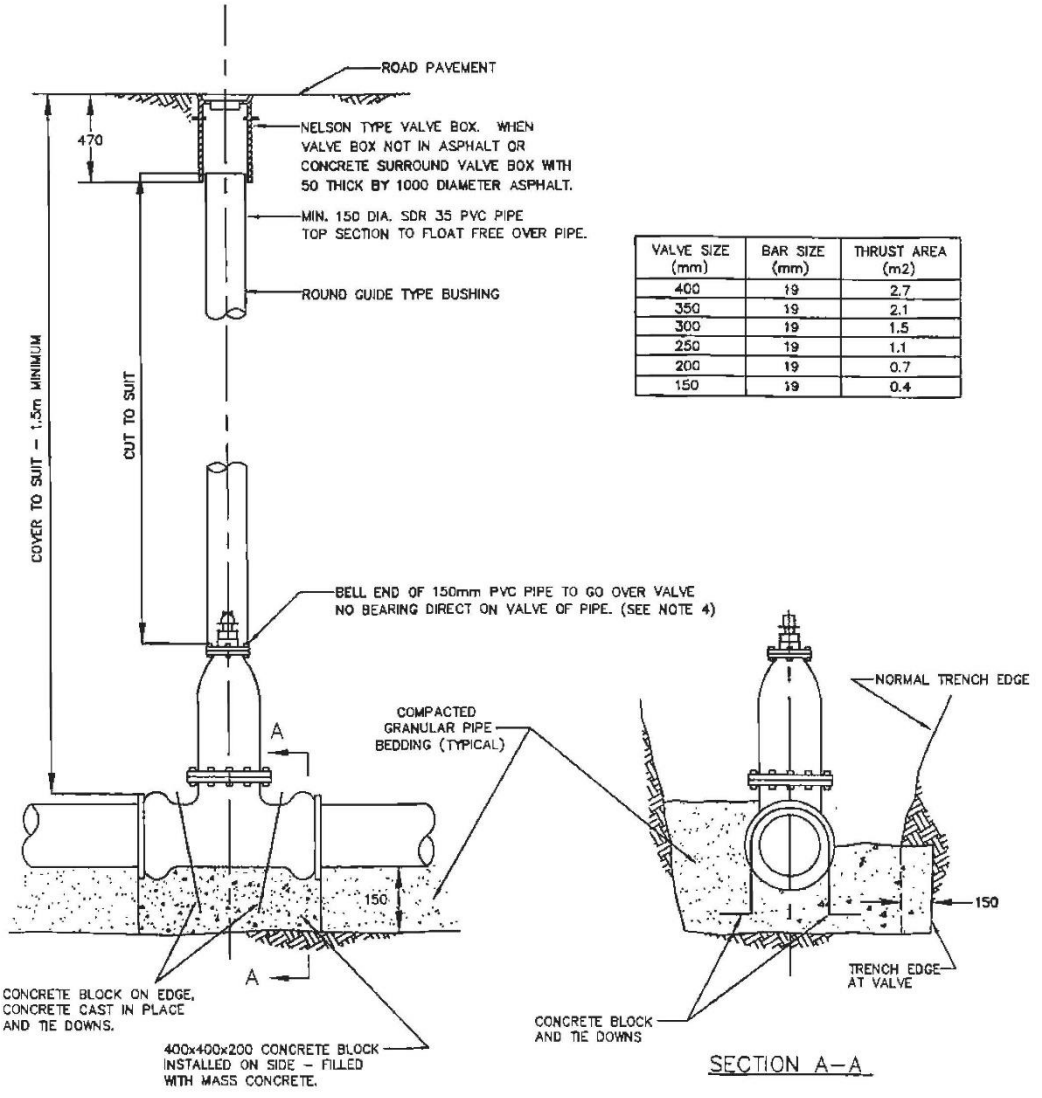
1) REFER TO DESIGN DRAWINGS, MMCD 02666 AND SCHEDULE C OF THIS BYLAW FOR DETAILED SPECIFICATIONS.
2) HYDRANT TO BE PAINTED RED WITH FLUORESCENT WHITE BONNET.
3) FOR INSTALLATIONS WHERE WATER TABLE (AT SEASONAL HIGH) IS ABOVE BASE OF DRAIN ROCK, INSERT THREADED PLUGS IN DRAIN HOLES AND SUBSTITUTE GRANULAR PIPE BEDDING FOR DRAIN ROCK.
4) THIS DRAWING REPLACES MMCD W4.
5) ALL NUTS AND BOLTS TO BE STAINLESS STEEL.
6) BLOCK TO BE INSTALLED ON IT'S SIDE AND FILLED WITH CONCRETE. 6mil POLY REQUIRED BETWEEN CONCRETE AND CAST FITTING.

FIRE HYDRANT INSTALLATION	DIVISION: WATER	DRAWING NUMBER: 304
	REVISED: JAN. 1999	

The CORPORATION of the DISTRICT of SUMMERLAND

STANDARD DRAWINGS

NOT TO SCALE



VALVE SIZE (mm)	BAR SIZE (mm)	THRUST AREA (m2)
400	19	2.7
350	19	2.1
300	19	1.5
250	19	1.1
200	19	0.7
150	19	0.4

NOTE:

1) REFER TO DESIGN DRAWINGS, MMCD 02666 AND SCHEDULE C OF THIS BYLAW FOR DETAILED SPECIFICATIONS.
2) THIS DRAWING REPLACES MMCD W3.
3) WHERE DEPTH OF BURY IS GREATER THAT 2.0m, A 20mm VALVE ACTUATOR EXTENSION ROD MUST BE INSTALLED.
4) WHERE VALVE IS LARGER THAN 150mm, A 150x200 SDR 28 PVC ADAPTOR MUST BE INSTALLED TO COVER THE STUFFING BOX OF THE VALVE.

GATE VALVE INSTALLATION

DIVISION: WATER

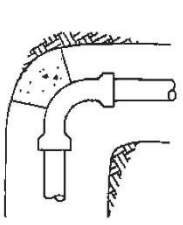
REVISED: JAN. 1999

DRAWING NUMBER: 305

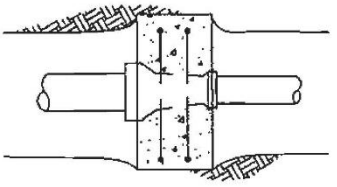
The CORPORATION of the DISTRICT of SUMMERLAND

STANDARD DRAWINGS

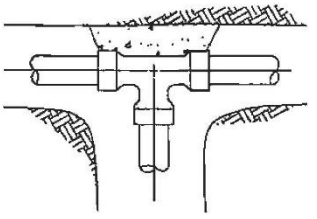
NOT TO SCALE



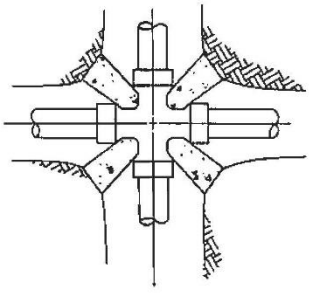
90° BENDS



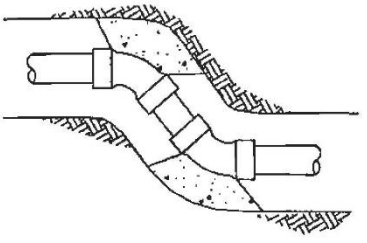
REDUCER



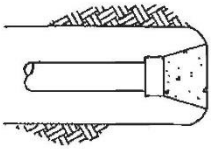
TEE



CROSSES

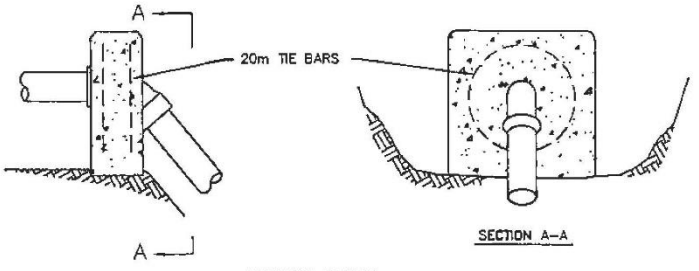


11¼°, 22½°, 45° BENDS



END CAPS

GENERAL ARRANGEMENTS – PLAN VIEWS



VERTICAL BENDS

GENERAL ARRANGEMENTS – ELEVATIONS

NOTE:

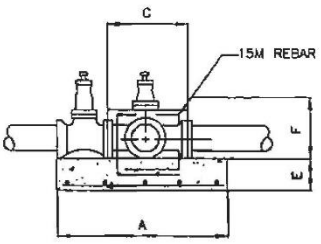
1) REFER TO DESIGN DRAWINGS, MMCD 02666, 03300 AND SCHEDULE C FOR DETAILED SPECIFICATIONS.
2) PLACE 6 mil POLYETHYLENE BETWEEN CONCRETE AND FITTINGS.
3) THRUST BLOCK SIZING BASED ON SOIL BEARING TO BE DETERMINED BY OWNERS ENGINEER.
4) THIS DRAWING REPLACES MMCD W1.

THRUST BLOCK CONFIGURATIONS	DIVISION: WATER	DRAWING NUMBER: 306
	REVISED: JAN. 1999	

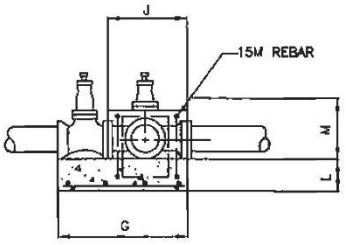
The CORPORATION of the DISTRICT of SUMMERLAND

STANDARD DRAWINGS

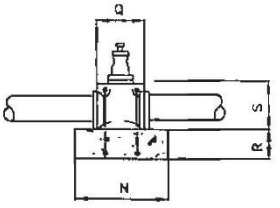
NOT TO SCALE



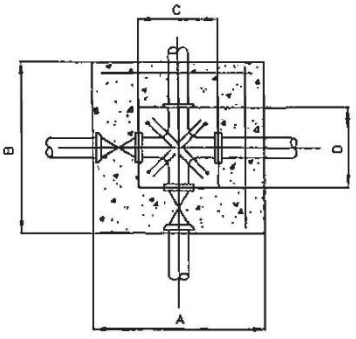
ELEVATION



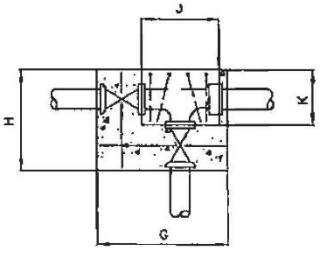
ELEVATION



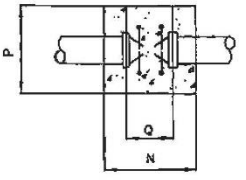
ELEVATION



PLAN VIEW



PLAN VIEW



PLAN VIEW

NOTE:

1) REFER TO DESIGN DRAWINGS, MMCD 02666,03300 AND SCHEDULE C FOR DETAILED SPECIFICAITONS.
2) PLACE 6 mil POLYETHYLENE BETWEEN CONCRETE AND FITTINGS.
3) THRUST BLOCK SIZING TO BE CONFIRMED BY OWNER'S ENGINEER.

THRUST BLOCK DIMENSIONS (mm)

PIPE SIZE	CROSS WITH VALVES						TEE WITH VALVES						LINE VALVE				
	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S
100mm	800	800	320	320	200	300	600	600	320	300	200	300	300	400	300	250	300
150mm	1000	1000	400	400	200	350	700	700	400	400	300	350	400	600	300	350	350
200mm	1100	1100	450	450	300	400	800	800	450	450	400	400	500	800	320	400	400
250mm	1300	1300	550	550	400	450	1000	1000	550	500	500	450	500	1000	350	500	450
300mm	1400	1400	600	600	500	500	1200	1200	650	550	600	500	500	1200	400	600	500
350mm	1600	1600	700	700	700	600	1400	1400	650	600	800	600	600	1400	350	800	600
400mm	1800	1800	750	750	800	700	1600	1600	750	650	900	700	600	1600	400	900	700

GATE VALVE THRUST BLOCKS

DIVISION: WATER

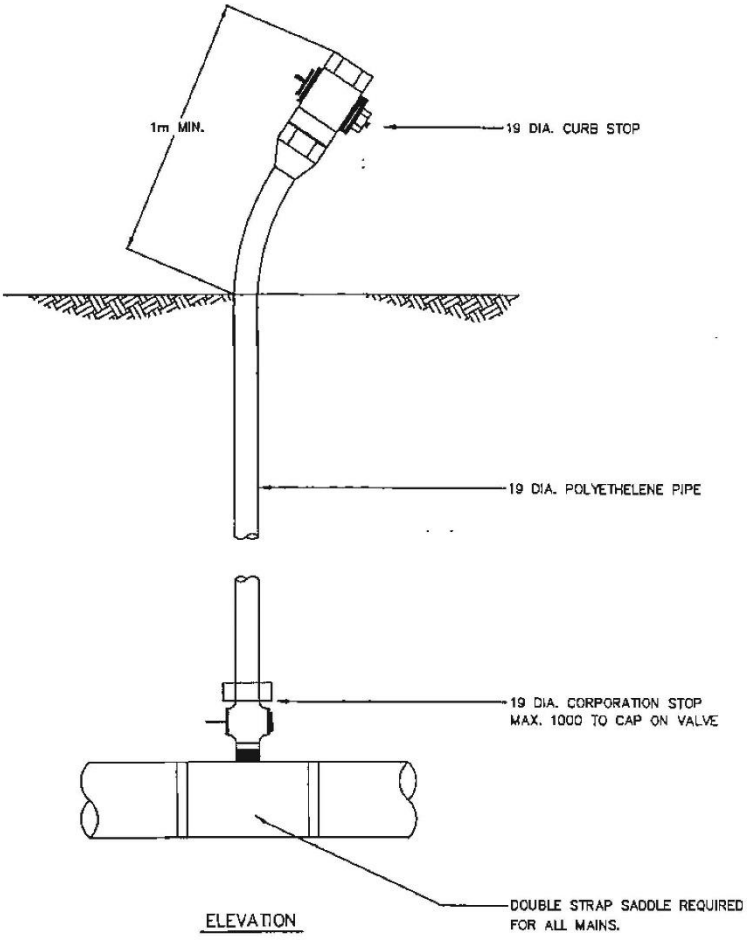
REVISED: JAN. 1999

DRAWING NUMBER: 307

The CORPORATION of the
DISTRICT of SUMMERLAND

STANDARD DRAWINGS

NOT TO SCALE



ELEVATION

TEST POINT INSTALLATION DURING CONSTRUCTION

NOTE:

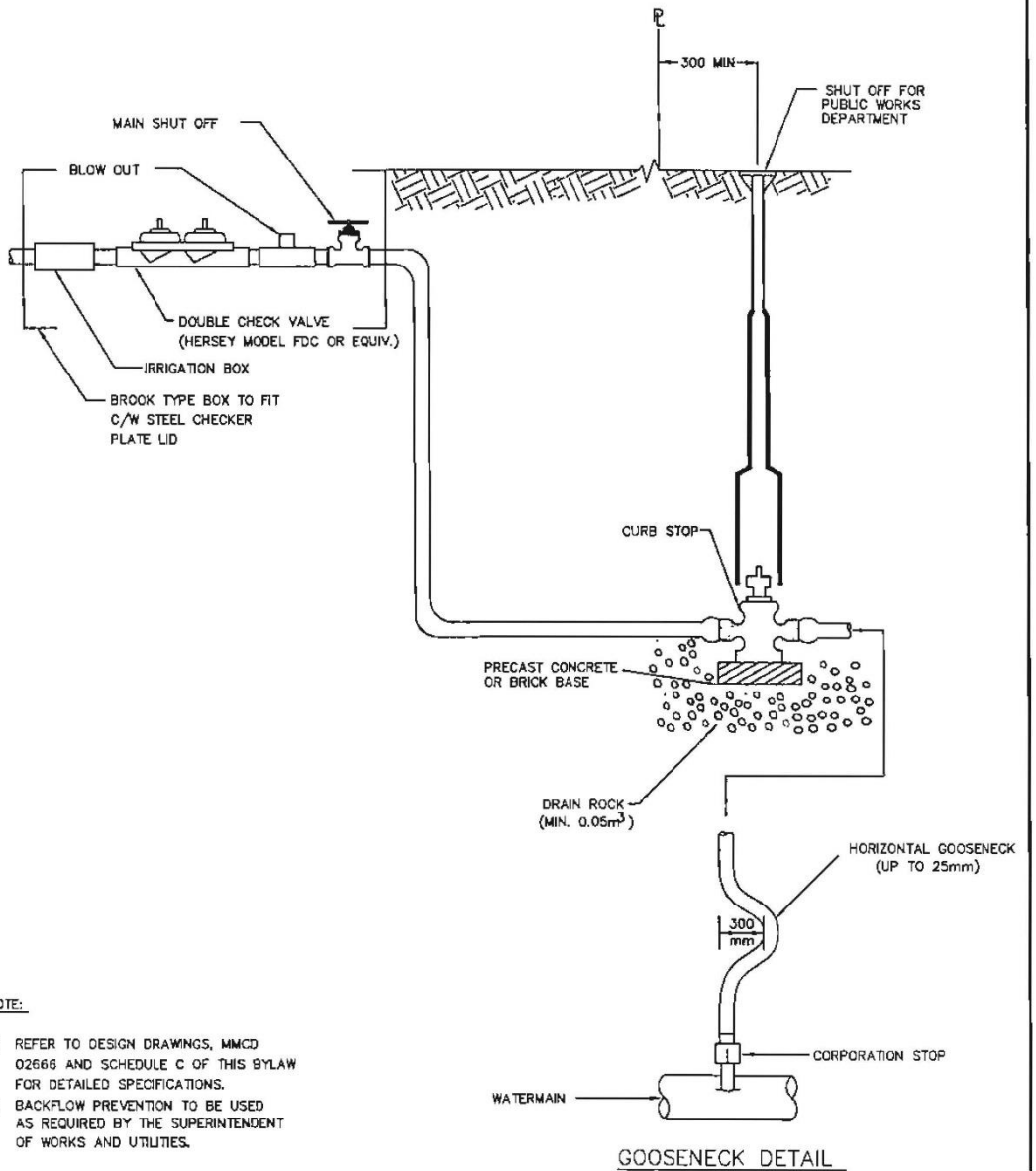
1) THIS DETAIL TO BE USED ONLY FOR TESTING DURING CONSTRUCTION. NOT TO BE USED FOR FLUSHING.
2) REFER TO DESIGN DRAWINGS, MMCD SECTION 02666, AND SCHEDULE C OF THIS BYLAW FOR DETAILED SPECIFICATIONS.
3) THIS DRAWING REPLACES MMCD WS.

TEST POINT INSTALLATION	DIVISION: WATER	DRAWING NUMBER: 308
	REVISED: JAN. 1999	

The CORPORATION of the DISTRICT of SUMMERLAND

STANDARD DRAWINGS

NOT TO SCALE



GOOSENECK DETAIL

NOTE:

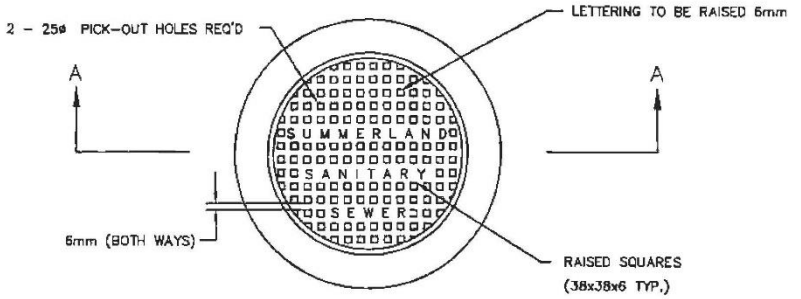
1) REFER TO DESIGN DRAWINGS, MMCD 02666 AND SCHEDULE C OF THIS BYLAW FOR DETAILED SPECIFICATIONS.
2) BACKFLOW PREVENTION TO BE USED AS REQUIRED BY THE SUPERINTENDENT OF WORKS AND UTILITIES.

PARK IRRIGATION SERVICE	DIVISION: WATER	DRAWING NUMBER: 309
	REVISED: JAN. 1999	

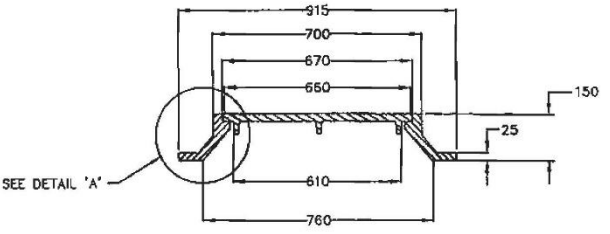
The CORPORATION of the DISTRICT of SUMMERLAND

STANDARD DRAWINGS

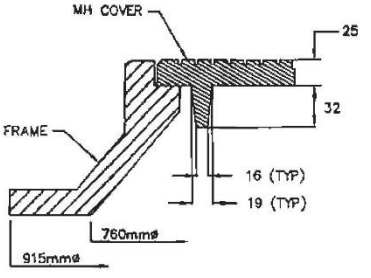
NOT TO SCALE



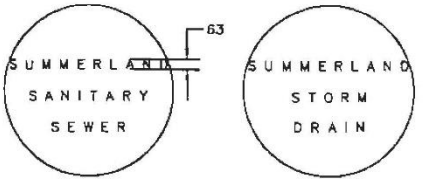
PLAN



SECTION A – A



DETAIL 'A'



STANDARD LETTERING ON COVER

NOTE:

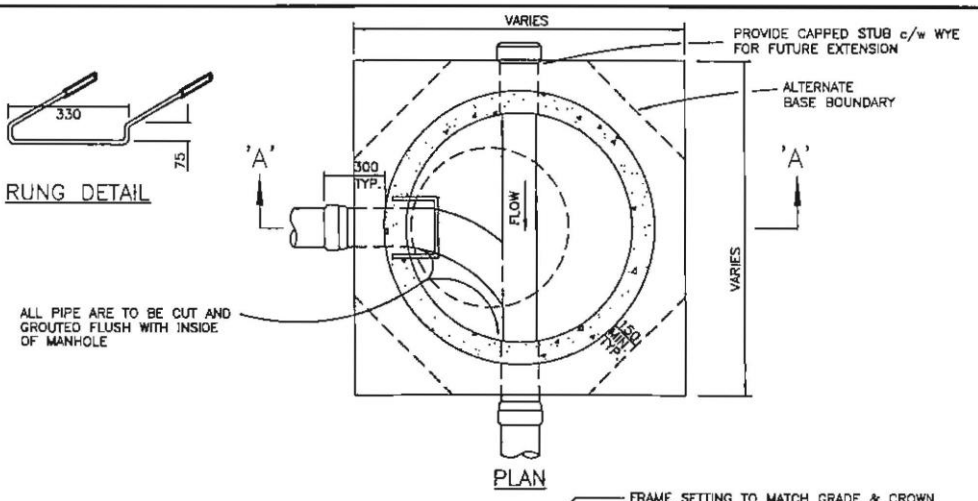
1) REFER TO DESIGN DRAWINGS, MMCD SECTION 02725 FOR DETAILED SPECIFICATIONS.
2) FOR MANHOLE COVERS OTHER THAN SANITARY AND STORM CONFIRM LETTERING WITH THE REGIONAL DISTRICT ENGINEER BEFORE ORDERING COVERS.

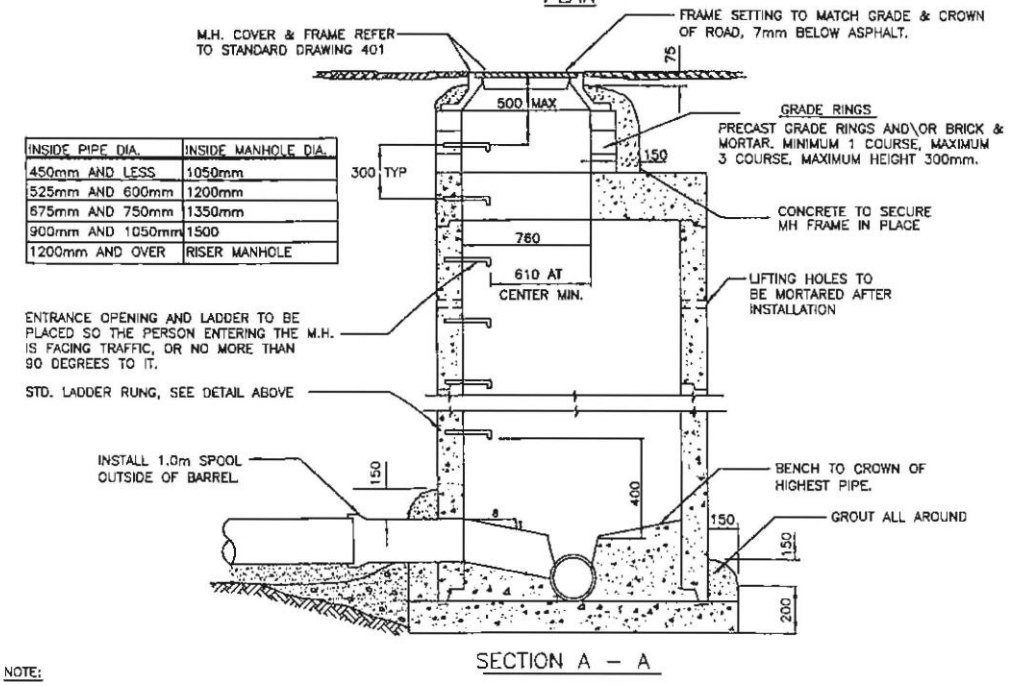
MANHOLE FRAME AND COVER	DIVISION: SEWER	DRAWING NUMBER: 401
	REVISED: JULY 1999	

The CORPORATION of the DISTRICT of SUMMERLAND

STANDARD DRAWINGS

NOT TO SCALE





INSIDE PIPE DIA.	INSIDE MANHOLE DIA.
450mm AND LESS	1050mm
525mm AND 600mm	1200mm
675mm AND 750mm	1350mm
900mm AND 1050mm	1500
1200mm AND OVER	RISER MANHOLE

SECTION A – A

NOTE:

1) REFER TO DESIGN DRAWINGS, MMCD SECTION 02725.
2) THIS DRAWING REPLACES MMCD S1 AND S2.
3) FOR PIPE DIAMETER GREATER THAN 450mm REFER TO DRAWING 403.
4) ALL GROUT TO DOS SPECIFICATIONS. (PORTLAND EXPANDING GROUT)

STORM & SANITARY REINFORCED MANHOLE FOR PIPES 450 DIA. AND LESS

DIVISION: SEWER

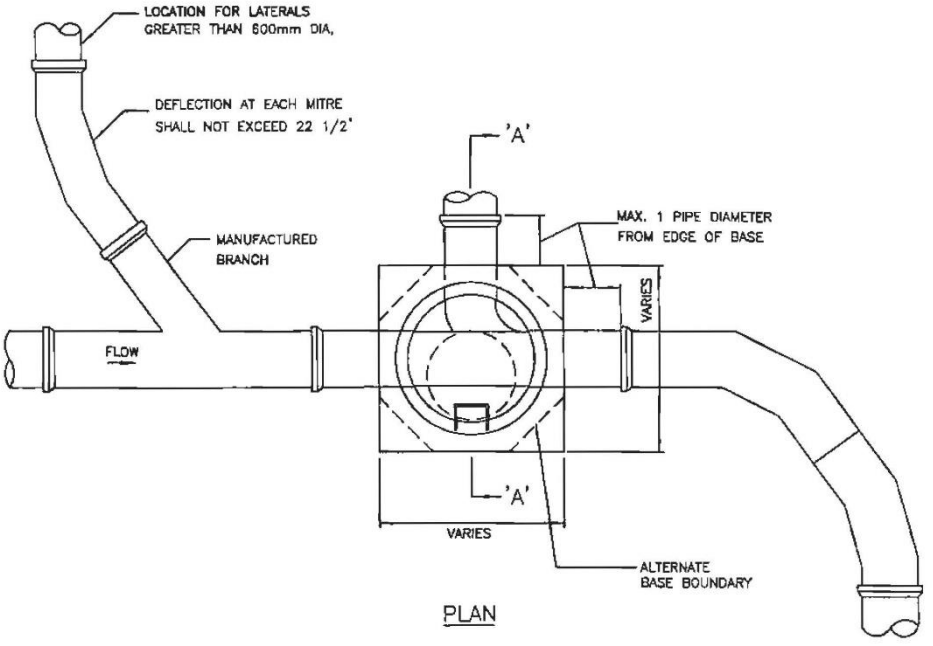
REVISED: JULY 1999

DRAWING NUMBER: 402

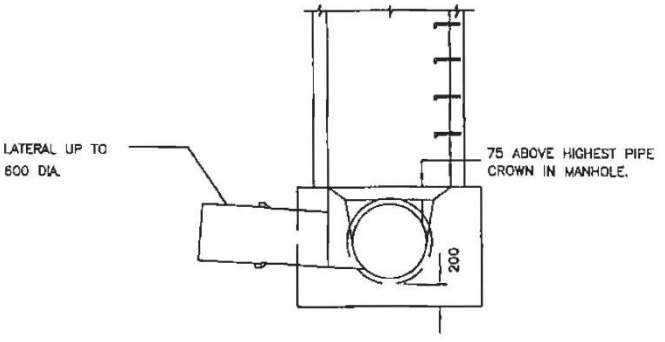
The CORPORATION of the DISTRICT of SUMMERLAND

STANDARD DRAWINGS

NOT TO SCALE



PLAN



SECTION A – A

NOTE:

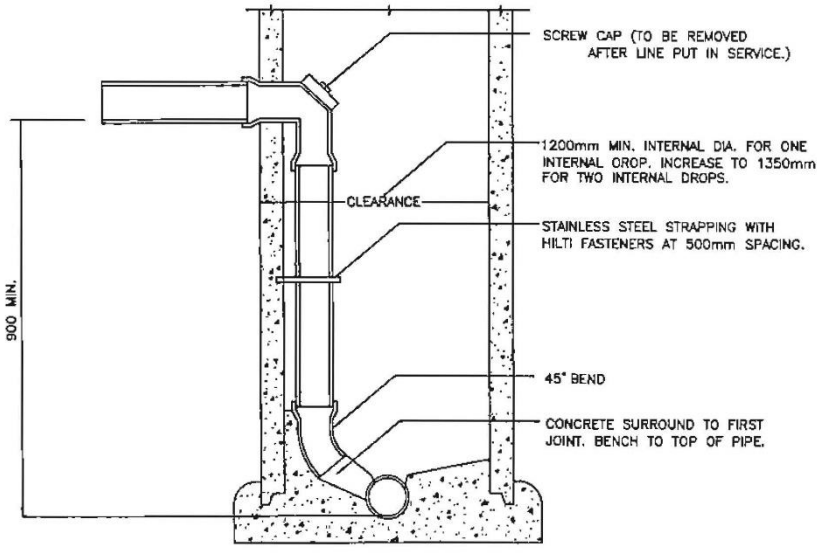
1) REFER TO DESIGN DRAWINGS, MMCD SECTION 02725 FOR DETAILED SPECIFICATIONS.
2) FOR PIPE DIAMETERS 450mm OR LESS REFER TO DRAWING 402.
3) FOR GENERAL MANHOLE CONSTRUCTION SEE STANDARD DRAWING 402.

STORM & SANITARY MANHOLE BASE DETAILS FOR PIPES GREATER THAN 450mm DIA.	DIVISION: SEWER	DRAWING NUMBER: 403
	REVISED: JULY 1999	

The CORPORATION of the DISTRICT of SUMMERLAND

STANDARD DRAWINGS

NOT TO SCALE



INSIDE DROP TYPE

NOTE:

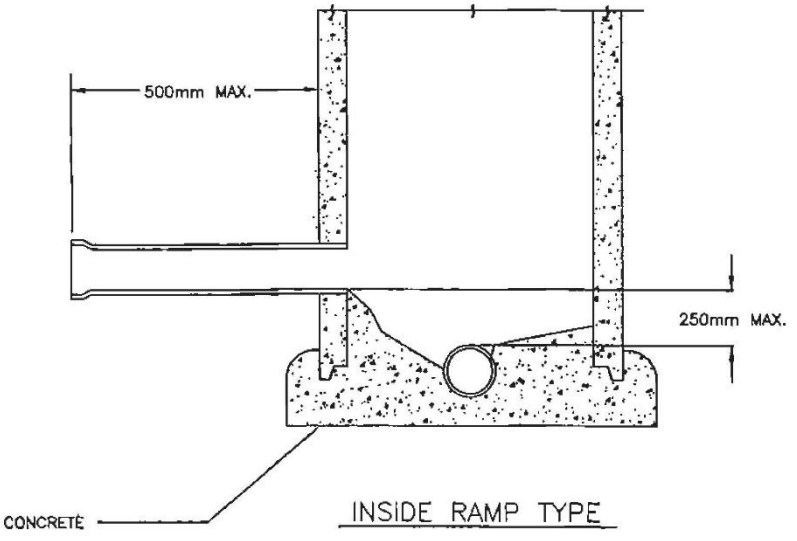
1) REFER TO DESIGN DRAWINGS, MMCD SECTION 02725 FOR DETAILED SPECIFICATIONS.
2) FOR GENERAL MANHOLE CONSTRUCTION SEE STANDARD DRAWING 402.
3) THIS DRAWING REPLACES MMCD S3.
4) LADDER RUNGS NOT TO BE DIRECTLY ACROSS FROM ANY INSIDE DROPS.
5) USE LERON INSIDE DROP #62AMHID.

STORM & SANITARY MANHOLE INSIDE DROP STRUCTURE	DIVISION: SEWER	DRAWING NUMBER: 404
	REVISED: JULY 1999	

The CORPORATION of the DISTRICT of SUMMERLAND

STANDARD DRAWINGS

NOT TO SCALE



INSIDE RAMP TYPE

NOTE:

1) REFER TO DESIGN DRAWINGS, MMCD 02725 FOR DETAILED SPECIFICATIONS.

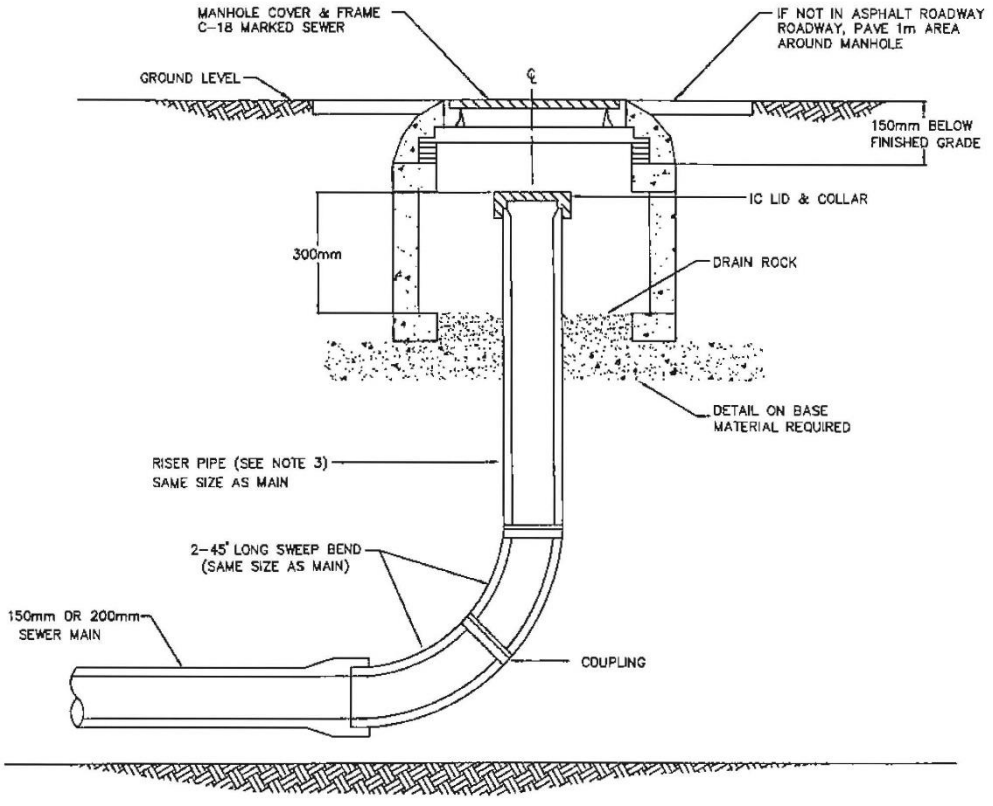
2) FOR GENERAL MANHOLE CONSTRUCTION ABOVE BASE; SEE STANDARD DRAWING 402.

STORM & SANITARY MANHOLE INSIDE RAMP STRUCTURE	DIVISION: SEWER REVISED: JULY 1999	DRAWING NUMBER: 405

The CORPORATION of the DISTRICT of SUMMERLAND

STANDARD DRAWINGS

NOT TO SCALE



NOTE:

1) REFER TO DESIGN DRAWINGS, MMCD SECTION 02725 FOR DETAILED SPECIFICATIONS.
2) THIS DRAWING REPLACES MMCD S6.

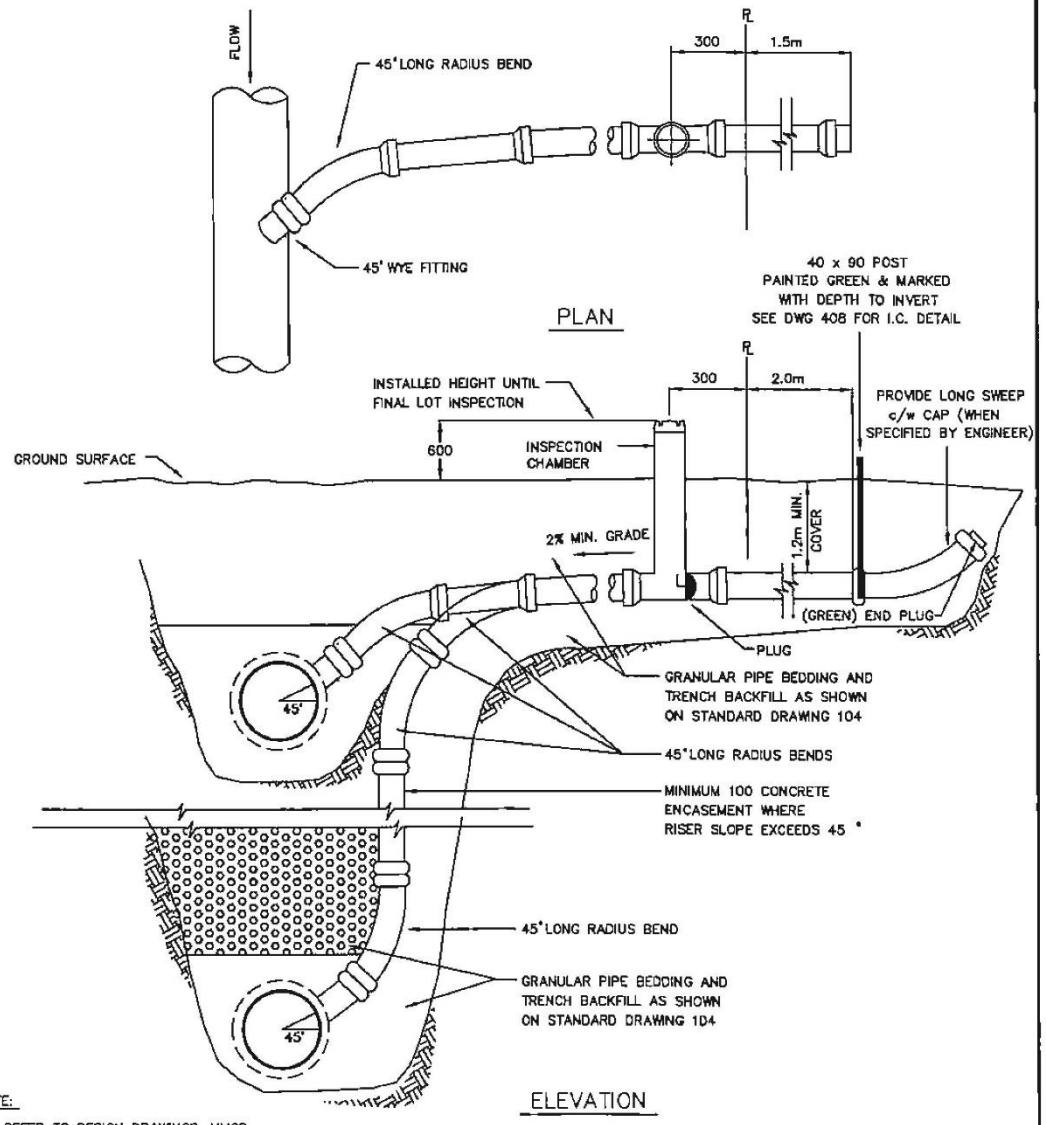
1) C-18 LID AND FRAME
2) GRADE RINGS - 1.2m x 0.2m LID c/w 0.635m OPENING. 0.9m x 0.3m BARREL
3) BASE - 1.2m x 0.2m LID c/w 0.635m OPENING. FILL REMAINING SPACE AROUND PIPE WITH DRAIN ROCK.

STORM & SANITARY CLEANOUT	DIVISION: SEWER	DRAWING NUMBER: 406
	REVISED: JULY 1999	

The CORPORATION of the DISTRICT of SUMMERLAND

STANDARD DRAWINGS

NOT TO SCALE



NOTE:

1) REFER TO DESIGN DRAWINGS, MMCD SECTION 02725 FOR DETAILED SPECIFICATIONS.
2) CONNECTIONS TO BE 100 DIA. MINIMUM.
3) RISER TYPE SERVICE TO BE USED ONLY WHEN SERVICE IS MORE THAN 2.4m ABOVE WYE INVERT.
4) SEE STANDARD DRAWING 408 FOR INSPECTION CHAMBER DETAIL.
5) THIS DRAWING REPLACES MMCD S7.

SANITARY SEWER SERVICE CONNECTION FOR RISER TYPE AND NON RISER TYPE

DIVISION: SEWER

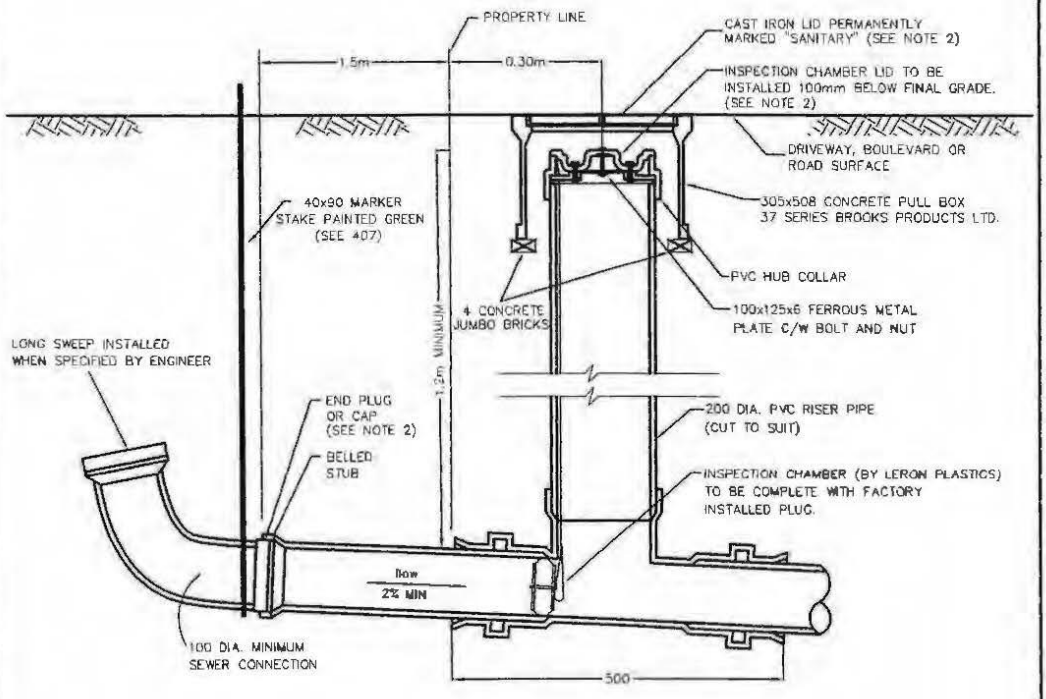
REVISED: JULY 1999

DRAWING NUMBER: 407

The CORPORATION of the DISTRICT of SUMMERLAND

STANDARD DRAWINGS

NOT TO SCALE



ALL INSPECTION CHAMBERS

NOTE:

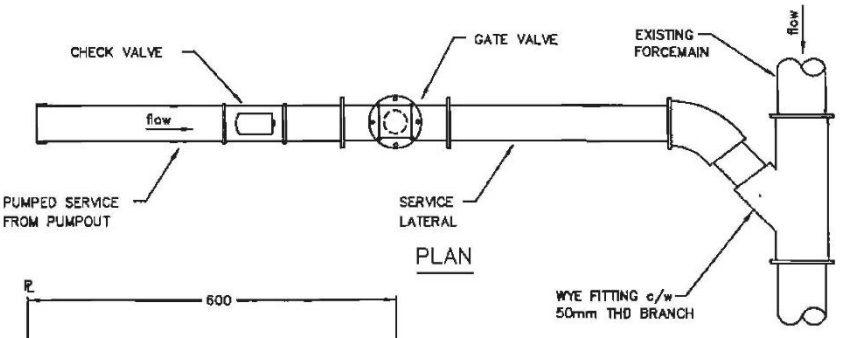
1) REFER TO DESIGN DRAWINGS, MMCD SECTION 02725 FOR DETAILED SPECIFICATIONS.
2) END PLUG OR CAP TO BE GREEN FOR SANITARY SEWER AND RED FOR STORM. CAST IRON LID FOR STORM SEWER INSTALLATIONS TO BE PERMANENTLY MARKED "STORM" AND THE INSPECTION LID TO BE RED IN COLOUR.
3) THIS DRAWING REPLACES MMCD S9

SANITARY SEWER INSPECTION CHAMBER	DIVISION: SEWER	DRAWING NUMBER: 408
	REVISED: JULY 1999	

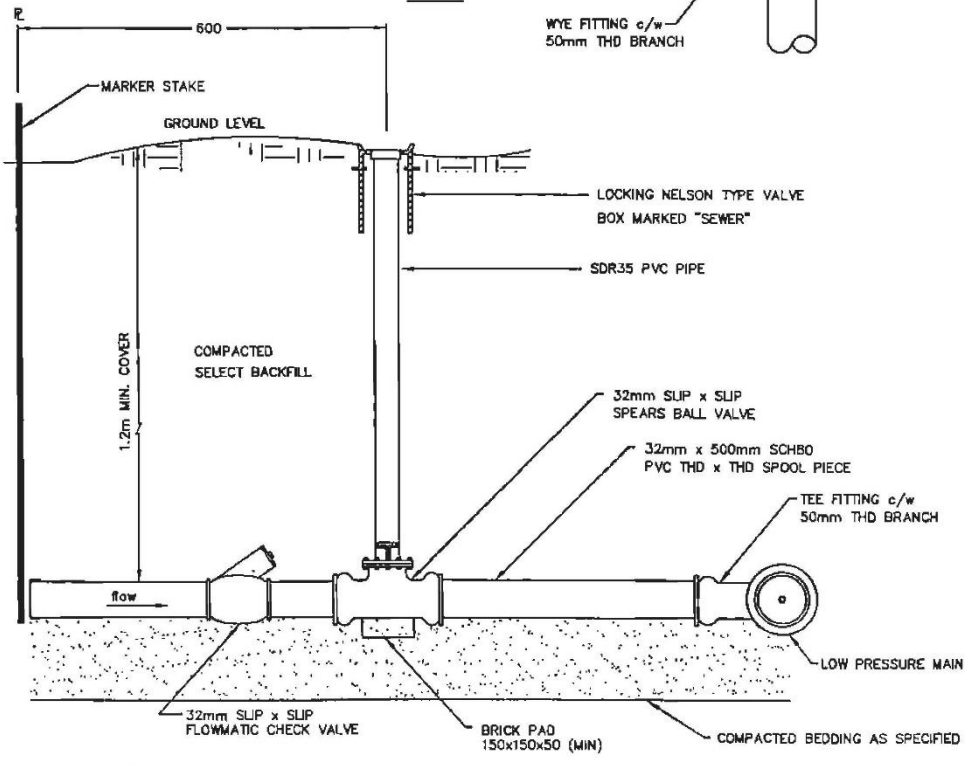
The CORPORATION of the DISTRICT of SUMMERLAND

STANDARD DRAWINGS

NOT TO SCALE



PLAN



NOTE:

1) REFER TO DESIGN DRAWINGS, MMCD SECTION 02725 AND SCHEDULE C OF THIS BYLAW FOR DETAILED SPECIFICATIONS.
2) CONNECTION TO FORCEMAIN ONLY PERMITTED WHEN APPROVED BY THE SUPERINTENDENT OF WORKS & UTILITIES.

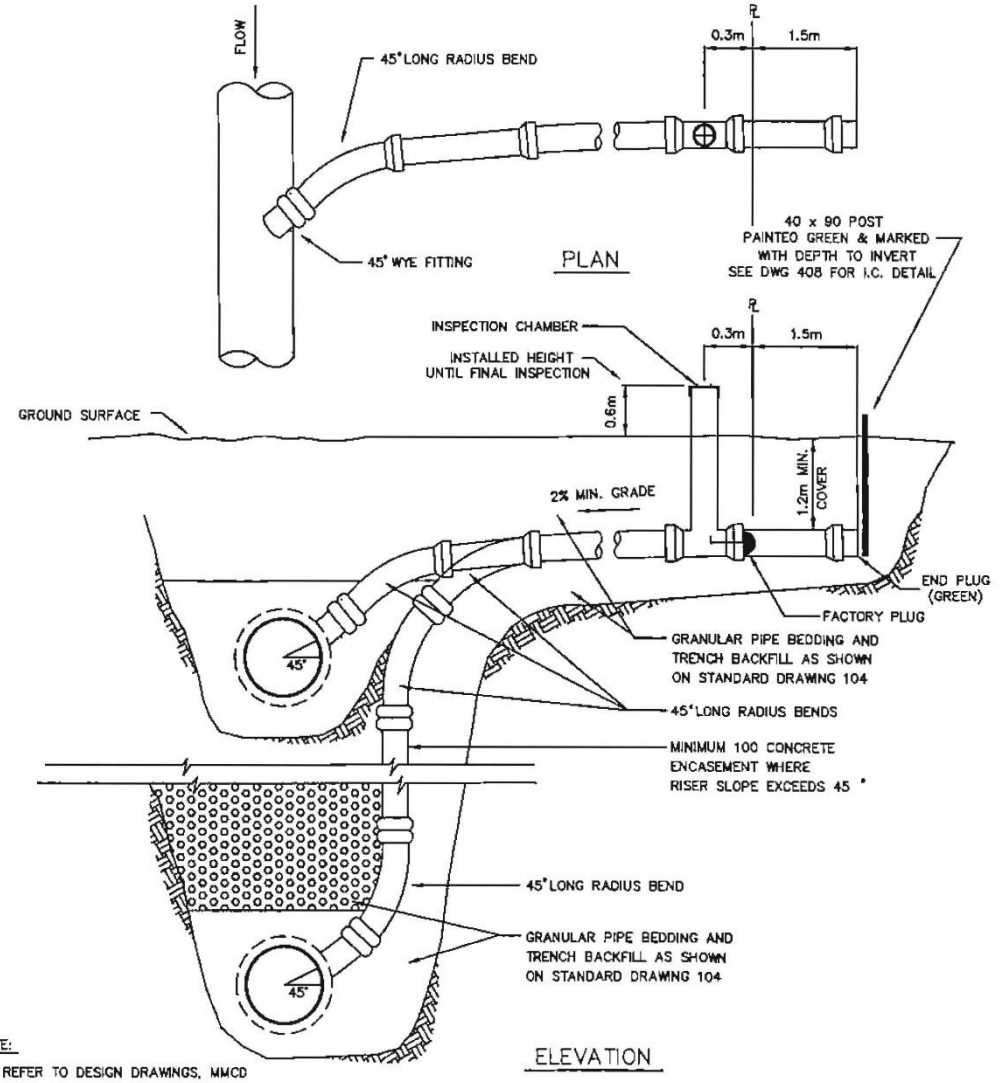
ELEVATION

PRESSURE SERVICE CONNECTION TO FORCEMAIN	DIVISION: SEWER	DRAWING NUMBER: 409
	REVISED: JAN. 1999	

The CORPORATION of the DISTRICT of SUMMERLAND

STANDARD DRAWINGS

NOT TO SCALE



NOTE:

1) REFER TO DESIGN DRAWINGS, MMCD 02725 AND SCHEDULE C FOR DETAILED SPECIFICATIONS.
2) CONCRETE STORM SEWER PIPES TO BE PROVIDED WITH SUPPLIER INSTALLED PVC STUB.
3) CONNECTIONS TO BE 100 MINIMUM OR LARGER AS SPECIFIED ON CONTRACT DRAWINGS.
4) RISER TYPE SERVICE TO BE USED ONLY WHEN SERVICE IS MORE THAN 2.4m ABOVE WYE INVERT OR AS DIRECTED BY CONTRACT ADMINISTRATOR.
5) LOCATION OF SERVICE AS SHOWN ON CONTRACT DRAWINGS.
6) THIS DRAWING REPLACES MMCD S8.

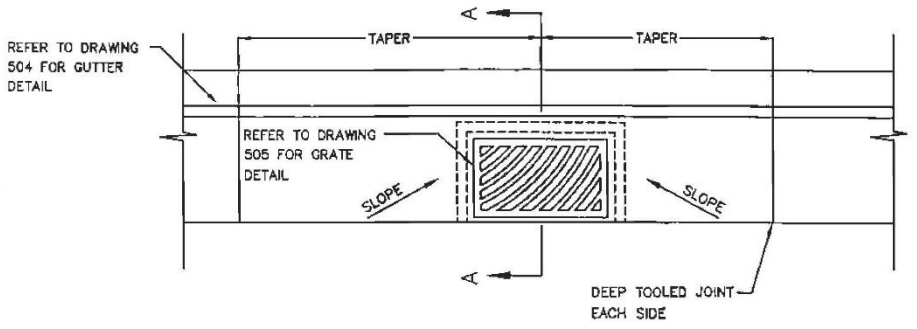
STORM SEWER SERVICE CONNECTION

DIVISION:	DRAWING NUMBER:
STORM	501
REVISED: JAN. 1999	

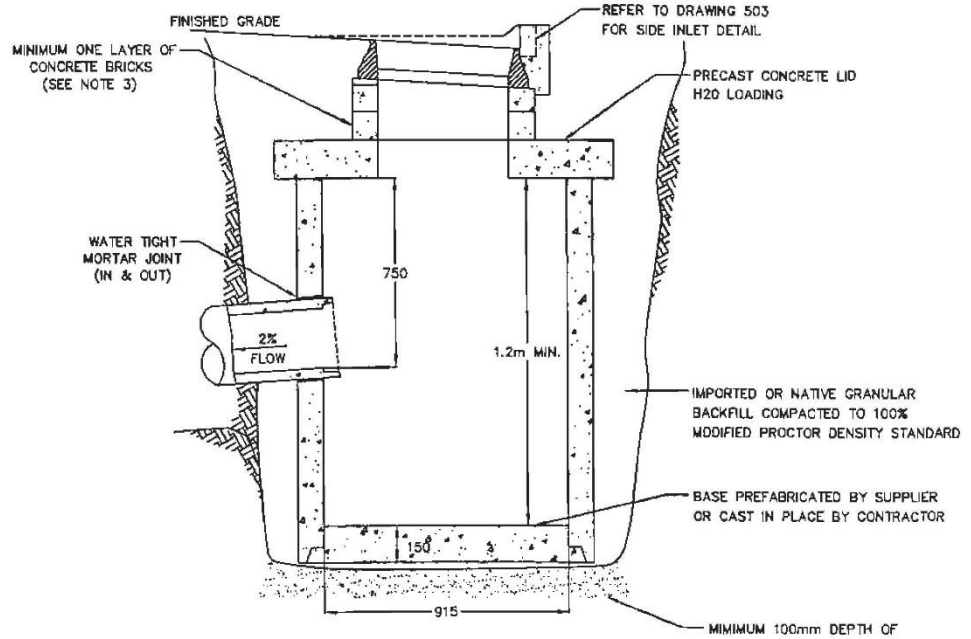
The CORPORATION of the DISTRICT of SUMMERLAND

STANDARD DRAWINGS

NOT TO SCALE



GENERAL PLAN



SECTION A–A

NOTE:

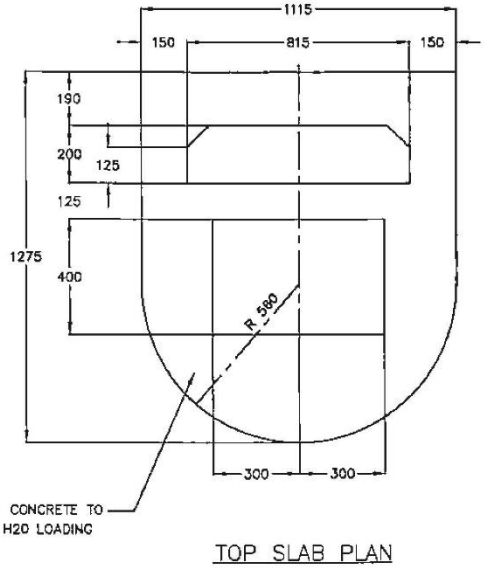
1) REFER TO DESIGN DRAWINGS, MMCD SECTION 02721 AND SCHEDULE C FOR DETAILED SPECIFICATIONS.
2) THIS DRAWING REPLACES S11.
3) MAXIMUM DEPTH OF BRICKWORK–300mm BRICKWORK TO BE SET IN MOTAR.

ROADWAY TYPE PRECAST CONCRETE CATCH BASIN	DIVISION: STORM	DRAWING NUMBER: 502
	REVISED: JAN. 1999	

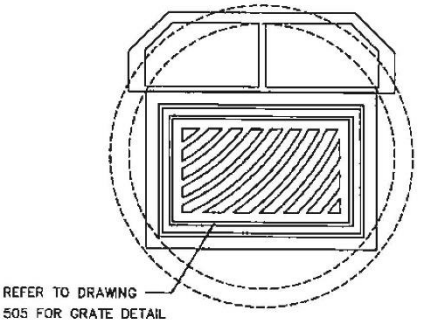
The CORPORATION of the DISTRICT of SUMMERLAND

STANDARD DRAWINGS

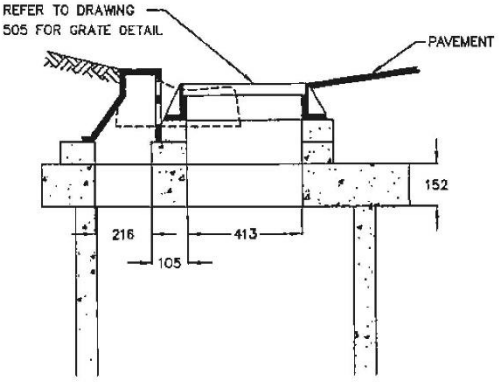
NOT TO SCALE



TOP SLAB PLAN



GRATE & BARREL PLAN



SECTION

NOTE:

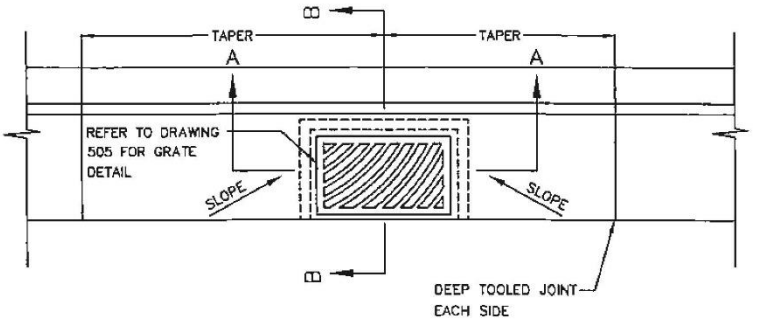
1) REFER TO DESIGN DRAWINGS, MMCD SECTION 02721 AND SCHEDULE C FOR DETAILED SPECIFICATIONS.
2) USE SIDE INLET GRATE MODEL B26A

CATCH BASIN DETAIL SIDE INLET	DIVISION: STORM	DRAWING NUMBER: 503
	REVISED: JAN. 1999	

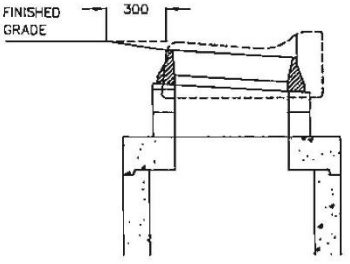
The CORPORATION of the DISTRICT of SUMMERLAND

STANDARD DRAWINGS

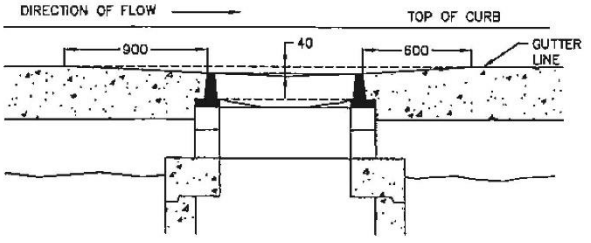
NOT TO SCALE



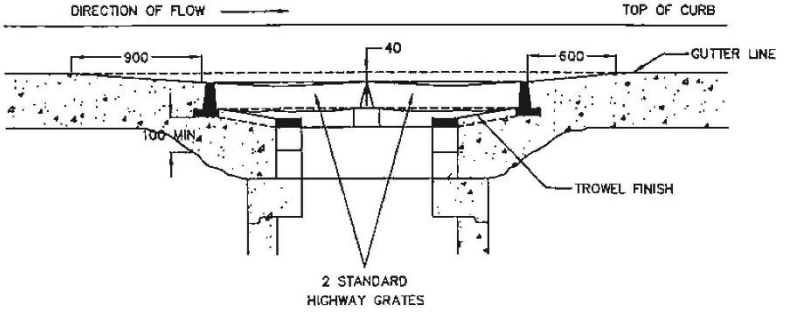
GENERAL PLAN



SECTION B–B



SECTION A–A



SECTION A–A
FOR TWIN INLET

NOTE:

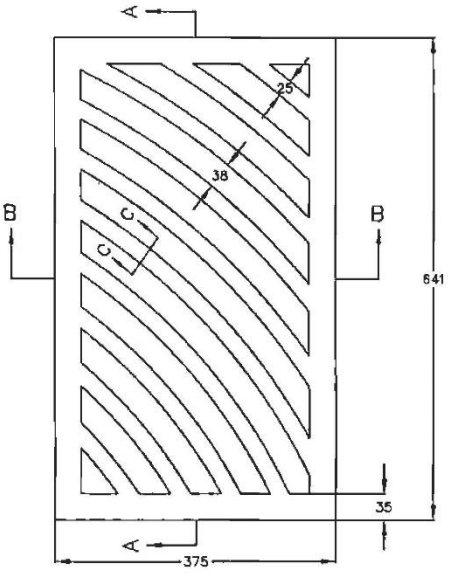
1) REFER TO DESIGN DRAWINGS, MMCD SECTION 02721 AND SCHEDULE C FOR DETAILED SPECIFICATIONS.
2) THIS DRAWING REPLACED S11

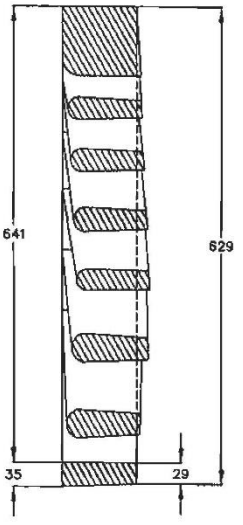
CATCH BASIN GUTTER DETAIL	DIVISION: STORM	DRAWING NUMBER: 504
	REVISED: JAN. 1999	

The CORPORATION of the DISTRICT of SUMMERLAND

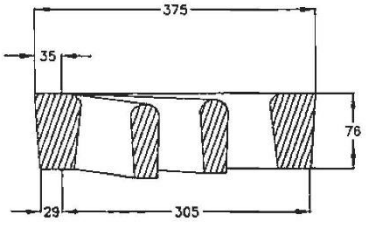
STANDARD DRAWINGS

NOT TO SCALE

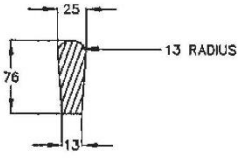




SECTION A–A



SECTION B–B



SECTION C–C

NOTE:

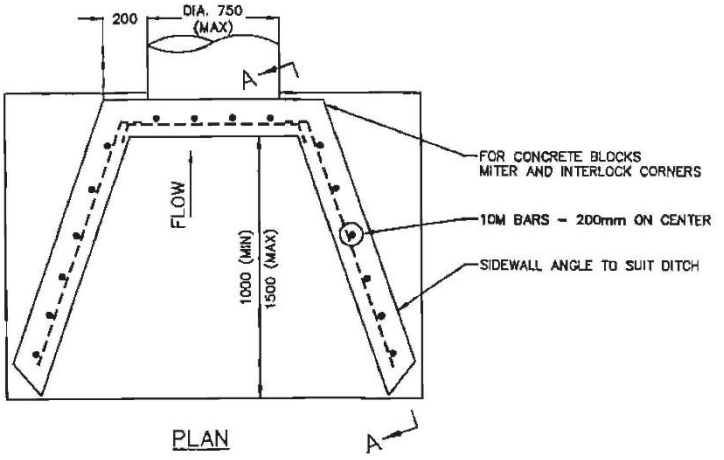
1) REFER TO DESIGN DRAWINGS, MMCD SECTION 02723 AND SCHEDULE C FOR DETAILED SPECIFICATIONS.

BICYCLE SAFE CATCH BASIN GRATE	DIVISION: STORM	DRAWING NUMBER: 505
	REVISED: JAN. 1999	

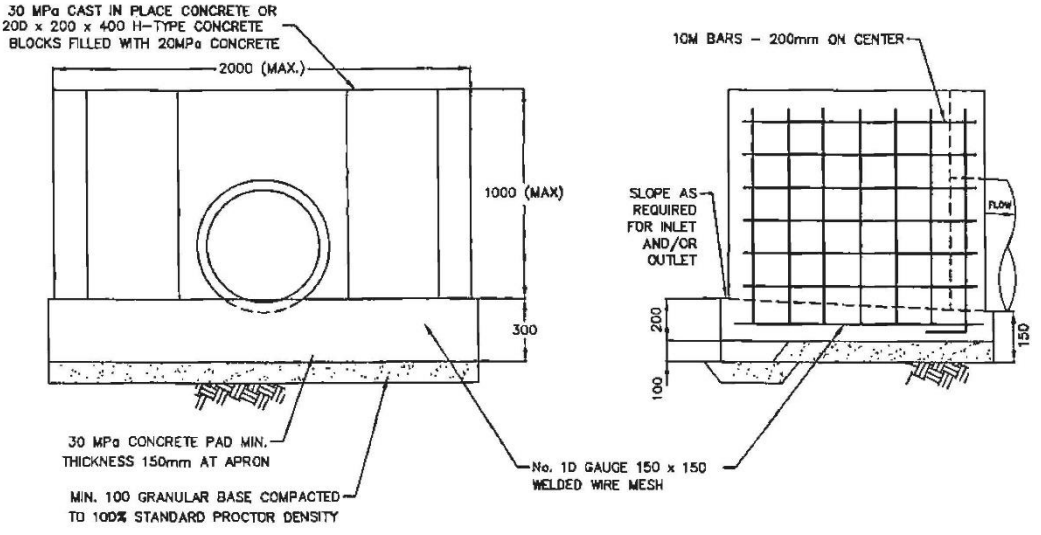
The CORPORATION of the DISTRICT of SUMMERLAND

STANDARD DRAWINGS

NOT TO SCALE



PLAN



FRONT ELEVATION

SECTION A–A

NOTE:

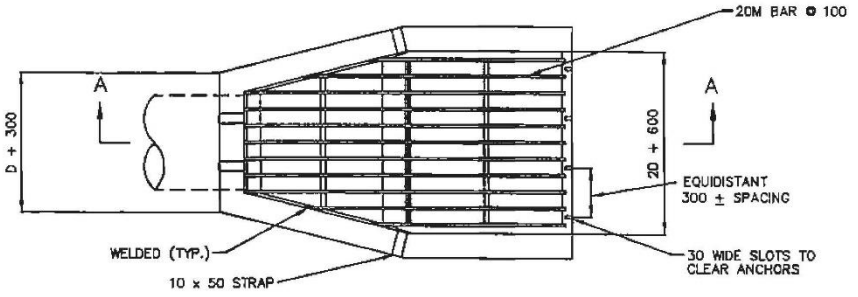
1) INSTALL SAFETY HANDRAIL AND/OR GRILL AS SPECIFIED ON DESIGN DRAWINGS.
2) DETAIL MAY BE MODIFIED FOR USE AS OUTLET STRUCTURE.
3) INSTALL SAFETY GRILL AS PER STANDARD DRAWING 507.
4) REFER TO DESIGN DRAWINGS, MMCD 03200, 3300 AND SCHEDULE C OF THIS BYLAW FOR DETAILED SPECIFICATIONS.
5) THIS DRAWING REPLACES MMCD S14.

CONCRETE OR CONCRETE BLOCK ENDWALL	DIVISION: STORM	DRAWING NUMBER: 506
	REVISED: JAN. 1999	

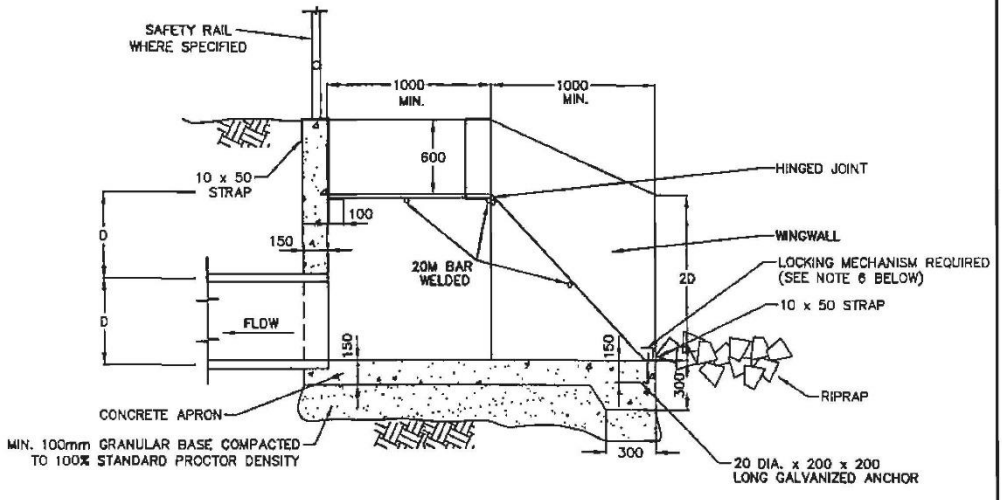
The CORPORATION of the DISTRICT of SUMMERLAND

STANDARD DRAWINGS

NOT TO SCALE



PLAN



SECTION A–A

NOTE:

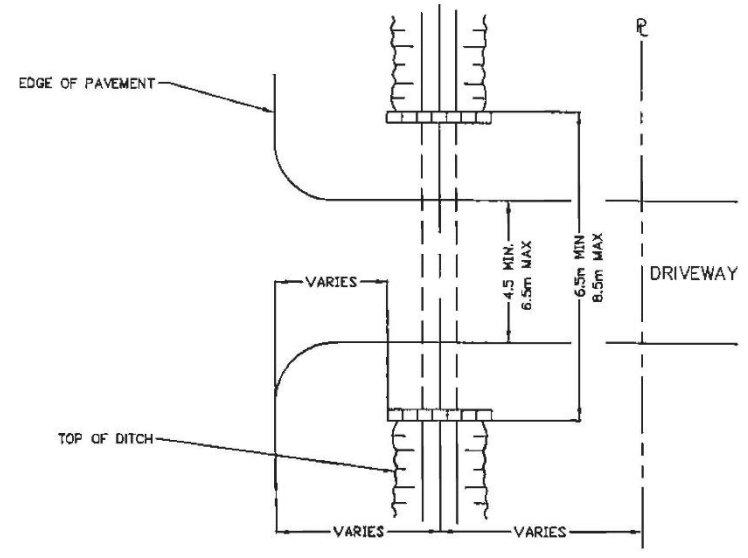
1) INSTALL SAFETY HANDRAIL AS SPECIFIED ON DESIGN DRAWINGS.
2) PRECAST UNIT MAY BE PROVIDED AS ALTERNATIVE WITH THE SUPERINTENDENT OF WORKS & UTILITIES PRIOR APPROVAL.
3) ALL STEEL COMPONENTS TO BE HOT DIPPED GALVANIZED AFTER FABRICATION.
4) SAFETY GRILL TO BE WELDED AT ALL JOINTS AND CONNECTIONS EXCEPT AT ANCHOR BOLTS.
5) REFER TO DESIGN DRAWINGS MMCD 03200, 03300, AND SCHEDULE C OF THIS BYLAW.
6) DETAILS OF THE LOCKING MECHANISM TO BE FINALIZED AT TIME OF SUBDIVISION AND AS DETERMINED BY THE SUPERINTENDENT OF WORKS & UTILITIES.
(PADLOCK SUPPLIED BY THE DISTRICT OF SUMMERLAND)
7) THIS DRAWING REPLACES MMCD S13.

STORM SEWER INLET WITH SAFETY GRILL	DIVISION: STORM	DRAWING NUMBER: 507
	REVISED: JAN. 1999	

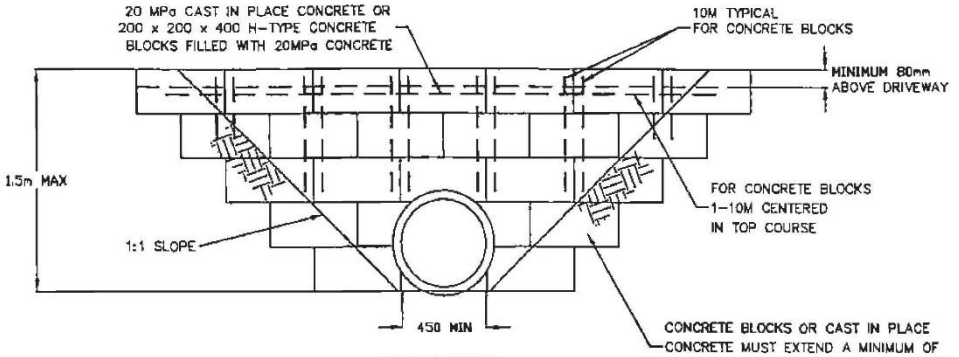
The CORPORATION of the DISTRICT of SUMMERLAND

STANDARD DRAWINGS

NOT TO SCALE



PLAN



ELEVATION

NOTES

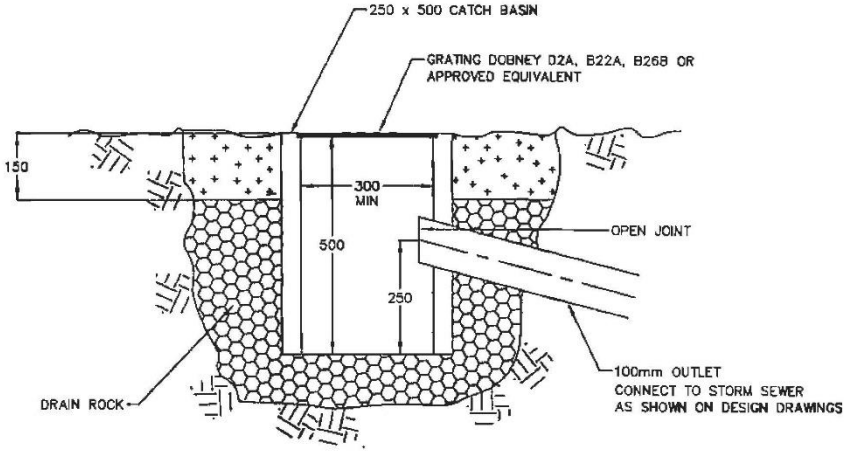
1) FILL BETWEEN ENDWALLS MUST BE IMPORTED GRANULAR BACKFILL OR APPROVED NATIVE BACKFILL WITH 150mm GRANULAR BASE SURFACE.
2) SPIGOT END OF PIPE MUST FACE DOWNSTREAM AND MUST BE CLEAR OF ENDWALLS.
3) FOR CAST IN PLACE USE 20 MPa CONCRETE WITH REINFORCING OF 10M @ 200mm BOTH WAYS
4) REFER TO DESIGN DRAWINGS, MMCD 02723, 03300, AND SCHEDULE C OF THIS BYLAW FOR DETAILED SPECIFICATIONS.
5) THIS DRAWING REPLACES MMCD S15.

CONCRETE OR CONCRETE BLOCK DRIVEWAY CULVERT ENDWALL	DIVISION: STORM	DRAWING NUMBER: 508
	REVISED: JAN. 1999	

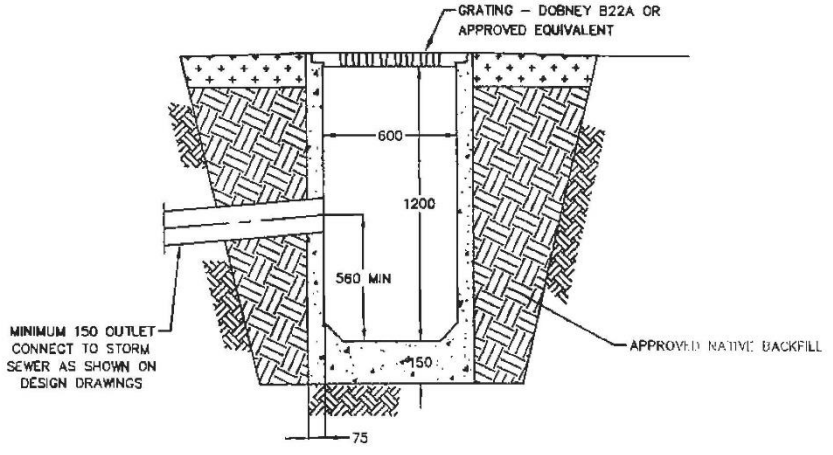
The CORPORATION of the DISTRICT of SUMMERLAND

STANDARD DRAWINGS

NOT TO SCALE



TYPE 1



TYPE 2

NOTE:

1) REFER TO DESIGN DRAWINGS, MMCD SECTION 02725, AND SCHEDULE C OF THIS BYLAW FOR DETAILED SPECIFICATIONS.
2) THIS DRAWING REPLACES MMCD S12.

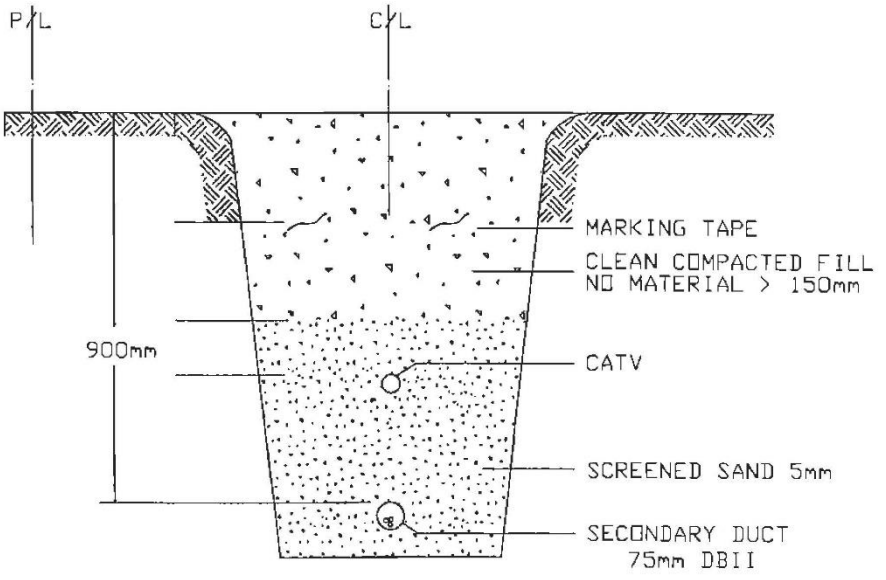
LAWN DRAIN

DIVISION:	DRAWING NUMBER:
STORM	509
REVISED: JAN. 1999	

The Corporation of the District of Summerland

STANDARD DRAWINGS

NOT TO SCALE



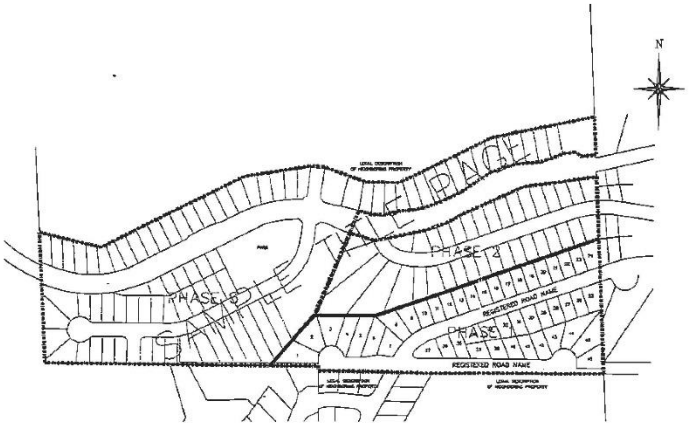
ELECTRICAL TRENCH DETAIL

DIVISION:	DRAWING NUMBER:
ELECT	601
REVISED: JAN. 1999	

RESIDENTIAL DEVELOPMENT
– REGISTERED ROAD NAME –
SAMPLEVILLE SUBDIVISION

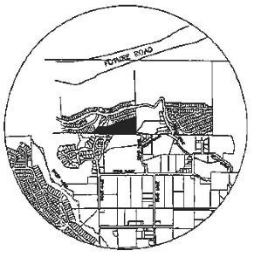
XYZ DEVELOPMENT Ltd.
5555 MAIN STREET, SUMMERLAND, B.C. V0H 1Z0

THE DISTRICT OF SUMMERLAND 99/001
ABC ENGINEERING Ltd. : 1000



LEGAL DESCRIPTION :
REM. WEST 1/2 OF D.L. XXXX, ODYD.

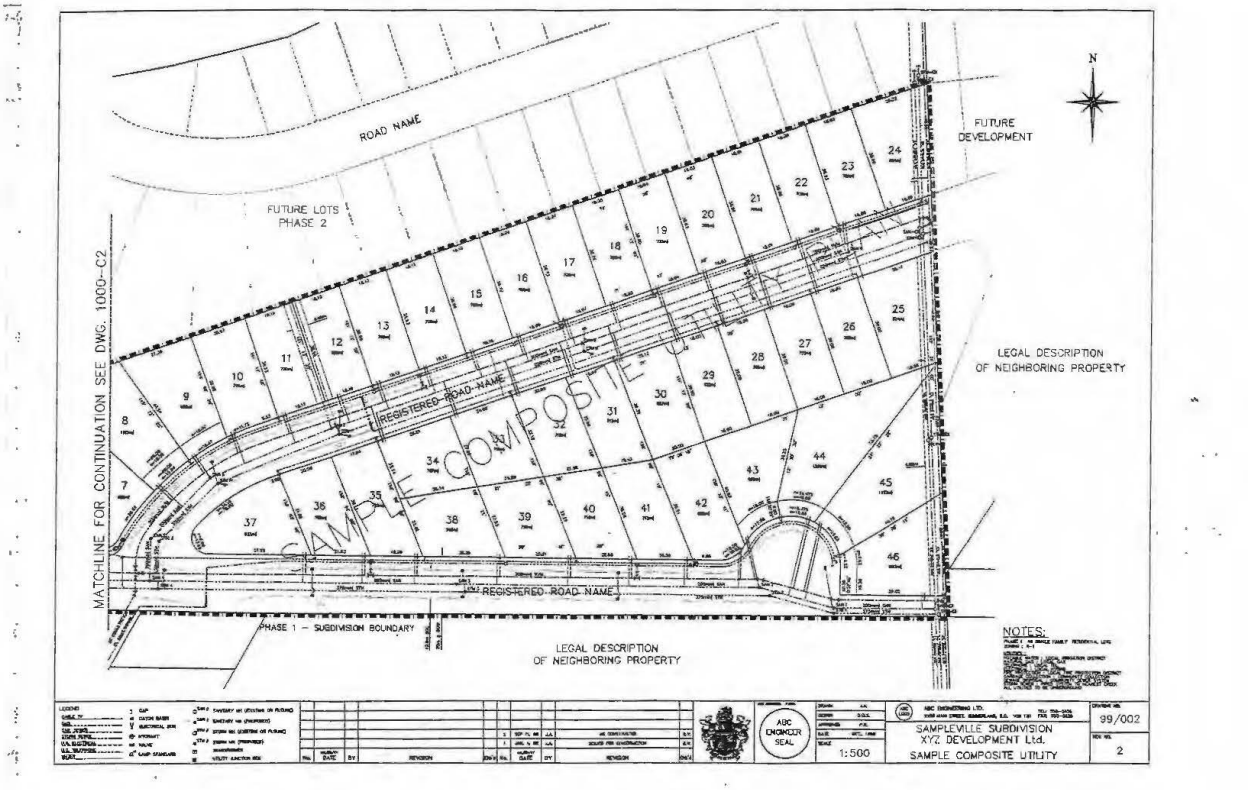
SUMMARY OF DRAWINGS :
99/002 – SAMPLE COMPOSITE UTILITY PLAN
99/003 – SAMPLE BUILDING ENVELOPE PLAN
99/004 – SAMPLE KEY PLAN
99/005 – SAMPLE PLAN & PROFILE

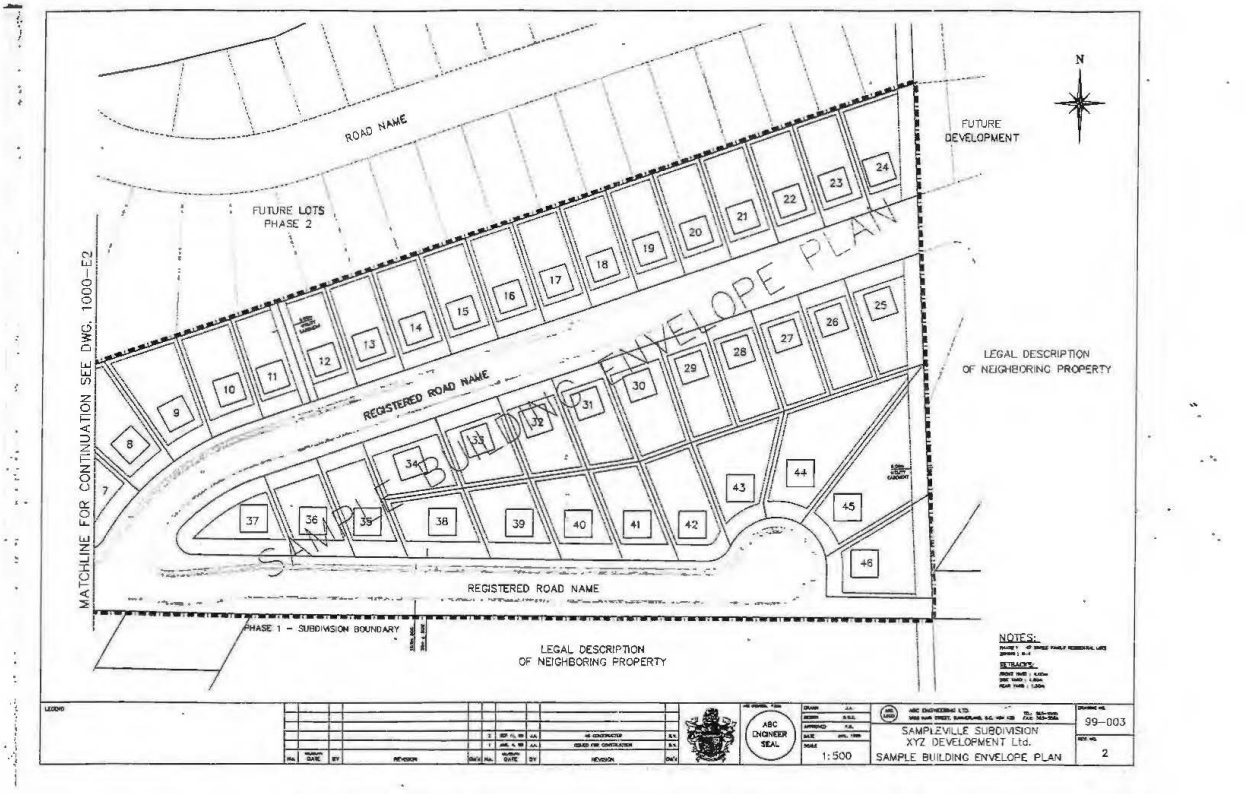


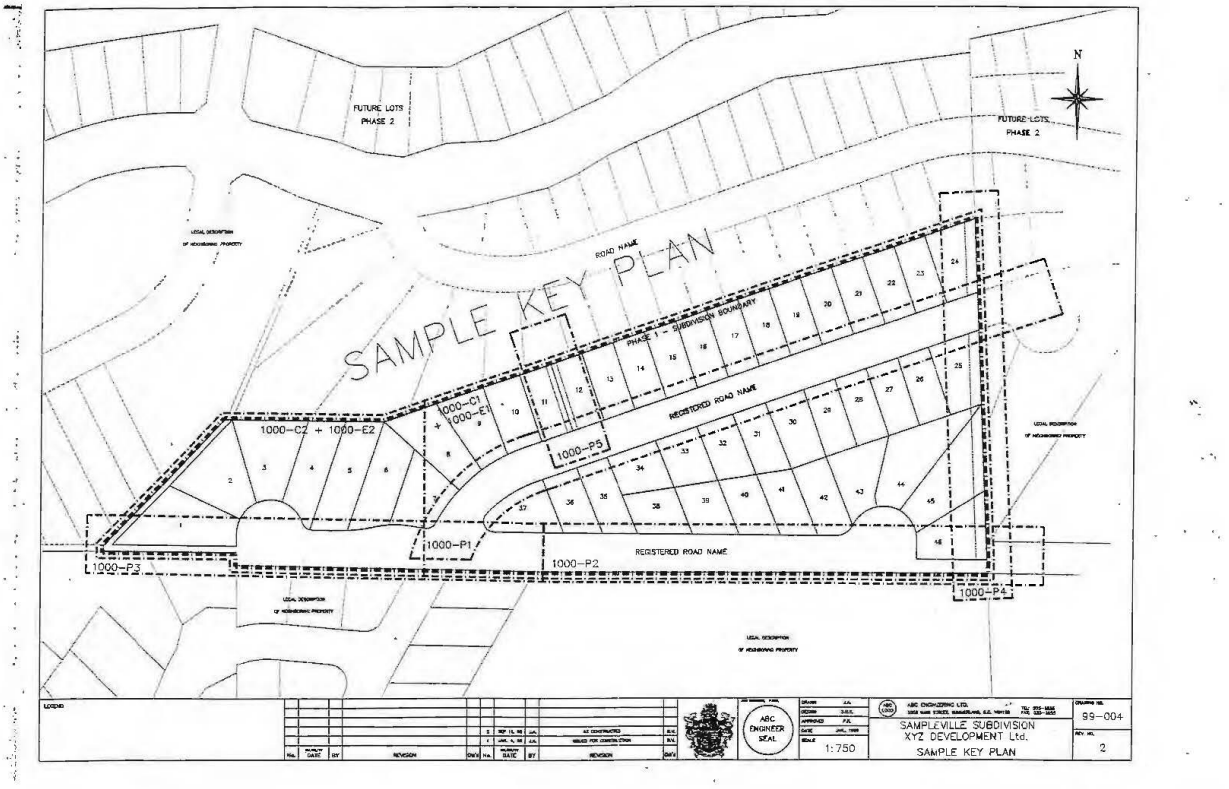
SITE PLAN

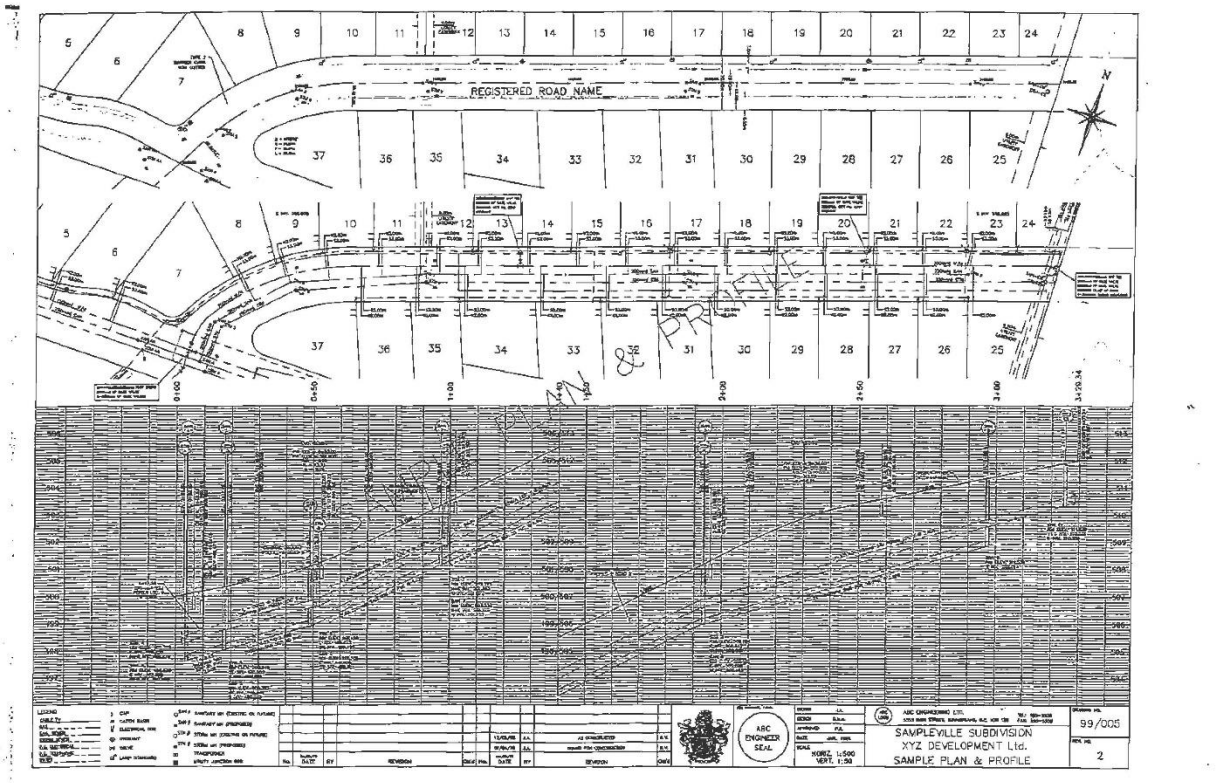
ABC LOGO

ABC ENGINEERING Ltd.
9215 CEDAR AVENUE, SUMMERLAND, B.C. V0H 1Z0
TEL. (250) 555-5555
FAX. (250) 555-5551


ROAD NAME
FUTURE LOTS
PHASE 2
FUTURE
DEVELOPMENT
N
MATCHLINE FOR CONTINUATION SEE DWG. 1000-C2
REGISTERED ROAD NAME
LEGAL DESCRIPTION
OF NEIGHBORING PROPERTY
SAMPLE COMPOSITE U
XYZ REGISTERED ROAD NAME
PHASE 1 — SUBDIVISION BOUNDARY
LEGAL DESCRIPTION
OF NEIGHBORING PROPERTY
NOTES:
ABC
ENGINEER
SEAL
1:500
SAMPLEVILLE SUBDIVISION
XYZ DEVELOPMENT Ltd.
SAMPLE COMPOSITE UTILITY
99/002
2


ROAD NAME
FUTURE LOTS
PHASE 2
FUTURE
DEVELOPMENT
N
MATCHLINE FOR CONTINUATION SEE DWG. 1000-E2
REGISTERED ROAD NAME
SAMPLE BUILDING ENVELOPE PLAN
LEGAL DESCRIPTION
OF NEIGHBORING PROPERTY
REGISTERED ROAD NAME
PHASE 1 - SUBDIVISION BOUNDARY
LEGAL DESCRIPTION
OF NEIGHBORING PROPERTY
NOTES:
ABC ENGINEER SEAL
1:500
SAMPLEVILLE SUBDIVISION
XYZ DEVELOPMENT Ltd.
SAMPLE BUILDING ENVELOPE PLAN
99-003
2


SAMPLE KEY PLAN
FUTURE LOTS PHASE 2
FUTURE LOTS PHASE 2
N
ROAD NAME
PHASE 1 - SUBDIVISION BOUNDARY
REGISTERED ROAD NAME
1000-C1 + 1000-E1
1000-C2 + 1000-E2
1000-P1
1000-P2
1000-P3
1000-P4
1000-P5
REGISTERED ROAD NAME
LEGAL DESCRIPTION OF NEIGHBOURING PROPERTY
LEGAL DESCRIPTION OF NEIGHBOURING PROPERTY
LEGAL DESCRIPTION OF NEIGHBOURING PROPERTY
LEGAL DESCRIPTION OF NEIGHBOURING PROPERTY
LEGEND
REVISION
REVISION
ABC ENGINEER SEAL
1:750
ABC ENGINEERING LTD.
SAMPLEVILLE SUBDIVISION
XYZ DEVELOPMENT Ltd.
SAMPLE KEY PLAN
99-004
2


REGISTERED ROAD NAME
ABC ENGINEER SEAL
SAMPLEVILLE SUBDIVISION
XYZ DEVELOPMENT Ltd.
SAMPLE PLAN & PROFILE
99/005
2

APPENDIX C

SUMMERLAND SIDEWALK PLAN