



**CITY OF RICHMOND**

**REPORT TO COMMITTEE**

**TO:** Public Works and Transportation Committee

**FROM:** Steve Ono, P.Eng.  
Director, Engineering

**RE:** Ditch and Watercourse Protection and Regulation Bylaw No. 7285

To PW + T - Dec. 5/01  
DATE: November 19, 2001

FILE: 8060-20-7285

**STAFF RECOMMENDATION**

That Ditch and Watercourse Protection and Regulation Bylaw No. 7285 be introduced and given first, second and third readings.

for Steve Ono, P.Eng.  
Director, Engineering

**FOR ORIGINATING DIVISION USE ONLY**

<b>ROUTED TO:</b>	<b>CONCURRENCE</b>	<b>CONCURRENCE OF GENERAL MANAGER</b>
Community Bylaws .....	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	
Sewerage & Drainage.....	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	
City Clerk .....	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	
Building Approvals .....	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	
Law .....	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	

## STAFF REPORT

### ORIGIN

The purpose of this report is to present a bylaw which takes a more simplified approach to the current practices for administration of ditch crossing permits and for protection of City ditches. In doing so, this report will also address questions which arose during the Public Works and Transportation Committee meeting on July 18, 2001 regarding the need for the existing 1.5 metre setback requirement from property line for culvert infills, as well as ditch infill practices in the Steveston Townsite.

### ANALYSIS

#### 1. Current Bylaw

Currently, construction of ditch crossings and installation of culvert pipe in City ditches is regulated under Ditch Filling and Construction of Ditch Crossing Regulation Bylaw No. 6370. Bylaw 6370 enables property owners to install temporary culvert pipe in City ditches fronting their property under permit issued by the City. A condition of the permit is that the property owner assumes responsibility for maintenance and liability for the culvert pipe.

Bylaw No. 6370 was adopted in 1994. In addition to addressing technical issues, the proposed new bylaw advances the initiative of the City Clerk's office of updating and standardizing all City bylaws towards development of the Municipal Code. Specifically:

- inconsistent language, structure and format have been corrected;
- language and terminology in the bylaw have been updated and modernized;
- definitions have been updated and made consistent with other City bylaws;

#### 2. Current Issues

The following aspects of Bylaw 6370 create issues regarding culvert infills in City ditches:

1. Setback From Property Line or Adjacent Culvert – Currently, in order to facilitate cleaning of ditches, the end of a new culvert pipe must be installed no closer than 1.5m (5 feet) from property line, or 3m (10 feet) from the end of an adjacent culvert pipe. This results in many situations where a 3m long open ditch remains after two adjacent culverts have been installed in a ditch. These short stretches of ditch can be unsightly and maintenance intensive.

The proposed new bylaw would eliminate many of these short stretches of open ditch by eliminating this setback requirement. This would replace the short stretches of ditch with culvert pipe. Piped drainage systems are easier to maintain than open ditch.

2. Permission From Neighbour Prior to Connection to Neighbour's Culvert – Where two adjacent culverts are to be joined at the property line, culvert infill applicants are currently required to obtain written agreement from the neighbouring property owner for joint responsibility for the full length of the combined culvert. Where such agreement cannot be obtained, the setback requirements as noted in item 1. above are invoked.

The proposed new bylaw would eliminate the requirement for written agreement between neighbouring property owners thus simplifying the culvert permit process. Rather, each property owner would be responsible for the portion of culvert fronting their property from property line to property line.

3. Owner of Culvert Pipe – Currently, the owner responsible for a new culvert pipe may be interpreted as the applicant named on the ditch crossing permit. In fact, the applicant is periodically a contractor on behalf of the owner of the property where the culvert is being installed.

The proposed new bylaw clarifies that the owner of the culvert pipe is the property owner so that this ambiguity is eliminated.

4. Construction Specifications – Currently, the construction specifications on the face of the application for a ditch crossing permit do not refer to the City's standard construction specifications.

The proposed new bylaw defers approved materials and construction standards for new culvert installations to the City's current construction specifications.

5. Permit Fees – Currently, the permit fee of \$50.00 is insufficient for administration of ditch crossings which includes City survey crew costs.

The proposed new bylaw increases the permit fee to \$100.00.

6. Security Deposit – Currently, the refundable security deposit for ditch crossings is \$1,000. This amount has recently proven insufficient to motivate a ditch crossing applicant to correct deficient work associated with his ditch crossing installation.

The proposed new bylaw increases the refundable security deposit to \$1,500.

Where existing culverts end within 1.5m of a property line pursuant to the current Bylaw requirement, and a new culvert infill is proposed by the owner of the neighbouring property staff would administer culvert infills as follows:

- the proponent of the new culvert would be permitted to install their culvert along the full extent of the frontage or flankage of their property.
- the City would pay for and/or complete the culvert enclosure for the final 1.5m of open ditch fronting or flanking the neighbouring property under the drainage maintenance and operations budget.

While the enclosure of piecemeal 1.5m stretches of ditch will add immediate costs to the City's drainage maintenance budget, over time as the short stretches of open ditch are eliminated, the drainage maintenance costs should decrease. Maintenance costs for piped drainage systems are generally lower than for open ditches.

#### Steveston Townsite

In June of 1992, Council passed a resolution directing staff to amend Subdivision Bylaw 5428, and Richmond Off-site Works and Services Bylaw 5720 to exclude Steveston townsite from

their provisions. Basis for the exclusion was a concern that contribution for off-site works and services was collected on lots that were subdivided back to their original width. Specifically, the concern was, although the lots in Steveston townsite were originally subdivided into 10.05 meter wide lots, a number of them were subsequently consolidated for building permit setback requirements. They were more recently subdivided back to their original size and contributions were collected for off-site works and services.

As a result of the exclusions from Bylaw 5428 and 5720, developments within the Steveston townsite do not need to provide adjacent street improvements such as curb, gutter, sidewalk, streetlighting and storm sewers. Accordingly, during re-development, many ditches in Steveston are infilled under culvert infill permit rather than through provision of fully improved streets.

### FINANCIAL IMPACT

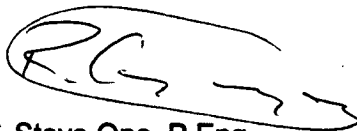
This recommendation may add \$25,000 to \$50,000 per annum in additional costs to the drainage maintenance budget for enclosure of short (1.5 meter) stretches of open ditch between existing culverts installed in accordance with current Bylaw 6370, and new culverts installed in accordance with the proposed new bylaw. This amount would be absorbed under the ditch/canal cleaning program in the operational budget of the storm drainage department or under the Public Works Minor Capital program in the short term, as it is anticipated that this investment would decrease ditch cleaning and maintenance costs over the long term.

This estimate will vary depending on the number of culvert infill applications received in a year, and on the specific site conditions for the culvert infills.

In the past one year period ending July 27, 2001, 35 culvert infill applications were received.

### CONCLUSION

The proposed new bylaw will help to eliminate short stretches of open ditch between culvert infills, clarify responsibility for ownership of the culverts and clarify the construction specifications for the culverts.



*for* Steve Ono, P.Eng.  
Director, Engineering

:so



CITY OF RICHMOND

***DITCH AND WATERCOURSE PROTECTION AND  
REGULATION***

**BYLAW NO. 7285**

EFFECTIVE DATE –

**CITY OF RICHMOND**

**DITCH AND WATERCOURSE PROTECTION AND  
REGULATION BYLAW NO. 7285**

The Council of the City of Richmond enacts as follows:

**PART ONE: GENERAL PROHIBITIONS**

1.1 A person must not:

- (a) pollute, obstruct or impede the flow of any stream, creek, waterway, watercourse, waterworks, ditch, drain or sewer, whether or not it is located on private property;
- (b) construct any **ditch crossing** except in accordance with Part Two; or
- (c) place any fill, concrete, timber or other structure or materials in a **highway ditch**, except with the permission of the **General Manager of Engineering & Public Works**.

**PART TWO: DITCH CROSSING PERMIT REQUIREMENTS AND  
SPECIFICATIONS**

2.1 **Ditch Crossing Permit Requirements – Standard Width**

2.1.1 Every person who proposes to construct a **ditch crossing** across a **highway ditch** must:

- (a) apply to the **General Manager of Engineering & Public Works**, for a **ditch crossing** permit in the form set out in Schedule A,
- (b) pay a permit fee of \$100;
- (c) comply with:
  - (i) the construction specifications in Schedule A; and
  - (ii) the instructions on the **ditch crossing** permit in Schedule B,both of which are attached and form a part of this bylaw; and
- (d) submit a cash deposit or Irrevocable Letter Of Credit in favour of the **City**, in the amount of \$1,500 to the **General Manager of Engineering & Public Works**, to secure:

- (i) the completion of the **ditch crossing**; and
- (ii) the cleaning and restoration of any portion of the **highway** or **City** property affected by the construction of the **ditch crossing**, to the condition which existed prior to the construction of such **ditch crossing**, as determined by the **General Manager of Engineering & Public Works**.

## 2.2 Ditch Crossing Permit Requirements – Extended Width

2.2.1 In addition to complying with the requirements of subsection 2.1.1, where a person proposes to construct a **ditch crossing** over a width exceeding 7.6 metres abutting a **residential lot**, or 12.2 metres abutting any other property, the application for a **ditch crossing** permit must be accompanied by:

- (a) design drawings at a scale of 1 to 500;
- (b) construction specifications; and
- (c) an engineering cost estimate for the construction,

all of which must be prepared and sealed by a member of the Association of Professional Engineers and Geoscientists of the Province of British Columbia; and

- (d) an inspection fee of 4% of the engineering cost estimate referred to in clause (c).

2.2.2 The design drawings, construction specifications and engineering cost estimate required under subsection 2.2.1 are to be prepared at the expense of the person applying for the **ditch crossing** permit.

## 2.3 Issuance of Ditch Crossing Permit

2.3.1 The **General Manager, Engineering & Public Works**, upon receipt of an application under section 2.1 or 2.2, must examine the application, and if satisfied that the proposed **ditch crossing**:

- (a) complies with the requirements of section 2.1, and where applicable, section 2.2; and
- (b) will not interfere with the **City** drainage system,

must issue a **ditch crossing** permit in the form set out in Schedule B.

## 2.4 Authority of the General Manager of Engineering & Public Works

2.4.1 Where:

- (a) a **ditch crossing** which is not constructed in compliance with the requirements of Part Two, has been installed in a **highway ditch**;

- (b) fill, concrete, timber or other structure or materials have been placed in a **highway ditch**, without the authorization of the **General Manager of Engineering & Public Works**; or
  - (c) other works have been undertaken in relation to a **highway ditch** which, in the opinion of the **General Manager of Engineering & Public Works**, interfere with the safety and convenience of the public,
- and
- (d) the **General Manager of Engineering & Public Works** is satisfied that the owner of the property adjacent to the portion of the **highway ditch** in question is the party responsible for the installation of the works referred to in clause (a), clause (b) or clause (c),

the **General Manager of Engineering & Public Works** may require the owner of the property adjacent to the portion of the **highway ditch** in question to remove the **ditch crossing**, the fill, concrete, timber or other structure or materials, or other works, as applicable, by giving notice in writing to the owner and occupier of such property, in accordance with subsection 2.4.2.

2.4.2 The notice referred to in subsection 2.4.1 must specify:

- (a) the work to be undertaken by the owner of the property adjacent to the portion of the **highway ditch** in question;
- (b) the period of time within which the work must be completed;

and be served in accordance with subsection 2.4.4.

2.4.3 The notice referred to in subsection 2.4.1 must be served:

- (a) on the owner of the property adjacent to the portion of the **highway ditch** from which the **ditch crossing** or fill, concrete, timber or other structure or materials, or other works referred to in subsection 2.4.1 are to be removed, by either:
  - (i) personal service, or
  - (ii) registered mail with acknowledgement of receipt, to the address of the owner shown on the last real property assessment rolls;

provided that where such owner is a registered company, service may be effected according to the provisions of the *Company Act*; and

- (b) on the occupier of the property adjacent to the portion of the **highway ditch** from which the **ditch crossing** or fill, concrete, timber or other structure or materials, or other works referred to in subsection 2.4.1 are to be removed, by either:



- (i) personal service,
  - (ii) delivery to a mail box or other receptacle for messages, if any, on the real property, or
  - (iii) posting on the real property; and
- (c) on any agent of the owner or occupier of the property adjacent to the portion of the **highway ditch** from which the **ditch crossing** or fill, concrete, timber or other structure or materials or other works referred to in subsection 2.4.1 are to be removed, by either:
- (i) personal service, or
  - (ii) registered mail with acknowledgement of receipt.
- 2.4.5 A notice which is not personally served is deemed to have been served:
- (a) on the third day after mailing in accordance with clause (a)(ii) or (c)(ii), whichever is applicable;
  - (b) upon delivery in accordance with clause (b) (ii); or
  - (c) upon posting in accordance with clause (b) (iii) of subsection 2.4.4.
- 2.4.6 If the requirements of the said notice are not complied with within the period specified, the **General Manager of Engineering & Public Works** may:
- (a) direct **City** staff, or a contractor acting under his direction, to enter onto the property to undertake the work required specified in the notice; and
  - (b) invoice the property owner for the cost of such work.
- 2.4.7 Where the property owner or occupier fails to reimburse the **City** as required under the provisions of subsection 2.4.6, on or before December 31<sup>st</sup> in the year in which the costs are incurred, the property owner is considered to have violated the provisions of this bylaw.

## 2.5 Protection Against Liability

- 2.5.1 The liability of the **City** is limited by the provisions of Section 37 of the *Municipalities Enabling and Validating Act*, which applies to:
- (a) the construction of any **ditch crossing**; and
  - (b) the placement of any fill, concrete, timber or other structure or materials in a **highway ditch**.

## PART THREE: VIOLATIONS AND PENALTIES

### 3.1 Any person who:

- (a) violates or who causes or allows any of the provisions of this bylaw to be violated; or

- (b) fails to comply with any of the provisions of this, or any other bylaw or applicable statute; or
- (c) neglects or refrains from doing anything required by this bylaw; or
- (d) makes any false or misleading statement in connection with this bylaw,

is deemed to have committed an infraction of, or an offence against, this bylaw, and is liable on summary conviction, to the penalties provided for in the *Offence Act*, and each day that such violation is caused, or allowed to continue, constitutes a separate offence.

**PART FOUR: INTERPRETATION**

4.1 In this bylaw, the following words have the following meanings:

<b>CITY</b>	means the City of Richmond.
<b>DITCH CROSSING</b>	means any bridge, culvert, driveway or other construction spanning a <b>highway ditch</b> .
<b>GENERAL MANAGER OF ENGINEERING &amp; PUBLIC WORKS</b>	means the person appointed by Council to the position of General Manager of Engineering & Public Works, and includes a person designated as an alternate.
<b>HIGHWAY</b>	means a street, road, lane and any other way open to public use, but does not include a private right-of-way on private property.
<b>HIGHWAY DITCH</b>	means a drainage ditch located adjacent to a <b>highway</b> in the possession and control of the <b>City</b> .
<b>RESIDENTIAL LOT</b>	means a property whose use pertains to the accommodation and home life of a family.

**PART FIVE: PREVIOUS BYLAW REPEAL**

- 5.1 Ditchfilling and Construction of Ditch Crossings Bylaw No. 6370 (adopted October 11, 1994) is repealed.
- 5.2 Drainage Protection Bylaw No. 1885 (adopted March 5, 1962) is repealed.

**PART SIX: SEVERABILITY AND CITATION**

- 6.1 If any part, section, sub-section, clause, or sub-clause of this bylaw is, for any reason, held to be invalid by the decision of a Court of competent jurisdiction, such decision does not affect the validity of the remaining portions of this bylaw.
- 6.2 This bylaw is cited as "Ditch and Watercourse Protection and Regulation Bylaw No. 7285".

FIRST READING

SECOND READING

THIRD READING

ADOPTED

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

CITY OF RICHMOND
<b>APPROVED</b>
for content by originating dept.
<b>APPROVED</b> for legality by Solicitor

\_\_\_\_\_  
MAYOR

\_\_\_\_\_  
CITY CLERK

SCHEDULE A to BYLAW NO. 7285

APPLICATION FOR DITCH CROSSING PERMIT

Name (Property Owner): \_\_\_\_\_ Telephone No: \_\_\_\_\_

Address of Property: \_\_\_\_\_

Lot \_\_\_\_\_ Block \_\_\_\_\_ Section \_\_\_\_\_ Block \_\_\_\_\_ N., Range \_\_\_\_\_ W., Plan \_\_\_\_\_

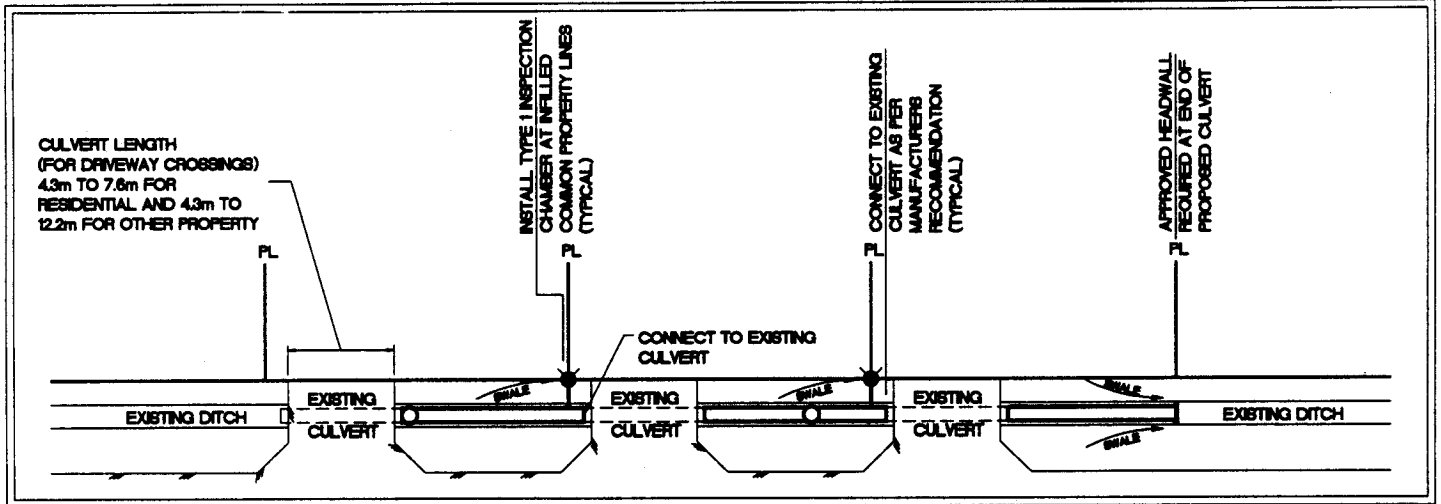
I hereby make application for permission to construct a ditch crossing across a highway ditch for the purpose of:

I understand that, if this application is approved, I must abide by the following specifications (please check relevant column):

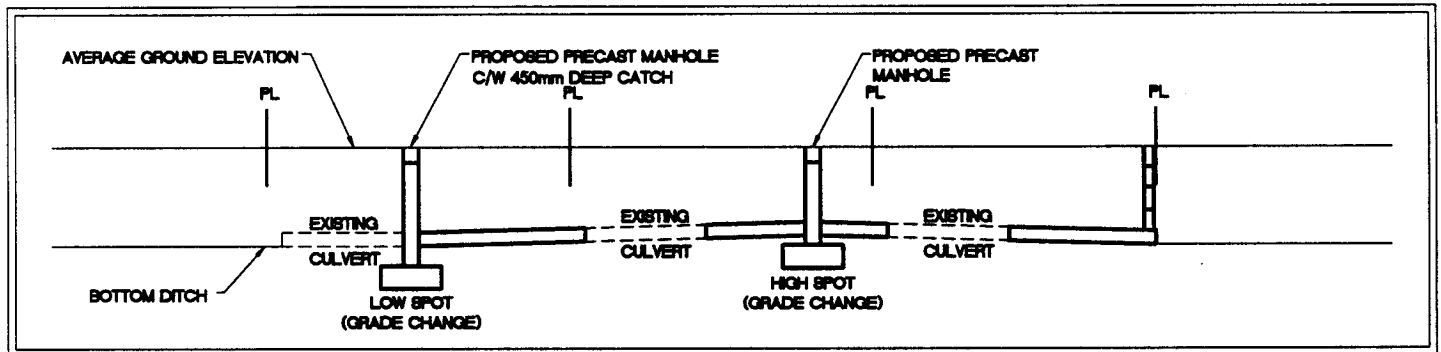
<input type="checkbox"/> Culvert	<input type="checkbox"/> Bridge
<ol style="list-style-type: none"> <li>1. City survey crew will provide grade. Two (2) days advance notice required to receive grade stakes.</li> <li>2. Culvert to be kept clear of all service connections (water, gas, etc). Property owner is responsible for relocation of same.</li> <li>3. Diameter and length to be as shown on the permit (Schedule "B").</li> <li>4. Maximum culvert length to be 7.6 m for residential lots and 12.2 m for other property. Culverts of greater lengths require design by a Professional Engineer in accordance with City Engineering design and drafting standards. Refer to page 2 of 2 for general arrangements.</li> <li>5. Where possible adjacent culverts must be joined at the property line, the owner of each property is responsible for the portion of culvert and ancillary drainage fronting their property.</li> <li>6. In areas where peat soils exist at ditch bottom, such peat shall be totally excavated to firm ground and backfilled with compacted sand and gravel. Property owner is responsible for any settlement. Peat is to be excavated 1.5 m beyond the culvert.</li> <li>7. A minimum of 100 mm gravel bedding required under culvert pipe.</li> <li>8. Property owner to request City inspection following completion of excavation and bedding and again following completion and construction including headwalls. Time between initial and final inspection not to exceed 30 days.</li> <li>9. Only approved, undamaged pipe, manholes, inspection chambers and appurtenances thereof are permitted as determined by the General Manager of Engineering and Public Works. Installation and materials shall conform strictly with manufacturer's recommendation and the City's Master Municipal Construction Documents and Supplementary Specifications.</li> <li>10. Excavations and obstructions to be properly shielded (signed, barricaded, lit etc.). Property owner to be responsible for all accidents or claims arising due to this installation.</li> <li>11. Adjacent highway, City property and surroundings to be restored by property owner to condition prior to construction or better condition, and cleaned of all debris.</li> <li>12. Property owner to maintain culvert and adjacent ditch to ensure no obstruction to the free flow of water during the life of the ditch crossing.</li> </ol>	<ol style="list-style-type: none"> <li>1. Property owner to clean existing ditch sides and bottom and to provide a solid footing for bridge seat.</li> <li>2. Bridge to be kept clear of all service connections (water, gas, etc). Property owner responsible for relocation of same.</li> <li>3. Existing ditch dimensions and proposed size of bridge to be shown by the property owner on the permit form (Schedule "B"). Maximum width of bridge to be 7.6 m for residential lots and 12.2 m for other property. Bridges of greater width require design by Professional Engineer in accordance with City Engineering design and drafting standards.</li> <li>4. End of bridge to be located no closer than 1.5m from adjacent property line and 3.0 m from end of adjacent bridge or culvert.</li> <li>5. Where two bridges must be joined at the property line. Property owner must obtain written undertaking that both property owners are jointly responsible for combined length of bridge and local surface drainage.</li> <li>6. Excavation and obstructions to be properly shielded (signed, barricaded, lit, etc.). Property owner to be responsible for all accidents or claims arising due to this installation.</li> <li>7. Adjacent highway, City property and surrounding area to be restored by property owner to condition prior to construction or better condition and cleaned of all debris.</li> <li>8. Property owner responsible for structural adequacy of bridge.</li> <li>9. Property owner to maintain ditch under bridge to ensure no obstruction to free flow of water during the life of this ditch crossing.</li> </ol>

SCHEDULE A to BYLAW NO. 7285

APPLICATION FOR DITCH CROSSING PERMIT



Plan



Profile

1. Location of manholes to be determined by the City.
2. Existing services to be relocated by City/Utility Co. at property owner's expense.
3. Approved contractor and undertaking of liability insurance per City of Richmond standards is required for installation.

*I have read the specifications in this application (relevant to the column checked) and if permission is granted for this construction, agree to abide by them.*

*In the case of a ditch crossing over a width exceeding 7.6 metres (residential lots) or 12.2 metres (other property), I attach sealed design drawings, construction cost estimate and specifications prepared by a member of the Association of Professional Engineers and Geoscientists of the Province of British Columbia and agree to abide by them.*

Signed: \_\_\_\_\_  
(Property Owner)

Date: \_\_\_\_\_

SCHEDULE B to BYLAW NO. 7285

DITCH CROSSING PERMIT

Name (Property Owner): \_\_\_\_\_ Telephone No: \_\_\_\_\_

Address of Property: \_\_\_\_\_

Lot \_\_\_\_\_ Block \_\_\_\_\_ Section \_\_\_\_\_ Block \_\_\_\_\_ N., Range \_\_\_\_\_ W., Plan \_\_\_\_\_

This is your authorization to construct or install the works described in this permit, in the location:

This permit is issued subject to compliance with the specifications in Schedule "A", and may be revoked at any time that any part of Schedule "A" or the instructions set out below are not complied with. Any exceptions must be noted and must receive approval in advance.

Installation to be started on or before \_\_\_\_\_

Date this \_\_\_\_\_ day of \_\_\_\_\_

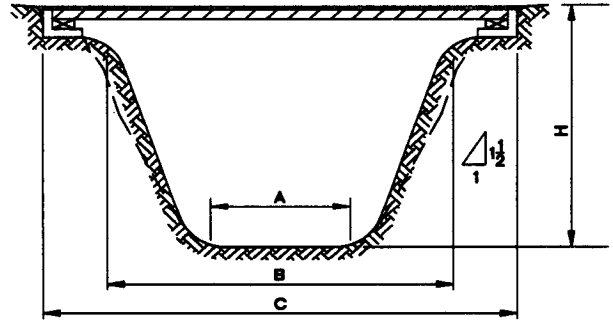
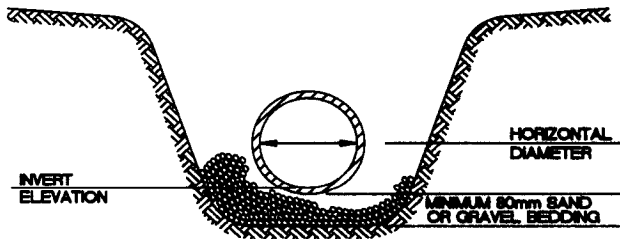
Culvert  Bridge

Diameter:	Bottom of Ditch (A):	Top of Ditch (B):
Length:	Width of Bridge:	Height of Ditch (H):
Invert Elevation:	Span of Bridge (C):	

Manholes (Inc. Size and Location): \_\_\_\_\_

Design Drawings prepared by: \_\_\_\_\_ Date: \_\_\_\_\_

Estimated Cost of Works: \_\_\_\_\_ Inspection Fee: \_\_\_\_\_



LOCATION:  Existing Crossing  Owner to Mark  
 SPECIAL NOTES (if any): \_\_\_\_\_

General Manager, Engineering & Public Works or Designate  
**INSPECTION REPORT**

Date Completion of Base:	Date Ditch Cleaned:
Date Final Completion:	Date Final Completion:
Signed:	Signed: