



## Constructing a Watercourse Crossing

**No.: ENGINEERING-04**

**Date: 2011-05-09**

**Revised: 2020-03-11**

This information bulletin is provided for information purposes only. The provisions of the Watercourse Protection Bylaw No. 8441, as amended or replaced from time to time, and all other laws and other relevant City bylaws shall always take precedence.

### **Purpose:**

To inform property owners/applicants, designers and contractors of the City requirements for designing and constructing a watercourse crossing along the frontage of their property.

### **Background:**

The City has adopted the Watercourse Protection and Crossing Bylaw No. 8441. The City provides a user-pay design service for accurate, field-verified design drawings. Design drawings are necessary to ensure proper drainage and connections to existing and future systems, and to facilitate the installation process.

### **Implementation:**

**Effective January 1, 2020**, the City requires the applicant to:

1. Submit an application to the City along with a non-refundable application fee:
  - culvert – \$366
  - bridge – \$125
2. If the watercourse crossing is located in the Riparian Management Area (RMA), obtain written approval to proceed from Fisheries and Oceans Canada. For RMA information, please contact the Environmental Coordinator at 604-247-4661 or 604-276-4196 or visit [www.richmond.ca](http://www.richmond.ca).
3. Submit design drawings prepared, signed and sealed by a Professional Engineer in accordance with the City's approved edition of the City of Richmond Engineering Design Specifications. A City Design Option is available at a fee of \$1,204 if the watercourse crossing is a culvert and the watercourse is located outside of a RMA, but is subject to the availability of City resources. To ensure that the watercourse crossing will function properly, and can be installed efficiently without incurring additional, unnecessary expense, drawing(s) must be in accordance with the City's approved edition of the Master Municipal Construction Documents (MMCD), the City of Richmond Supplementary Specifications and Detail Drawings, City of Richmond Bylaws, and include, but not limited to the following:
  - provide grades and elevations in geodetic datum;
  - show ditch elevations fronting the site surveyed at 5.0 m (15 feet) intervals and up to 10.0 m (30 feet) past frontage to show all grade breaks of existing storm sewers;

See over →

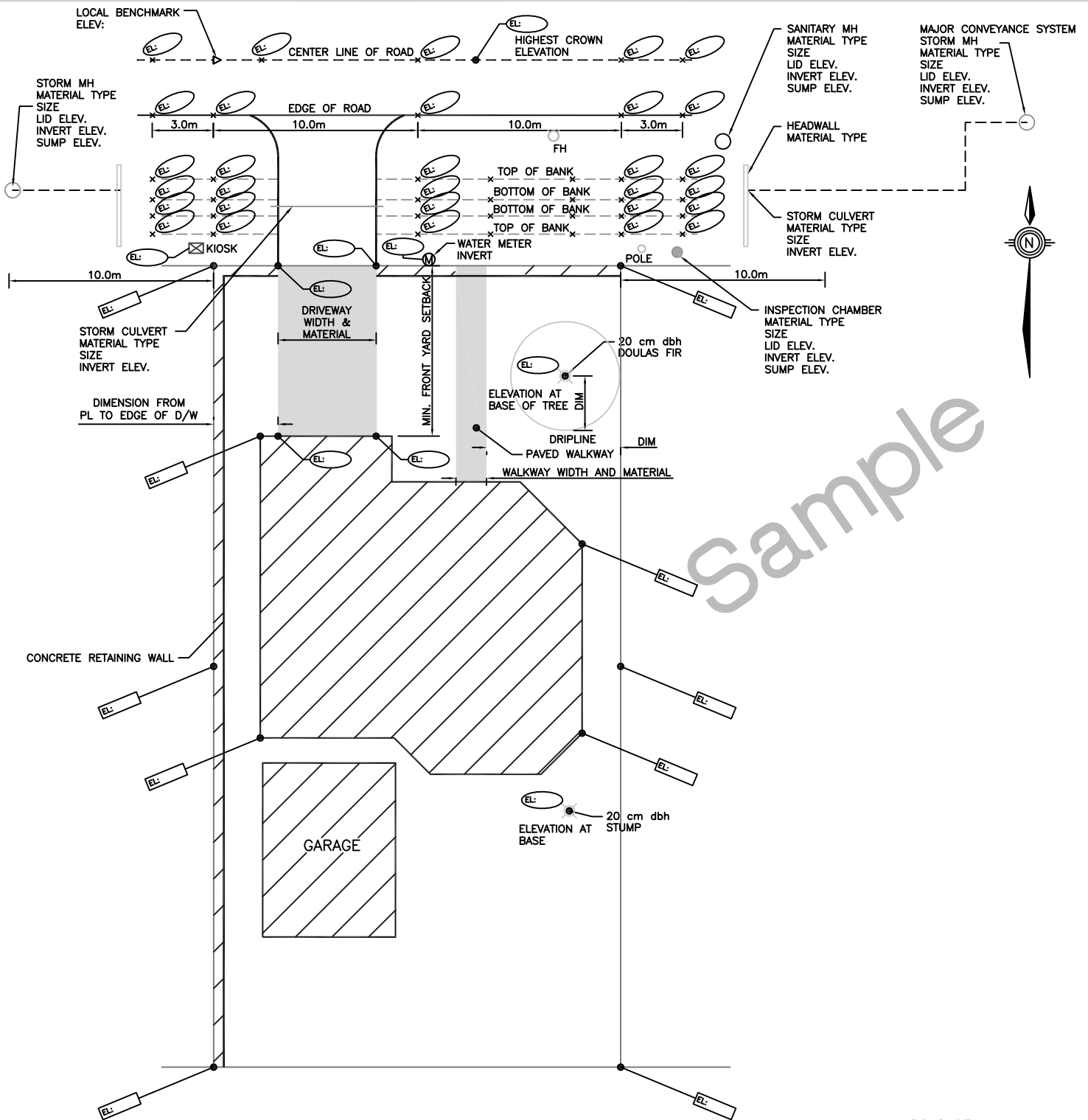
- show boulevard ground elevations fronting the site surveyed at 5.0 m (15 feet) intervals and locate noticeable high and low spots up to 5.0 m (15 feet) past frontage;
- locate all structures such as streetlights, fire hydrants, kiosks, poles, junction boxes, water connections, vaults, sidewalks, railings, retaining walls, bollards, signage and other obstructions fronting the site and 5.0 m (15 feet) past frontage;
- locate all driveways noting width, material and type of ditch crossing (i.e. bridge, culvert, etc.) that includes elevations and existing grades;
- show existing lot grades, including the average grade;
- identify all storm and sanitary pipes, manholes and inspection chambers, including inverts, material, pipe size, and sump and rim elevations;
- show elevations at 1.5 m (5 feet) onto adjacent properties, including existing retaining walls;
- locate the highest crown elevation of any public road abutting the lot;
- locate the edge and show the elevation of any public road abutting the lot at 10 m intervals;
- locate all trees greater than 20 cm (7 7/8 inches) in diameter measured 1.4 m (4 feet 7 inches) above the ground (diameter at breast height—dbh), including adjacent property trees within 1.5 m (5 feet) of the boundary of the site or with a dripline overlapping the site, and trees on any City street or lane allowances adjacent to the site;
- show the location of any tree stump greater than 20 cm dbh on the site;
- show tree grades (existing tree base elevations) for trees greater than 20 cm dbh; and
- show the drip line (extent of branches) and species (type) of trees greater than 20 cm dbh.

**Applicants must provide information Items listed above on a survey plan (see attached sample) as a minimum.**

4. Pay a non-refundable inspection:
  - culvert – \$123 plus \$24.75 per additional linear metre of culvert over 5 metres wide
  - bridge – \$244
5. Provide evidence of, comprehensive general liability insurance with a limit of not less than \$5,000,000.00 inclusive per occurrence for bodily injury and property damage. The insurance must be endorsed to add the City as an additional insurance and contain a provision requiring that at least 30 days notice be given to the City prior to cancellation or expiry.
6. Provide a refundable security deposit in the amount of \$5,000.

For further information please contact the Engineering Department at 604-247-4632.

See attached →



SITE PLAN  
SCALE

BCLC SEAL:  
SIGNED & DATED

ALL ELEVATIONS TO  
HPN BENCHMARK

LEGEND

EL: EXISTING GRADE ELEVATION FROM TOPOGRAPHIC PLAN



CITY OF RICHMOND

Sample  
Watercourse Crossing Survey Plan

City of Richmond *Engineering Planning*

Dwg No.  
Sheet 1 of 1

Date 2019-12-19