



Constructing a Watercourse Crossing

No.: ENGINEERING-04
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This information bulletin is provided for information purposes only and 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The City has repealed Ditch and Watercourse Protection and Regulation Bylaw No. 7285 and adopted Watercourse Protection and Crossing Bylaw No. 8441. The City provides a user-pay design service for the provision of 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, 2013, the City requires the applicant to:

1. Submit an application to the City along with a non-refundable application fee:
 - culvert – \$334
 - bridge – \$113
2. Obtain written approval from Fisheries and Oceans Canada, if watercourse crossing is located in a Riparian Management Area (RMA). For RMA information, please contact the Environmental Coordinator at 604-276-4230 or visit www.richmond.ca.
3. Obtain letter from adjacent property owner granting permission to join culverts, if applicable. 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 \$1,106 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 ditch in-fill drainage system will function properly, and can be installed efficiently without incurring additional, unnecessary expense, drawing(s) must be in accordance with City Engineering Department Drafting Standards (Aug 2002), and include, but not limited to the following: (**Grades must be given to 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;
 - 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;

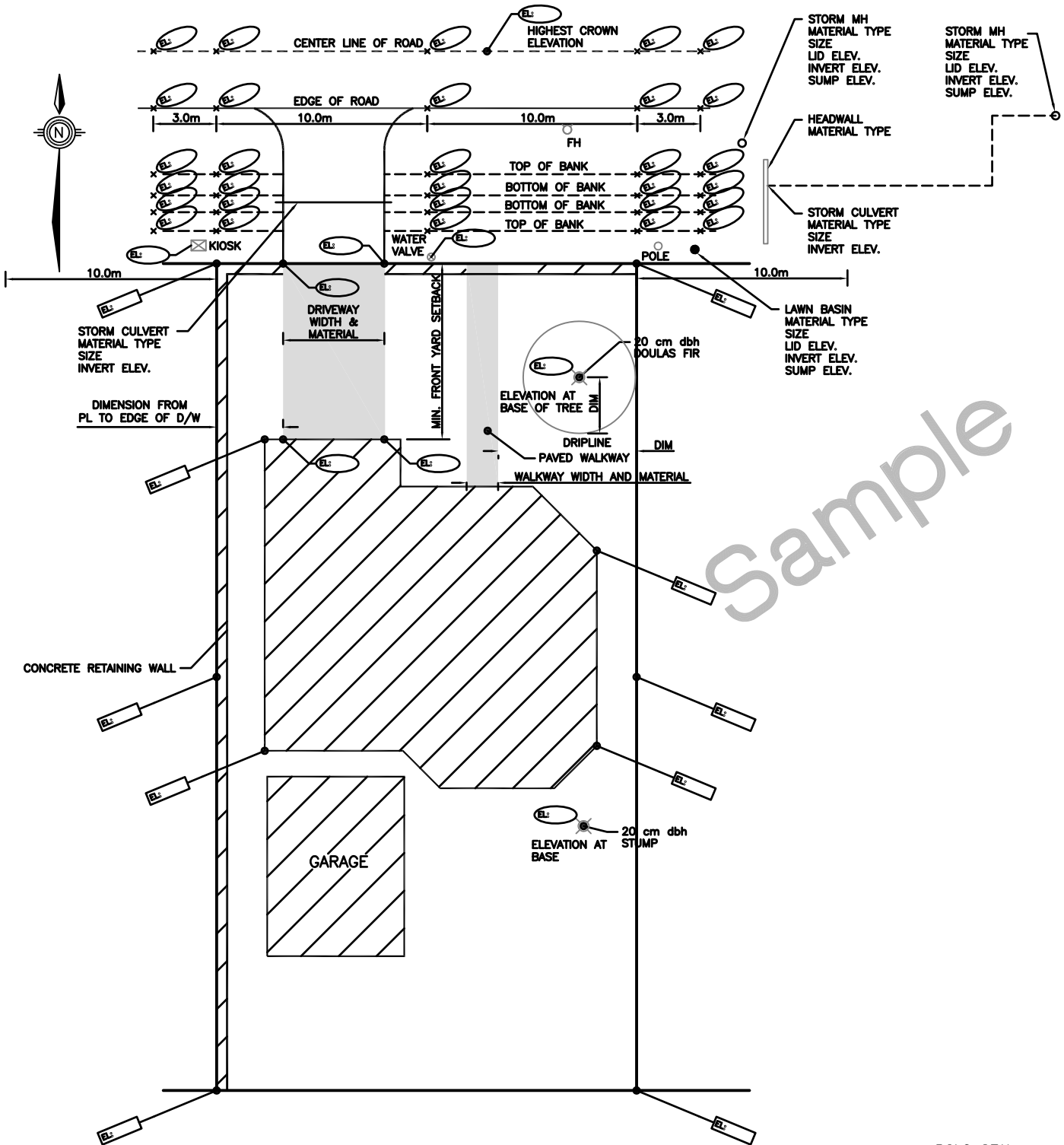
See over →

- 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 10m 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 – \$22.50 per linear metre of culvert
 - bridge – \$223
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 Mapping Technician 2, Engineering Department at 604-276-4171.



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 2012-10-25