

Schedule C

Standards for Clearing, Grading, Draining and Surfacing Streets

1 Clearing and Grading

- 1.1 The entire area of all streets shall be cleared, stumped, and grubbed and all waste material removed and disposed of, except that the City Engineer may allow specific trees and/or plants to remain.
- 1.2 The entire area of all streets shall be brought to the designed grades and shapes. All unsuitable native material shall be removed and replaced or otherwise dealt with according to good engineering practice. All boulders shall be removed or cut down to give at least 500mm clearance below subgrade in areas to be surfaced and at least 300mm below grade in the balance of the street allowance.

2 Drainage

- 2.1 The surface drainage from all pavements shall be carried through catch basins to a storm sewer or combined sewer system.
- 2.2 Ground water shall be intercepted and collected as necessary to prevent it reaching the subgrade or flowing over the sidewalks and pavements and shall be carried through catch basins to the storm sewer or combined sewer system.
- 2.3 Ditches in lanes shall be connected through catch basins to the storm sewer or combined sewer system.
- 2.4 Any natural watercourse which crosses or enters any street allowance shall either be carried across the street allowance in a permanent culvert or be intercepted before it reaches the street and carried to the storm sewer or combined sewer system.
- 2.5 The hydraulic and structural design, details and construction of such culverts shall be to the satisfaction of the City Engineer. Where any such culverts enter or leave the streets they shall be provided with headwalls or other suitable provision made so that the entire area of the street can be brought to the design as required in Section 10 of this schedule.

3 Surfacing

3.1 Sidewalks

3.1.1 Scope

Permanent sidewalks shall be installed on each side of all streets except lanes, provided that the City Engineer may waive the requirement of any sidewalk if, in his opinion, special features of the subdivision make it unnecessary.

3.1.2 Material and Construction

Sidewalks shall be of Portland cement concrete which conforms to the current specifications of the City Engineer and laid in one course. The surface shall have a broomed finish and on grades over 14 percent corrugations shall be added for one-half of the width.

3.1.3 Width and Thickness

The width of sidewalks shall be:

- (a) Walks serving multiple or single detached house or duplex property -- 1.5m
- (b) Walks serving commercial property -- 1.8m
- (c) Walks serving industrial property -- 1.5m

The thickness of sidewalks shall be in accordance with the current specifications of the City Engineer.

3.2 Gravelled Lanes

3.2.1 Scope

Lanes which will serve only single detached house or duplex property shall have a gravelled roadway with side ditches, provided that any lane with a grade over 14% or any lane with a length greater than 200m between accesses to streets other than lanes shall be paved as prescribed in Subsection 3.3.

3.2.2 Material, Width and Thickness

Gravelled lanes shall be surfaced 5m wide with 150mm of compacted crushed gravel.

3.3 Paved Lanes

3.3.1 Scope

All lanes which will serve multiple dwelling, commercial or industrial property and lanes serving single detached house or duplex property which have a grade of 14% or a length greater than 200m between accesses to streets other than lanes shall be paved.

3.3.2 Material and Construction

Lane paving shall be of either asphaltic concrete or Portland cement concrete, laid with a centre valley gutter.

3.3.3 Width and Thickness

- (a) Lane paving serving only single detached house or duplex property shall be the full width of the lane. If of asphaltic concrete it shall be 50mm thick laid on 100mm of compacted crushed gravel and if of Portland cement concrete it shall be 115mm thick.
- (b) Lane paving serving any multiple dwelling, commercial or industrial property shall be the full width of the lane allowance and 125mm thick.

3.4 Paved Streets Other Than Lanes

3.4.1 Scope

All streets other than lanes shall have curbed pavements.

3.4.2 Curbs

Curbs shall be of Portland cement concrete, integral with either a Portland cement concrete gutter or a Portland cement concrete pavement. Curb dimensions shall conform to the current specifications of the City Engineer.

3.4.3 Strength Classes

- (a) Light
 - Where a light class of pavement is required it shall be one of the following:
 - 125mm of asphaltic concrete, or
 - 115mm of Portland cement concrete.
- (b) Intermediate
 - Where an intermediate class of pavement is required it shall be one of the following:
 - 140mm of asphaltic concrete, or
 - 125mm of Portland cement concrete.
- (c) Heavy
 - Where a heavy class of pavement is required it shall be one of the following:
 - 200mm of asphaltic concrete, or
 - 175mm of Portland cement concrete.

3.4.4 Required Width and Strength Class of Paving

Subject to paragraphs 3.4.5 and 3.4.6, the width between curb faces and the strength class of paving shall be as shown in the following table:

	Streets Other Than Lanes Serving:			
	Single Detached House or Duplex Property	Multiple Dwelling Property	Commercial Property	Industrial Property
Local Streets	8.5m light	11m intermediate	11m heavy	12m heavy
Collector Streets	10m intermediate	11m intermediate	13m heavy	14m heavy

3.4.5 Additional Provisions Regarding Width

The width between curb faces of paving on:

- (a) Streets abutting parks, secondary schools or churches shall be at least 11m.
- (b) Curved streets with a centre line radius of less than 150m shall be greater than prescribed in Subsection 3.4.4 and in (a) and (b) of this paragraph by the amount given by the formula:

$$A = \frac{150 - R}{50 - R} \quad \text{where A is the additional width in metres and R is the centre line radius in metres.}$$

- (c) Culs-de-sac shall have a radius of at least 9.75m.

3.4.6 Extra Width and Strength

- (a) The City Engineer may require that the width or the strength of any pavement be greater than indicated in Subsections 3.4.3, 3.4.4 and 3.4.5 if, in his opinion, the additional width or strength is necessary because of features of the ground, the topography, or the layout of the subdivision or by the volume or weight of the traffic which it will carry.
- (b) If additional width or strength of pavements is required under (a) hereof, and if it is necessary because of traffic which has both its origin and its destination outside of the subdivision, the additional cost, as determined by the City Engineer, shall be borne by the City.

3.5 Subgrade

The surfacing required in Subsections 3.1 to 3.4 inclusive shall be laid on a suitable subgrade meeting the following requirements:

- (a) The density of the subgrade, determined by ASTM-D1557 method A, shall be at least 96% for the top 300mm and at least 90% below that.
- (b) The deflection under an 8150kg axle, determined by a standard Benkelman Beam test shall not be greater than 2.5mm.

4 Design and Supervision

4.1 All work done under the provisions of this schedule shall be designed and supervised by Professional Engineers experienced in the several classes of work.

4.2 Enough competent and experienced inspectors, instrumentmen, and engineers shall be employed in the field to ensure full compliance with the drawings and specifications.

4.3 The design, construction, testing, control, and other related aspects of the work shall be in accordance with good current standards which for the purposes of this By-law are, in general, the related standards, specifications and practises of the City of Vancouver in effect at the time of approval of the subdivision.

5 Approval, Acceptance, Maintenance and Surety

5.1 Complete design drawings and specifications, along with such other contract documents, testing and inspection instructions, design notes and other related information as he may require, shall be submitted to the City Engineer for review. No work shall be commenced until the related drawings and specifications and any other required documents have been approved by the City Engineer.

5.2 The City Engineer may approve designs, specifications or materials differing from what is called for in this schedule if, in his opinion, they are at least the equivalent of those specified suitable and adequate.

5.3 The City Engineer shall be the final judge of the adequacy and correctness of the design and specifications and of the acceptability of the works or any part of them.

5.4 The applicant shall maintain the works in complete repair for a period of two years from the date of their acceptance by the City Engineer, correcting any fault or damage in a manner satisfactory to the City Engineer.

5.5 The applicant, along with some surety company authorized to carry on business in British Columbia shall enter into a bond in a form satisfactory to the Director of Legal Services, for an amount equal to one half of the total cost of the works to be done under the provisions of this schedule as estimated by the City Engineer. This bond shall be surety for the performance of all the work of clearing, draining and surfacing streets and for all the applicant's obligations in connection therewith under this By-law or under any agreement made thereunder, including the maintenance of the works as prescribed above.