

SCHEDULE C

REGULATIONS, STANDARDS AND SPECIFICATIONS FOR THE  
DESIGN AND CONSTRUCTION OF CURBS AND GUTTERS,  
SIDEWALKS AND BOULEVARDS

This is Schedule C of the Village of Fruitvale Subdivision and Development Servicing  
Bylaw No. \_\_, 1995

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Clerk

## SCHEDULE C

### REGULATIONS, STANDARDS AND SPECIFICATIONS FOR THE DESIGN AND CONSTRUCTION OF CURBS AND GUTTERS, SIDEWALKS AND BOULEVARDS

#### 1.0 GENERAL

##### 1.01 Standards and Specifications of this Schedule to Apply to All Works

Where the provisions of Schedule A of this Bylaw require the provision of curbs and gutters, sidewalks and boulevards, the Applicant shall construct such services in a manner consistent with the regulations, standards and specifications set out in this Schedule.

##### 1.02 Approval of Engineering Drawings Required prior to Construction

Engineering drawings showing detailed design of the necessary works shall be submitted to the Village Engineer for approval. No construction of the works shall commence until the design drawings have been approved by the Village Engineer.

##### 1.03 Curb, Gutter and Sidewalk Requirements

Curb, gutter and sidewalk shall be provided as follows:

###### Highway

<u>Classification</u>	<u>Curb Type Required</u>	<u>Minimum Sidewalk Widths</u>
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###### Residential Zones

Arterial	Non-mountable concrete	1.5 m
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Collector	Roll type concrete	1.35 m
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Local	Roll type concrete	1.35 m
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###### Commercial Zones

Arterial	Non-mountable concrete	1.85 m
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Collector	Non-mountable concrete	1.85 m
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Local Non-mountable concrete 1.85 m

### Industrial

Arterial Non-mountable concrete 1.85 m

Collector Non-mountable concrete N/A

Local Non-mountable concrete N/A

## 2.0 DESIGN CRITERIA

### 2.01 Design Gradient

The design gradient shall be as specified for roads in Schedule B of this Bylaw, except that the minimum gradient around curb returns and around cul-de-sacs shall be 0.5%.

### 2.02 Curb Return

The minimum curb return radius shall be as set out in Section 3.07 of Schedule B of this Bylaw. Elevations shall be shown on the engineering drawings for the beginning and end of the curb return, as well as at any changes in grades in between. Engineering drawings shall provide all geometric details, both vertically and horizontally, of curb returns.

### 2.03 Grading of Boulevards

Upon completion of road, curb and gutter and sidewalk constructions, boulevards shall be shaped and graded as shown on the Standard Drawings. Native material and 100 mm of top soil shall be placed flush with the top of curb or back of walk and shaped to conform with general lot grading. Unless otherwise approved, boulevards shall be graded to drain to the curb at a minimum slope of 3% and a maximum slope of 10%.

### 2.04 Granular Sub-base and Base Gravel Depths

Granular sub-base and base gravel depths for curb and gutters, sidewalks, driveways and commercial crossovers shall conform to the depths of sub-base and base gravels specified for the road as noted in Table B.7 of Schedule B.

### 2.05 Sidewalks Cross Section

Concrete sidewalks shall have a thickness not less than 100 mm and shall be constructed consistent with the Standard Drawings. The sidewalk shall be graded to drain to the curb at a slope of 2%.

### 2.06 Driveway Access Across Boulevards

Maximum driveway access across all Village boulevards shall be 3%. Where non-mountable curb is required under this Bylaw, only one access per parcel shall be permitted. In residential subdivisions, only one access per parcel shall be permitted unless the parcel frontage is greater than 75 m. The number of additional accesses shall be at the discretion of the

Village Engineer.

### 2.07 Curb and Gutter Cross Section

Curbs and gutters shall be constructed consistent with the Standard Drawings.

### 2.08 Commercial Crossovers

Commercial crossovers shall be provided at all access locations for usages other than residential.  
Commercial crossovers shall be constructed consistent with the Standard Drawings.

### 2.09 Wheelchair Ramps

Wheelchair ramps shall be provided at all intersections on streets provided with sidewalks.  
Wheelchair ramps shall be constructed consistent with the Standard Drawings.

## 3.0 MATERIALS

### 3.01 Base Material Granular Sub-Base and Base Course

Granular sub-base material shall be 75 mm minus gravel sub-base course conforming to gradation limits as referred in Schedule B, Article 3.03.

Granular Base material shall be granular 25 mm crushed gravel base course conforming to gradation limits as referenced in Schedule B, Article 3.04.

### 3.02 Concrete

Concrete shall conform to CSA CAN3-A23.1, Latest Edition; the mix design shall include the following:

- .1 Minimum compressive strength 30 MPa at 28 days;
- .2 Maximum aggregate size 19 mm for hand-formed; 10 mm for extruded;
- .3 Slump - 80 mm for hand-formed; 25 mm for extruded;
- .4 Air entrainment 6% - 8%.

### 3.03 Testing

The Applicant shall retain an independent materials testing firm to carry out comprehensive testing of concrete which shall be taken to include determination of unit weight of the plastic concrete, performing slump and air content tests and casting of test cylinders. One test consisting of three standard cylinders may be made for each 175 m of curb and gutter or sidewalk installed. In no case, however, will there be less than one test for concrete placed in one day. One cylinder shall be tested at seven days, and two at twenty-eight days. All test results shall be submitted to the Village Engineer for review and approval.

### 3.04 Curing Compound

Curing compound shall be spray-applied of liquid type conforming to ASTM C309 containing a fugitive dye applied at a rate recommended by the manufacture.

### 3.05 Boulevards Top Soil

Top soil used for boulevard improvement shall be loam, free from any rock, clay lumps, roots or any other deleterious material.

### 3.06 Driveway Approaches

Base for driveway approaches shall consist of a minimum of 300 mm of 75 mm minus pitrun gravel, 100 mm of 25 mm minus gravel placed on compacted subgrade. Approaches shall be paved using 50 mm hot mix asphalt.

## 4.0 WORKMANSHIP

### 4.01 Base Preparation

All topsoil, organic soils, peat, frozen materials, roots, branches or other deleterious material shall be removed and the base shall be excavated or filled to subgrade elevation prior to placement of granular base and sub-base material. All embankment material shall be compacted to 95% Standard Proctor Density. The top 300mm of sub-grade shall be compacted to 100% Standard Proctor Density. Granular sub-base and base shall be compacted to 100% Standard Proctor Density.

The granular base aggregate shall be moistened immediately prior to placing concrete.

### 4.02 Commercial and Industrial Crossovers

Commercial and industrial crossovers shall be built on a base with the same construction as the roadway they border. Commercial and industrial crossovers shall have a minimum concrete thickness of 150 mm and be reinforced with 15M metric bars on 300 mm centres both ways. Commercial and industrial crossovers shall have the concrete curb and gutter reinforced by two 15M bars running the full length between the extremities of the flare of the crossovers. Expansion joints shall be made at the sides of the crossover.

#### 4.03 Placing and Finishing Concrete

The Village Engineer shall be notified forty-eight hours in advance of any concrete pour for curb and gutter or sidewalks. Concrete shall be prepared, delivered, and placed in conformance with CSA CAN3-A23.1-M (Latest Edition) "Concrete Materials and Methods of Concrete Construction". The surface of the curb, gutter and sidewalk shall be finished prior to final set by brushing to provide a uniform non-skid finish. Both edges of the sidewalk shall be trowelled smooth to a width of 50 mm and rounded to a radius of 12 mm.

During hot, cold, or drying weather conditions, special attention shall be given to preparation, delivery, placement, and airing of concrete to ensure that the requirements of CSA CAN 3-23.1-M are met.

Curb and gutter shall be monolithic unless otherwise approved by the Village Engineer.

Curb and gutter contraction joints shall be made at a maximum of 3 m intervals.

15 mm thick contraction joints shall be installed through the full depth and the entire width at the beginning and end of every curb return, on both sides of crossovers and against walls and structures. A 6 mm rounded edge shall run along each side of the joint.

Contraction joints shall be made by cutting a groove through the surface of the concrete to a minimum depth of 25 mm. Horizontal and vertical alignments shall not vary from established line and grade by more than 5 mm over a 3 m section. Where these tolerances are not met, the faulty section shall be removed and replaced.

Expansion joints shall be 13mm width and located at all tangent points and at the end of each day's pour.

#### 4.04 Curing Concrete

Between April 1 and October 1, concrete shall be sprayed with two coats of an approved membrane curing compound as soon as the concrete has obtained its initial set. Prior to April 1, or after October 1, alternate methods of curing concrete must be used and the method approved by the Village Engineer.

#### 4.05 Boulevards Driveway Approaches

Construction of driveway approaches shall be according to specifications set out in Schedule B of the Bylaw. Care shall be taken to avoid damage to existing utilities such as curb and gutter and water curb stops.

