

SPECIFICATION SECTION 12600 - CURB, GUTTER AND MEDIAN

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SPECIFICATION SECTION 12600 - CURB, GUTTER AND MEDIAN

1. DESCRIPTION

This Specification Section prescribes the construction of concrete curbs, asphalt curbs, gutters and median barriers to the lines, levels, grades, dimensions and types (precast or cast-in-place) shown on the Drawings or as indicated by the Engineer.

2. MATERIAL REQUIREMENTS

2.1 Reference Standards

The most recent edition of the following Standards shall be applied to the Works covered by this Specification Section.

AASHTO M33-03 Preformed Expansion Joint Filler for Concrete
(Bituminous Type)

AASHTO M248-03 Ready-Mixed White and Yellow Traffic Paints

2.2 Bedding

The thickness of bedding material shall be in accordance with the requirements shown on the Drawings or as indicated by the Engineer.

2.3 Concrete

Concrete shall be as shown on the Drawings and shall conform with the requirements of Specification Section 07100 Concrete and Concrete Structures. All finished surfaces of concrete, which are not permanently covered shall; have a smooth fair finish, be even and free from waves, be finished true to line/levels and contours (if applicable), be free of blow holes, be free of honeycombing and air bubbles and the like.

2.4 Reinforcing Steel

Steel reinforcement shall be conform with the requirements of Specification Section 07500 Reinforcing Steel.

2.5 Cement Mortar

Cement Mortar shall conform with the requirements of Specification Section 12100 Cement Mortar.

2.6 Expansion Joint Filler

Unless otherwise approved by the Engineer, joint filler shall conform with the requirements of AASHTO M33.

2.7 Concrete Median Barrier

In accordance with this Specification Section the following material should be used for concrete median barrier.

- (a) Cement Concrete.
- (b) Expansion Joint Filler.
- (c) ReBar.
- (d) U Bolts

2.9 Asphalt Concrete Curb

Materials and mix property of asphalt concrete curb shall conform with the requirements of Surface Course specified in Specification Section 06200 Asphalt Concrete Binder and Surface Courses.

3. CONSTRUCTION REQUIREMENTS

3.1 Curbs and Gutters

- a) Excavation shall be made to the required depth and the base shall be compacted to a firm even surface.
- b) All soft and unsuitable material shall be removed and replaced with a material that complies with the requirements of the respective Specification Sections and is approved by the Engineer.
- c) If so indicated on the Drawings the bed course material shall be placed and compacted to form a uniform bed course of the required thickness.
- d) Mortar joints for curbs and gutters shall be filled for whole cross section and the joint shall be of 10mm.
- e) Concreting shall be as indicated in the Drawings. Forms shall be removed within 24 hours after concrete has been placed.
- f) Minor defects in concrete shall be repaired with mortar containing one part of Portland cement and two parts of fine aggregate. Repairs will not be permitted on the exposed faces. Rejected portions shall be removed and replaced. The exposed surfaces shall be finished while the concrete is still green by wetting a soft brick or a wood block and rubbing the surfaces until they are smooth. The surfaces shall be wet thoroughly either by dipping the brick or block in water, or by throwing water in the

surfaces with a brush. After the concrete has been rubbed smooth, using water, it shall then be rubbed with a thin grout containing one part of Portland cement and one part of fine aggregate. Rubbing with grout shall continue until a uniform color is produced.

- g) When completed the cast insitu concrete shall be covered with suitable materials and kept moist for a period of 3 days. The concrete shall be suitably protected from the weather and traffic until thoroughly hardened.
- h) After the concrete has set sufficiently the spaces in front and back of the curb and gutter shall be refilled to the required elevation with the material that complies with the Specification, which shall be compacted in layers of not more than 15 centimeters, until properly compacted.
- i) Precast units and mortar joints shall conform with requirements indicated in the Drawings.
- j) The finished work shall be true to line grade and level to within 3 millimeters and shall present a smooth appearance free from kinks and distortions visible to the eye.
- k) Concrete finishing shall be as indicated in the Drawings, or as indicated by the Engineer, and shall conform with the requirements of Specification Section 07100 Concrete and Concrete Structures.

3.2 Concrete Median Barrier

- a) Precast or in situ concrete should be used for concrete median barrier construction. Mix proportions, mixing, finishing, protection and curing of the concrete median barrier should conform with the requirements of this Specification Section.
- b) The foundation of the concrete median barrier shall be at least 16cm below the pavement surface. Reinforcing steel bar shall be installed in accordance with the Drawings.
- c) Edge treatment of concrete median barrier should conform with the requirements of the Drawings.
- e) Expansion joints shall be installed by 4m intervals. The width of the joint filler shall be 2cm.

3.3 Asphalt Concrete Curb

Asphalt concrete curb should be installed by asphalt curber and/or as approved by the Engineer.

4. MEASUREMENT AND PAYMENT

4.1 Method of Measurement

- a) Curbs and gutters and curbs of all types will be measured for payment according to the length, in linear meters, of the structures of each type fixed in place. Measurement will be made along the center of the curb. No deduction will be made for flattening of curbs for entrances or for curb drainage inlets or for flanged end sections. The unit rates shall include for, inter alia, cement concrete, asphaltic concrete if applicable, cement mortar, asphalt mortar if applicable, formwork, blinding stone, excavation, disposal of spoil on or off Site, fair cutting, circular work to any radii and fair concrete finish to all exposed surfaces.
- b) Curb markings are measured in another package.
- c) The concrete median barrier shall be measured in linear meters. Measurement will be made along the centre line. The unit rates shall include, inter alia, reinforcement, wire rope/steel bars, U bolts/nuts/washers if applicable, anti glare plates if applicable, concrete, blinding concrete, formwork, joint filler and fair face concrete finish to all exposed surfaces.
- d) The Curb, Gutter and Median provisions, material requirements and construction requirements identified in this Specification Section shall be measured for payment in pay items 12600-01-1, 12600-02-2, 12600-05, 12600-06, 12600-07, 12600-09, 12600-12, 12600-13, 12600-14 and 12600-15.
- e) Any Curb, Gutter and Median Works not specifically identified in this Specification Section but which are necessary for the performance of the Works shall be deemed to be included in pay items 12600-01-1, 12600-02-2, 12600-05, 12600-06, 12600-07, 12600-09, 12600-12, 12600-13, 12600-14 and 12600-15.

4.2 Basis of Payment

The work under this Specification Section shall be paid for in accordance with the applicable unit prices as indicated in the Bill of Quantities and given below. Payment shall constitute full compensation for performing the requirements of the Contract for the item of work as specified including furnishing all necessary labor, materials, tools, equipment, incidentals and tests.

<u>Pay Item</u>	<u>Description</u>	<u>Unit</u>
12600	Curb, Gutter and Median	
12600-01-1	Concrete Curb, Type 1A (At nose of ramp)	m
12600-02-2	Concrete Curb, Type 2C (h=0.4m) at Interchange	m
12600-05	Asphalt Concrete Curb	m
12600-06	Concrete Median Barrier, Type-1 (L=4.0m)	m
12600-07	Concrete Median Barrier, Type-2 (Transition at Approach Section)	m
12600-09	Concrete Median Barrier, Type-4 (L=1.0m for Median Drainage)	m
12600-12	Concrete Median Barrier, Type-3 (Transition at Flyover)	m
12600-13	Concrete Median Strip, Type-1 (IC Rampway W=1.0m)	m
12600-14	Concrete Median Strip, Type-2 (IC Rampway W=3.0m)	m
12600-15	Concrete Median Barrier, Type-7 (Abutment Section)	m