

# **TENDER DOCUMENTS**

## **SUBSECTION 6.93 ROAD SWEEPING AND CLEANING OF MANHOLES, CATCH BASINS AND STRUCTURAL ELEMENTS**

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## SUBSECTION 6.93 ROAD SWEEPING AND CLEANING OF MANHOLES, CATCH BASINS AND STRUCTURAL ELEMENTS

### 6.93.1 GENERAL

6.93.1.1 This subsection describes the requirements relating to the sweeping and cleaning of catch basins and manholes, cleaning of structural elements, spring cleaning and regular road sweeping covered by this Contract.

### 6.93.2 MEASUREMENT UNITS

6.93.2.1 The measurement units and respective symbols thereof used in this subsection are described as follows:

Measurement Unit	Designation	Symbol
length	meter	m
length	millimeter	mm
volume	cubic meter	m <sup>3</sup>
volume	liter	L
pressure	kilopascal	kPa
angle	degree	°
temperature	Celsius degree	°C

### 6.93.3 REFERENCE STANDARDS

6.93.3.1 The **Contractor** shall carry out all pavement sweeping, cleaning of catch basins and manholes and cleaning of structural elements in accordance with the requirements of the following standards and documents, to which the provisions of this Contract are added:

6.93.3.1.1 (MTQ) Ministère des Transports du Québec:

- MTQ – *Cahier des charges et devis généraux (CCDG) / Services de nature technique;*
- MTQ – *Normes – Ouvrages routiers – Tome VI Entretien;*
- MTQ – *Norme 6321-1 Balayage et ramassage des débris sur les voies de circulation.*

### 6.93.4 EQUIPMENT AND TOOLING

6.93.4.1 ROAD SWEEPING AND CLEANING

6.93.4.1.1 The **Contractor** shall have a sufficient number of tanker trucks, watering trucks, sprinkler vehicles and self-propelled sweepers for cleaning, sweeping and picking up the residues on the road.

- 6.93.4.1.1.1 Water truck
  - 6.93.4.1.1.1.1 The **Contractor** shall use a watering truck equipped with the following elements:
    - 6.93.4.1.1.1.1.1 a tank with a minimum volume of 9,000 L;
    - 6.93.4.1.1.1.1.2 a pump capable of maintaining a pressure of 470 kPa;
    - 6.93.4.1.1.1.1.3 adjustable 360° swivel jets at approximately 330 mm from the ground.
- 6.93.4.1.1.2 Sprinkler vehicle
  - 6.93.4.1.1.2.1 The **Contractor** shall use a sprinkler vehicle equipped with a water blast device having a minimum pressure of 470 kPa. The pressure of the water blast shall be sufficient to remove any deposits, debris or waste on the islands and gores.
- 6.93.4.1.1.3 Self-propelled sweeper (mechanical sweeper)
  - 6.93.4.1.1.3.1 The **Contractor** shall use a self-propelled sweeper equipped with the following elements:
    - 6.93.4.1.1.3.1.1 two (2) gutter brushes, one on each side;
    - 6.93.4.1.1.3.1.2 a conveyor brush having a minimum width of 2 m;
    - 6.93.4.1.1.3.1.3 a watering system with tank and jet on either side of the sweeper;
    - 6.93.4.1.1.3.1.4 a vacuum or conveyor collection system;
    - 6.93.4.1.1.3.1.5 a dump box with a minimum gross capacity of 2 m<sup>3</sup>;
    - 6.93.4.1.1.3.1.6 an exterior basket for large debris.
- 6.93.4.1.1.4 Transport truck
  - 6.93.4.1.1.4.1 The **Contractor** shall use a truck equipped with a dump box to transport and dispose of the debris.
- 6.93.4.1.1.5 Other equipment
  - 6.93.4.1.1.5.1 If necessary, the **Contractor** shall use any other equipment required to enable it to carry out the work.

#### 6.93.4.2 CLEANING OF MANHOLES AND CATCH BASINS

6.93.4.2.1 The **Contractor** shall have a sufficient number of trucks equipped with a suitable suction device to clean quickly and empty completely the manholes and catch basins.

6.93.4.2.2 The **Contractor** shall have in its possession the necessary tools to remove the grids and covers, soften the compacted deposits, take out all the debris (consolidated old pavements, broken concrete, fallen bricks, etc.) that are inside the manholes and catch basins, as well as to carry out any operation related to the cleaning.

6.93.4.2.3 The **Contractor** shall be able to have a combination unit available if there are clogged pipes.

#### 6.93.4.3 CLEANING OF STRUCTURAL ELEMENTS

##### 6.93.4.3.1 Tanker truck

6.93.4.3.1.1 The tanker truck shall be equipped with a pump connected to a portable lance for cleaning the bridge expansion joints and structural elements including, without however being limited to, the steel structure and barriers located along the structures.

### 6.93.5 EXECUTION OF WORK

#### 6.93.5.1 GENERAL

6.93.5.1.1 The road sweeping and the cleaning of structural elements shall be carried out according to this subsection and Tome VI *Entretien* and CCDG *Services de nature technique* of MTQ.

#### 6.93.5.2 IMPLEMENTATION OF ROAD SWEEPING AND CLEANING

##### 6.93.5.2.1 Removal of debris

6.93.5.2.2 Prior to each cleaning and/or sweeping, the **Contractor** shall pick up from the traffic lanes, shoulders and gores any debris or other objects that cannot be picked up by the self-propelled sweeper.

6.93.5.2.3 The **Contractor** shall sweep the parking areas and road around the Jacques Cartier Bridge Maintenance Centre located at the south approach of the bridge.

### 6.93.5.3 ROAD WATERING AND CLEANING

6.93.5.3.1 The water supply is the responsibility of the **Contractor**. Before connecting his equipment to a water system, the **Contractor** shall request the authorization from the municipalities concerned.

6.93.5.3.2 The watering shall be carried out from the centre of the pavement towards the edge thereof, using enough pressure to move the deposits along the curbs. The **Contractor** shall not discharge the deposits into the catch basins.

6.93.5.3.3 For entrance and exit ramps, the water truck shall circulate with crossed jets. The protection vehicle with a truck mounted attenuator (TMA) shall follow the water truck.

### 6.93.5.4 REGULAR ROAD SWEEPING

6.93.5.4.1 The regular road sweeping comprises the sweeping of the traffic lanes, extra widths, painted areas and shoulders in order to remove all deposits or loose materials, such as debris, dust and grass clippings. If necessary, the self-propelled sweeper shall make several passes.

### 6.93.5.5 SWEEPING AND CLEANING OF STRUCTURAL ELEMENTS (SPRING CLEANING)

6.93.5.5.1 During the first operation of the season, the **Contractor** shall carry out the sweeping and cleaning of the structural elements (spring cleaning) according to paragraphs 6.93.5.5.2 to 6.93.5.5.7 and shall provide for the proper equipment and methods to remove and dispose of all debris and residues.

6.93.5.5.2 The sweeping and cleaning work on structural elements shall be performed when the temperature is above 4°C.

6.93.5.5.3 Cleaning of the cement concrete median strip

6.93.5.5.3.1 The median strip is the separator element located between two (2) opposite directions of highway lanes and consists of a cement concrete perimeter and of a central portion that may be made of cement concrete, asphalt or grass.

6.93.5.5.3.2 Where the top of the median strips is cement concrete or asphalt, the **Contractor** shall remove all deposits, grass clippings, debris and other objects from the median strips using the water truck equipped with a mobile jet, on both sides of the fence, if any. If necessary, the water truck shall circulate in the left lane in the direction where the lanes are open to traffic and clean in such a way that the debris are thrown in the direction opposite to traffic.

- 6.93.5.5.3.3 Where the top of the median strips is not cement concrete or asphalt, only the two (2) sides of the strips shall be cleaned.
- 6.93.5.5.3.4 Regardless of the method used, the **Contractor** shall ensure that no debris or dirt are thrown in lanes that are open to traffic. Whenever operations are carried out from lanes that are open to traffic, the **Contractor** shall use movable work zone signage that meets the requirements of subsection 6.14 *Traffic Control and Temporary Signage*.
- 6.93.5.5.4 Cleaning of the side strips
- 6.93.5.5.4.1 These side strips include surfaces between highway lanes and other lanes such as ramps, adjacent service roads or other expressways in the same direction.
- 6.93.5.5.4.2 The side strips may include curbs, gores, islands, impact attenuators, slabs, sidewalks and rigid safety barriers.
- 6.93.5.5.4.3 The surfaces of these side strips may be made of cement concrete or asphalt.
- 6.93.5.5.4.4 During pressure cleaning of these surfaces, including the cleaning of borders, gores, islands, parapets, impact attenuators and curbs, the **Contractor** shall, first, push the deposits towards the shoulders or highway side strips in order for it to be possible, subsequently, to pick them up with the sweeper.
- 6.93.5.5.5 Water blasting shall be used to clean semi-rigid safety barriers and structure parapets leaning against other road elements that allow deposits to build up.
- 6.93.5.5.6 Water blasting is not required to clean curbs leaning against turf.
- 6.93.5.5.7 The **Contractor** shall clean the impact attenuator systems installed in access and exit ramps. For sand barrel-type impact attenuators, the **Contractor** shall clean the deposits around each barrel. For the other types of attenuators, the **Contractor** shall clear away the debris from under and around the impact attenuator.
- 6.93.5.5.8 The **Contractor** shall ensure that the presence of dust caused by the cleaning operations does not, at any time, reduce the visibility or impair the security of the road users.
- 6.93.5.6 CLEANING OF MANHOLES AND CATCH BASINS
- 6.93.5.6.1 After having cleaned the roadways and structural elements (spring cleaning), the **Contractor** shall clean the manholes and catch basins.

- 6.93.5.6.2 The **Contractor** shall remove the covers and grids without damaging them, using the proper equipment.
- 6.93.5.6.3 The **Contractor** shall completely empty the pit or basin of each manhole or catch basin of any solids and notify the Engineer if more than a quarter of the pipe height is filled with sediments or if the pipe is clogged by debris.
- 6.93.5.6.4 The **Contractor** shall clean the frame or the seat before putting the covers and grids back in place and ensure stability thereof. The final position of the grid shall be safe for cyclists. The longitudinal openings shall be oriented perpendicular to the roadway. If needed, the **Contractor** shall apply an adhesive approved by the Engineer.
- 6.93.5.6.5 Any grid deemed unsafe or ineffective by the Engineer shall be replaced at the **Contractor's** expense. No grid shall be replaced without authorization from the Engineer. Any breakage caused by the **Contractor** during the performance of its work shall be repaired at its own expense.
- 6.93.5.6.6 As part of the present work of cleaning manholes and catch basins, the **Contractor** shall note any breakage to the manhole or catch basin heads and notify the Engineer as soon as possible.
- 6.93.5.6.7 Each manhole or catch basin cleaned by the **Contractor** shall be marked with white paint with a stroke approximately 300 mm long, so as to be easily identified.
- 6.93.5.6.8 If the **Contractor** encounters a clogged conduit, it must notify the Engineer and obtain permission before cleaning.
- 6.93.5.6.8.1 When the Engineer authorizes the cleaning of a conduit, the **Contractor** shall drain that conduit towards the manhole or catch basin pit or tank.
- 6.93.5.6.8.2 The road shall be cleaned of any debris from the emptying work.
- 6.93.5.7 CLEANING OF EXPANSION JOINTS
- 6.93.5.7.1 The **Contractor** shall carry out the cleaning of the expansion joints at night with lane closures.
- 6.93.5.7.2 The **Contractor** shall take the necessary precautions not to discharge the debris in the watercourses and/or on the underlying lanes.
- 6.93.5.7.3 The **Contractor** shall clean the seal of the expansion joint by water blasting from the centre towards the edge of the road.
- 6.93.5.7.4 The **Contractor** shall recover and pick up the debris along the edge of the road.



6.93.5.8 DISPOSAL OF RESIDUES

6.93.5.8.1 The **Contractor** shall dispose of the residues from sweeping and cleaning of structural elements (spring cleaning), cleaning of the manholes and catch basins and regular road sweeping in accordance with subsection 6.13 *Environmental Protection*.

**6.93.6 QUALITY CONTROL**

6.93.6.1 For the acceptance of road sweeping and the cleaning of manholes, catch basins and structural elements, the Engineer shall make the following checks, without however being limited thereto:

6.93.6.1.1 at least 95% of the swept and/or cleaned surfaces are free of residues;

6.93.6.1.2 the receipts delivered at the waste disposal site were kept;

6.93.6.1.3 the cleanliness of the site after the sweeping and the cleaning work.

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**END OF SUBSECTION**