

TENDER DOCUMENTS

SUBSECTION 6.71 OVERHEAD SIGNAGE

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SUBSECTION 6.71 OVERHEAD SIGNAGE

6.71.1 GENERAL

- 6.71.1.1 This subsection describes the requirements relating to the dismantling and installation of permanent overhead signage covered by this Contract.
- 6.71.1.2 Any specific requirements pertaining to the overhead signage work covered by this Contract are set out on the plans and in Section 4 *Specific Technical Conditions*.
- 6.71.1.3 Any requirements relating to steelwork are described in subsection 6.41 *Steelwork*.
- 6.71.1.4 Any requirements relating to aluminum work are described in subsection 6.43 *Aluminum Work*.
- 6.71.1.5 Any requirements relating to electrical works are described in subsection 6.50 *Electrical Works*.

6.71.2 MEASUREMENT UNITS

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

Measurement Unit	Designation	Symbol
angle, plan	degree	°
length	meter	m
length	millimeter	mm

6.71.3 REFERENCE STANDARDS

- 6.71.3.1 The Contractor shall carry out all overhead signage work in accordance with the following standards and documents to which the provisions of this Contract are added:
- 6.71.3.1.1 (ASTM) ASTM International:
- ASTM A276/A276M *Standard Specification for Stainless Steel Bars and Shapes*;
 - ASTM D4956 *Standard Specification for Retroreflective Sheeting for Traffic Control*.
- 6.71.3.1.2 (CSA) Canadian Standards Association:
- CAN/CSA G40.20/G40.21 *General Requirements for Rolled or Welded Structural Quality Steel/Structural Quality Steel*.

6.71.3.1.3 (MTQ) Ministère des Transports du Québec:

- MTQ – *Cahier des charges et devis généraux (CCDG) – Construction et réparation;*
- MTQ – *Normes – Ouvrages routiers, Tome I Conception routière;*
- MTQ – *Normes – Ouvrages routiers, Tome II Construction routière;*
- MTQ – *Normes – Ouvrages routiers, Tome III Ouvrages d’art;*
- MTQ – *Normes – Ouvrages routiers, Tome V Traffic Control Devices, Parts 1, 2 and 3;*
- MTQ – *Normes – Ouvrages routiers – Tome VII Matériaux, Chapitre 14 Pellicules rétro réfléchissantes:*
 - Norme 6401 *Aluminium;*
 - Norme 14101 *Pellicules rétro réfléchissantes.*

6.71.3.1.4 Quebec Official Publisher:

- *Quebec Highway Safety Code (R.S.Q., c. C-24.2);*
- *Safety Code for the construction industry (R.S.Q., c. S-2.1, r.6).*

6.71.3.1.5 Publications du Québec:

- Gréage et levage : guide de sécurité (2007).

6.71.4 MATERIALS

6.71.4.1 GENERAL

6.71.4.1.1 All materials supplied by the Contractor shall comply with the standards listed in Article 6.71.3 *Reference Standards*. The destination overhead signage panels wider than or equal to 2.5 m shall be made of aluminum profile.

6.71.4.2 ACCESSORIES

6.71.4.2.1 This subsection does not necessarily contain a full and detailed description of all the accessories needed to perform the work. The Contractor shall therefore supply and install, according to best practices, all accessories required to complete the work.

6.71.4.2.2 All bolts, nuts, washers or other parts necessary to assemble the equipment shall be made of AISI 304 stainless steel in accordance with standard ASTM A276/A276M.

6.71.4.2.3 All hardware required for carrying out the work shall be new.

6.71.4.3 OVERHEAD SIGNAGE PANELS

6.71.4.3.1 The overhead signage panels shall be made of aluminum profiles or sheets in accordance with MTQ standard 6401.

- 6.71.4.3.2 Any light signals incorporated into a signage panel shall meet the requirements set out in the CCDG for vertical illuminated signage.
- 6.71.4.3.3 Overhead signage panels dimensions
- 6.71.4.3.3.1 All overhead signage panel dimensions shall be those indicated on the plans.
- 6.71.4.3.4 Size of lettering
- 6.71.4.3.4.1 The dimensions of letters, numbers and other symbols shall comply with the overhead signage manufacturing slips indicated on the plans. The spaces between the letters, numbers and other symbols shall comply with the MTQ standards.
- 6.71.4.3.5 Retroreflective film
- 6.71.4.3.5.1 The reflective films used as background to the lettering, borders and symbols on the overhead signage panels shall have a coefficient of retroreflection equal to Type XI for overhead signage structures and to Type IV for lateral signage structures and comply with MTQ standard 14101.
- 6.71.4.3.6 Identification plates
- 6.71.4.3.6.1 The Contractor shall supply and install an identification plate on the back of each new panel, on which the date of fabrication and the panel number shall be indicated. The panel numbers shall be those indicated on the plans.
- 6.71.4.3.6.2 The identification plates shall be self-adhesive strips. The required colour combination is a black background and a retroreflective white lettering.
- 6.71.4.3.6.3 It is prohibited to install the self-adhesive strips in cold weather.
- 6.71.4.4 OVERHEAD SIGNAGE PANEL FASTENERS
- 6.71.4.4.1 The fasteners that secure the panel on the structure shall be new and as indicated on the plans.
- 6.71.4.4.2 The fasteners used to secure the panel on aluminum structures shall be made of aluminum or stainless steel.
- 6.71.4.4.3 The fasteners used to secure the panel on galvanized steel structures shall be made of galvanized steel as well.
- 6.71.4.4.4 The Contractor shall not, under any circumstances, drill and drive screws into the signage structure.
- 6.71.4.4.5 Where a panel must be installed directly onto an aluminum structure by means of stainless steel or aluminum metal straps, the Contractor shall use a fastening system that does not cause metal corrosion.

6.71.4.4.6 A neoprene protective strip shall be placed between the structure and the metal strap so as to avoid any direct contact. The neoprene strip shall be interrupted in three (3) locations over a length of 25 mm to facilitate the drainage of water.

6.71.4.5 STORAGE

6.71.4.5.1 The conditions under which materials are stored shall meet the manufacturer's recommendations. The film or other signage components altered in the course of the work shall be replaced by the Contractor at its expense.

6.71.5 EXECUTION OF WORK

6.71.5.1 GENERAL

6.71.5.1.1 The overhead signage panels shall be installed in accordance with Tome V – *Signalisation routière* of MTQ.

6.71.5.2 ASSEMBLY PLAN

6.71.5.2.1 The Contractor shall submit assembly plans of the overhead signage panels in accordance with Article 16.5.2.2 *Plan de montage et installation des panneaux de signalisation* of the CCDG.

6.71.5.2.2 At least fourteen (14) days before proceeding with their assembly, the Contractor shall submit to the Engineer, assembly plans of the overhead signage panels signed and sealed by an engineer member of the *Ordre des ingénieurs du Québec* (OIQ).

6.71.5.2.3 The assembly plan shall describe the recommended method for the installation of the overhead signage panels. Where existing panels are to be dismantled, the assembly plan shall also include the dismantling details.

6.71.5.2.4 The assembly plan shall identify a safe gripping method to be used to secure the overhead signage panel while it is being handled and lifted and until it is installed on the structure and shall include a description of the operations to be performed at the various stages of securing the signage panel fasteners.

6.71.5.2.5 When a panel is being lifted, it is prohibited to secure the lifting device to the bolts inserted into the grooves at the top of the panel.

6.71.5.2.6 The Contractor shall inform workers of the existence of the assembly plan and lifting method.

6.71.5.3 SHOP DRAWINGS

6.71.5.3.1 At least fourteen (14) days prior to the commencement of fabrication, the Contractor shall submit to the Engineer, for review, the shop drawings, the assembly plans and the construction plans needed for the fabrication of the overhead signage panels as well as the design notes signed and sealed by an engineer member of the OIQ.

6.71.5.4 DISMANTLING OF PANELS

6.71.5.4.1 All messages on the overhead signage panels shall be visible to traffic at all times. The authorization to dismantle the panels shall be obtained from the Engineer before recovering the overhead signage from the existing superstructures.

6.71.5.4.2 The Contractor is responsible for disposing of the waste from the removal of the panels in an authorized site.

6.71.5.5 DELIVERY AND ASSEMBLY OF PANELS

6.71.5.5.1 The Contractor shall ensure to supply all the components necessary to assemble and erect the panels.

6.71.5.5.2 The Contractor shall take the necessary precautions not to damage the overhead signage panels and reflective finish thereof. The panels shall be handled with care and protected during transportation and handling.

6.71.5.5.3 The panels damaged by the Contractor during transportation or handling shall be replaced at the Contractor's expense.

6.71.5.5.4 The panels shall be transported in an upright position. During transportation, the Contractor shall place a rubber toric rope between each panel to avoid the friction of the film.

6.71.5.5.5 When retrieving the panels, the Contractor shall have on hand the permits required to circulate with panels and other materials wider than 2,440 mm.

6.71.5.5.6 Unless otherwise specified by the Engineer, the Contractor shall proceed with the installation and the assembly of the panels on the different overhead signage structures in accordance with Article 16.5 *Panneaux de signalisation* of the CCDG and as indicated on the plans.

6.71.5.5.7 The position of the panels shall comply with the indications on the plans. The panels shall, among others, respect the minimum clearance required for the different overhead signage structures.

6.71.5.5.7.1 A minimum vertical clearance of 5.50 m between the underside of the highest panel and the highest point of the underlying roadway for all new overhead structures or overhead structures with new vertical supports.

- 6.71.5.5.8 For overhead structures, the panels shall be centered horizontally above the underlying respective lanes. Unless otherwise indicated on the plans, the panels shall at all times be centered vertically on the horizontal support of the overhead signage gantries.
- 6.71.5.5.9 The face of the panels shall be inclined at an angle of 5° in the direction of traffic.
- 6.71.5.5.10 All fasteners, T-shaped bars, aluminum angles, bolts and other accessories supplied by the Contractor shall be new. The assembly parts and the assembly of the aluminum profiles shall comply with standardized plans 002 and 003 of Tome III, chapter 6 *Structures de signalisation, d'éclairage et de signaux lumineux* of MTQ.
- 6.71.5.5.11 The Contractor shall assemble at the worksite the panels that are higher than 3,050 mm and fabricated in two (2) sections and more, replacing, for each panel, the T-shaped stiffeners temporarily bolted at the factory with full-length stiffeners, using the appropriate bolts.

6.71.6 QUALITY CONTROL

- 6.71.6.1 Once the work is completed, the Engineer will conduct a daylight inspection in the presence of a representative of the Contractor in order to check the location, height, visibility and appearance of the panels and a nighttime inspection to check the orientation and glare of the panels, and any other visible criteria of any kind, whether dimensional or functional.
- 6.71.6.2 Any defect in the panels including, without limitation, any defect discovered during the two (2) inspections referred to in paragraph 6.71.6.1 above, shall be corrected by the Contractor at its expense, to the satisfaction of the Engineer.

END OF SUBSECTION