

## **PART 1 GENERAL**

### **1.1 REFERENCE STANDARDS**

- .1 American Association of State Highway and Transportation Officials (AASHTO)
  - .1 Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals, (6th Edition).
- .2 ASTM International
  - .1 ASTM B 209M-14, Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate [Metric].
  - .2 ASTM B 210M-12, Standard Specification for Aluminum-Alloy Drawn Seamless Tubes [Metric].
  - .3 ASTM B 211M-12e1, Standard Specification for Aluminum and Aluminum-Alloy Bar, Rod and Wire [Metric].
- .3 Canadian General Standards Board (CGSB)
  - .1 CGSB 62-GP-9M-80, Prefabricated Markings, Positionable, Exterior, for Aircraft Ground Equipment and Facilities.
  - .2 CGSB 62-GP-11M-78, Marking Material, Retroreflective, Enclosed Lens, Adhesive Backing and Amendment.
- .4 CSA International
  - .1 CSA G40.20/G40.21-13, General Requirements for Rolled or Welded Structural Quality Steel/Structural Quality Steel.
  - .2 CAN/CSA O80 Series-15, Wood Preservation.
  - .3 CSA O121-17, Douglas Fir Plywood.
  - .4 CSA W47.2-11 (R2015), Certification of Companies for Fusion Welding of Aluminum.
  - .5 CAN/CSA-Z809-16, Sustainable Forest Management.
- .5 The Master Painters Institute (MPI)
  - .1 Architectural Painting Specification Manual

### **1.2 ACTION AND INFORMATIONAL SUBMITTALS**

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Product Data:
  - .1 Submit manufacturer's instructions, printed product literature and data sheets for traffic signage, including product characteristics, performance criteria, physical size, finish and limitations.

### **1.3 DELIVERY, STORAGE AND HANDLING**

- .1 Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements and with manufacturer's written instructions.
- .2 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address.
- .3 Storage and Handling Requirements:
  - .1 Store materials off ground and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
  - .2 Replace defective or damaged materials with new.

## **PART 2 PRODUCTS**

### **2.1 DESIGN CRITERIA**

- .1 Structural deflections and vibration in accordance with American Association of State Highway and Transportation Officials (AASHTO), "Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals".

### **2.2 MATERIALS**

- .1 Sign supports:
  - .1 Reuse existing sign supports.
- .2 Signboards:
  - .1 Aluminum extrusions: to ASTM B 211M, 150 mm or 300 mm panels suitable for bolting together.
  - .2 T-shape stiffeners for signboards: to ASTM B 210M.
  - .3 Connecting straps and brackets: to ASTM B 209M.
  - .4 Aluminum materials: to ASTM B 209M.
  - .5 Xylene thinner: as recommended by manufacturer.
  - .6 Chemical conversion coating for aluminum: as recommended by manufacturer.
  - .7 Primer for aluminum: to MPI # 8.
  - .8 Silk screen ink:
    - .1 Transparent or opaque colours: selected by Departmental Representative, or as indicated.
  - .9 Reflective sheeting and tape: to CGSB 62-GP-11M. Adhesive, class of reflectivity and colour as indicated.
  - .10 Transparent tape: flexible, smooth-surfaced, moisture resistant tape with pressure sensitive adhesive.
  - .11 Clear varnish protective coat: MPI-EXT 6.4H.

## 2.3 FABRICATION

- .1 Signboards:
  - .1 Aluminum blanks:
    - .1 Degrease, etch and bonderize with chemical conversion coating.
    - .2 Clean surfaces with xylene thinner. Dry.
    - .3 For non-reflective signs, spray face with one coat vinyl pretreatment coating and two finish coats of required colour.
    - .4 For aluminum signboards that are to be painted before installation, spray and bake face of signboards with two coats of enamel in accordance with MPI-EXT 5.4A.
  - .2 Reflective background sheeting and lettering:
    - .1 Cut and apply in accordance with manufacturer's instructions.
    - .2 Apply adhesive coated material with heat lamp vacuum applicator or by squeeze roll application method. Apply pressure sensitive material with roller or squeegee.
    - .3 Edge wrap sheeting on each extrusion prior to bolting extrusions. Match pieces of sheeting from different rolls for each signboard to ensure uniform appearance and brilliance by day and night.
    - .4 Reflective signboard faces may be prepared using silk screen transparent ink.
  - .3 Non-reflective lettering and symbols: cut from vinyl film as specified in CGSB 62-GP-9M.
  - .4 Clean signboards completely and apply transparent tape over top edge and extending 25 mm minimum down back and front of signboard.
  - .5 Protect finished signboard faces with one coat of clear varnish.
  - .6 Signage shall conform to the requirement of the Federal Identity Program.
- .3 Sign identification:
  - .1 Apply sign number and date of installation with 25 mm high [stencil painted] black letters on lower left back face of each signboard.

## PART 3 EXECUTION

### 3.1 INSTALLATION

- .1 Signboard:
  - .1 Fasten signboards to supporting posts and brackets as indicated.
  - .2 Use T-shape aluminum stiffeners to join portions of sign panel on site. Cover face of T-stiffener with material identical to face of sign panel.

### 3.2 CORRECTING DEFECTS

- .1 Correct defects, identified by Departmental Representative, in sign message, consistency of reflectivity, colour or illumination. Correct angle of signboard and adjust luminaire

aiming angle for optimum performance during night conditions to approval of Departmental Representative.

### **3.3 CLEANING**

- .1 Progress Cleaning: clean in accordance with Section 01 74 11 - Cleaning.
  - .1 Leave Work area clean at end of each day.
- .2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11 - Cleaning.

### **3.4 PROTECTION**

- .1 Protect installed products and components from damage during construction.
- .2 Repair damage to adjacent materials caused by traffic signage installation and salvage operations.

**END OF SECTION**