

**PART 1 - GENERAL**

- 1.1 RELATED SECTIONS .1 Section 013300 – Submittal Procedures
- 1.2 BASIS FOR PAYMENT .1 The work includes the manufacture, supply and installation of new permanent traffic signs and their support as indicated on the Contract Drawings. The lump sum price bid will be full compensation for all materials, labour, equipment necessary to do the work.
- .2 The work includes the removal and relocation of existing permanent traffic signs and their support as indicated on the Contract Drawings. The lump sum price bid will be full compensation for all materials, labour, equipment necessary to do the work.
- 1.3 REFERENCES .1 American Association of State Highway and Transportation Officials (AASHTO)
- .1 Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals, (5th Edition).
- .2 ASTM International
- .1 ASTM A 123/A 123M-09, Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.
- .2 ASTM B 209M-10, Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate Metric.
- .3 ASTM B 211M-03, Standard Specification for Aluminum and Aluminum-Alloy Bar, Rod and Wire Metric.
- .3 Canadian General Standards Board (CGSB)
- .1 CGSB 62-GP-11M-78, Marking Material, Retroreflective, Enclosed Lens, Adhesive Backing and Amendment.
- .4 CSA International
- .1 CSA G40.20/G40.21-04(R2009), General Requirements for Rolled or Welded Structural Quality Steel/Structural Quality Steel.
- .2 CAN/CSA O80 Series-08, Wood Preservation.
- .3 CSA O121-08, Douglas Fir Plywood.
- .4 CSA W47.2-11, Certification of Companies for Fusion Welding of Aluminum.
- .5 CAN/CSA-Z809-08, Sustainable Forest Management.
- 1.4 ACTION AND INFORMATIONAL SUBMITTALS .1 Submit in accordance with Section 013300 - 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.

- 1.5 DELIVERY, STORAGE AND HANDLING
- .1 Deliver, store and handle materials in accordance with Section 016100 - 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, indoors and in a dry location 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 MATERIALS
- .1 Sign supports:
    - .1 Steel posts: to CSA G40.21, 4 m long, flanged "U" shaped in cross section, measuring 65 mm wide x 30 mm deep. Metal thickness: 4.5 mm. Hot dipped galvanized: to ASTM A 123/A 123M.
    - .2 Standard tubular supports for small signs: to ASTM B 210M.
    - .3 Timber posts:
      - .1 Sawn timber posts:
        - .1 Type: pressure treated.
        - .2 Dimensions: as indicated.
        - .3 CAN/CSA-Z809 or FSC or SFI certified.
  - .2 Signboards:
    - .1 Aluminum sheet: to ASTM B 209M, precut to required dimensions.
      - .1 Thickness for signboards up to 750 mm wide: 1.6 mm minimum.
      - .2 Thickness for signboards 750-1200 mm wide: 2.1 mm minimum.
      - .3 Thickness for refurbishing existing sign panels: 1.0 mm minimum.
    - .2 Aluminum materials: to ASTM B 209M.
    - .3 Primer for aluminum: to MPI # 8, VOC limit of 250 g/L to GS-11.
    - .4 Reflective sheeting and tape: to CGSB 62-GP-11M. Adhesive, class of reflectivity and colour as indicated.
    - .5 Transparent tape: flexible, smooth-surfaced, moisture resistant tape with pressure sensitive adhesive.
    - .6 Clear varnish protective coat: MPI-EXT 6.4H VOC limit of 350 g/L to SCAQMD Rule 1113.
- 2.2 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, or paint using required colour of finish paint maximum VOC of 250 g/L to SCAQMD Rule 1113 GS-11.
- .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 with maximum VOC limit of 350 g/L to SCAQMD Rule 1113.
- .2 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 Sign support:
  - .1 Erect supports as indicated. Permissible tolerance: 50 mm maximum departure from vertical for direct buried supports.
  - .2 Erect posts plumb and square to details as indicated.
  - .3 Single channel steel posts:
    - .1 Drive to required depth without damage to posts.
    - .2 If rock or concrete is encountered, drill hole to required depth and set post in sand.
    - .3 In finished concrete surfaces, backfill with concrete or grout. Protect from adverse conditions until cured.
  - .4 Wooden post installation:
    - .1 Excavate post holes to 450 mm minimum diameter. Compact bottom of hole to provide firm

foundation. Set post and backfill in 150 mm layers with

excavated material. Compact each layer before placing each subsequent layer.

- .2 Signboard:
  - .1 Fasten signboards to supporting posts as indicated.
  - .2 Fasten lane markers to signboard.

3.2 CORRECTING DEFECTS

- .1 Correct defects, identified by Departmental Representative in sign message, consistency of reflectivity, colour or illumination. Correct angle of signboard for optimum performance during night conditions to approval of Departmental Representative.

3.3 CLEANING

- .1 Progress Cleaning: clean in accordance with Section 017411 - 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 017411 - 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 \*\*\***