

## **PART 1 - GENERAL**

### **1.1 RELATED REQUIREMENTS**

- .1 Section 01 33 00 – Submittal procedures.
- .2 Section 01 61 00 – Common product Requirements.
- .3 Section 01 74 11 – Cleaning.
- .4 Section 01 74 21 – Construction/Demolition Waste Management and Disposal.

### **1.2 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 Transportation Association of Canada
    - .1 Manual of Uniform Traffic Control Devices for Canada (Latest Edition).
  - .3 ASTM International
    - .1 ASTM A 123/A 123M-09(R2014), Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.
    - .2 ASTM A 276-15, Standard Specification for Stainless Steel Bars and Shapes.
    - .3 ASTM B 209M-14, Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate Metric.
    - .4 ASTM B 210M-12, Standard Specification for Aluminum-Alloy Drawn Seamless Tubes Metric.
    - .5 ASTM B 211M-12e1, Standard Specification for Aluminum and Aluminum-Alloy Bar, Rod and Wire Metric.
  - .4 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.
  - .5 CSA International
    - .1 CSA G40.20-13/G40.21-13, General Requirements for Rolled or Welded Structural Quality Steel/Structural Quality Steel.
    - .2 CAN/CSA O80 Series-08, Wood Preservation.
    - .3 CSA O121-08(R2013), Douglas Fir Plywood.
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- .4 CSA W47.2-11, Certification of Companies for Fusion Welding of Aluminum.
- .5 CAN/CSA-Z809-08, Sustainable Forest Management.
- .6 Forest Stewardship Council (FSC)
  - .1 FSC-STD-01-001-2004, FSC Principle and Criteria for Forest Stewardship.
- .7 Green Seal Environmental Standards (GS)
  - .1 GS-11-11, Paints and Coatings.
- .8 South Coast Air Quality Management District (SCAQMD), California State, Regulation XI. Source Specific Standards
  - .1 SCAQMD Rule 1113-A2011, Architectural Coatings.
- .9 Sustainable Forestry Initiative (SFI)
  - .1 SFI-2010-2014 Standard.
- .10 The Master Painters Institute (MPI)
  - .1 Architectural Painting Specification Manual - current edition.

### **1.3 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.

### **1.4 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 indoors in dry location and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
    - .2 Replace defective or damaged materials with new.
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- .4 Develop Construction Waste Management Plan related to Work of this Section and in accordance with Section 01 74 21 – Construction/Demolition Waste Management and Disposal.
- .5 Packaging Waste Management: remove for reuse and return by manufacturer of pallets, crates, padding, and packaging materials as specified in Construction Waste Management Plan in accordance with Section 01 74 21 - Construction/Demolition Waste Management.

## **PART 2 - PRODUCTS**

### **2.1 MATERIALS**

- .1 Sign supports:
  - .1 In accordance with Halifax Standard tubular supports for small signs: to ASTM B 210M.
  - .2 Fasteners: bolts, nuts, washers and other hardware for roadside signs to be cast aluminum alloy, or galvanized steel.
- .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 Aluminum extrusions: to ASTM B 211M, 150 mm or 300 mm panels suitable for bolting together.
  - .3 T-shape stiffeners for signboards: to ASTM B 210M.
  - .4 Connecting straps and brackets: to ASTM B 209M.
  - .5 Aluminum materials: to ASTM B 209M.
  - .6 Reflective background and lettering in accordance with Manual of Uniform Traffic Control Devices and CSA B651 Barrier Free Design.

## **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. Where separate concrete footings have been placed, erect posts with base plates resting on levelling nuts and restrained with nuts and washers. Permissible tolerance: 12 mm maximum departure from vertical.
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- .2 Coat underside of base plate with corrosion protective paint before installation. Connect shoe base to shaft with inside and outside fillet welds.
- .3 Close open aluminum tubes and posts with aluminum cap. Cut oblong holes in shoe bases to drain condensation. Install aluminum bolt cover on each base plate restraining nut.
- .4 Erect posts plumb and square to details as indicated.
- .5 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.
- .2 Signboard:
  - .1 Fasten signboards to supporting posts and brackets as indicated.
  - .2 Fasten lane markers to signboard.
  - .3 Use strapping with crimped or bolted connections where signs fastened to utility poles.
  - .4 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 Waste Management: separate waste materials for reuse and recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.
    - .1 Carefully dismantle and salvage wood, aluminum and steel materials for reuse and recycling.
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- .2 Dismantle electrical equipment. Terminate power feed as indicated. Salvage luminaires and pack in weatherproof containers with glassware adequately protected. Salvage brackets, hardware and. Salvage Dispose of lamps, wiring, conduit and accessories.
- .3 Remove recycling containers and bins from site and dispose of materials at appropriate facility.
- .4 Deliver salvaged materials to.

### **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

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