

**Part 1            General**

**1.1                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 guide posts and paint and include product characteristics, performance criteria, physical size, finish and limitations.
- .3            Shop Drawings:
  - .1            Submit drawings stamped and signed by professional engineer registered or licensed in Alberta, Canada.
- .4            Samples:
  - .1            Notify Departmental Representative at least 2 weeks prior to commencing Work of proposed source of guide posts and provide access for inspection.
  - .2            Submit to Departmental Representative at least 2 weeks prior to commencing Work samples of following materials proposed for use:
    - .1            One [1] L container of each type of paint.
- .5            Sustainable Design Submittals:
  - .1            Erosion and Sedimentation Control: submit copy of erosion and sedimentation control plan.
  - .2            Construction Waste Management:
    - .1            Submit project Waste Management Plan highlighting recycling and salvage requirements.
    - .2            Submit calculations on end-of-project recycling rates, salvage rates, and landfill rates demonstrating that 50 % of construction wastes were recycled or salvaged.
  - .3            Recycled Content:
    - .1            Submit listing of recycled content products used, including details of required percentages or recycled content materials and products, showing their costs and percentages of post-consumer and post-industrial content, and total cost of materials for project.
  - .4            Regional Materials: submit evidence that project incorporates required percentage 10% of regional materials and products, showing their cost, distance from project to furthest site of extraction or manufacture, and total cost of materials for project.

**1.2                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 Store and protect guide posts from nicks, scratches, and blemishes.
  - .3 Replace defective or damaged materials with new.
  - .4 Stockpile guide posts as directed by Departmental Representative.
- .4 Develop Construction Waste Management Plan in accordance to section 017419 - Waste Management and Disposal.

## **Part 2 PRODUCTS**

### **2.1 MATERIALS**

- .1 Flexible guide post traffic delineators:
  - .1 The Contractor shall supply flexible guide posts which return to upright positions following repeated impacts and passages of vehicles over them. Such collisions shall not cause serious damage to the post or vehicle. Failure to conform to the requirements specified herein shall be cause for rejection.
  - .2 The posts shall be of uniform high quality and workmanship and be free from defects.
  - .3 Prior to installation, the Contractor shall provide a complete report of the physical properties of the post to the Departmental Representative. This report shall include properties such as low temperature impact resistance, after-impact recoverability and weather resistance.
  - .4 The round posts shall have a minimum outer diameter of 90 mm and an overall length of 1.67 m.
  - .5 The top 250 mm of the post length shall be black and the remainder shall be white.
  - .6 The post shall be straight. Straight is defined as having no point along the length of the post any more than 6 mm removed from a perfectly straight edge placed parallel to any side of the post.
  - .7 Round posts shall be open at the top and bottom.
  - .8 The surface of the post shall be smooth and free from irregularities or defects. The surface of the post shall not be affected by cleaning using scrapers, detergent and water, or solvent.
  - .9 If one-piece construction is not used, then the connections between the pieces shall be at least as strong as if constructed of a single piece. The strength shall exist at temperatures ranging from -50°C to 50°C.
  - .10 The reflective portion of round posts shall be visible from all directions and shall be of sufficient size so as to be recognizable in the dark as a guide post reflector.
  - .11 The post shall not be seriously affected by ozone, exhaust fumes, asphalt or road oils, dirt, vegetation, deicing salts or any other types of air contamination or materials likely to be encountered after installation.

- .12 The post shall withstand without serious damage all elements likely to be encountered after installation including hot (50°C) or cold (-50°C) temperatures, rain, snow, hail, abrasion and physical abuse.
- .13 The posts shall resist, without breaking, tearing, shattering or other serious damage, one highway vehicle impact at a speed of 100 km/h at a test temperature of -33°C.
- .14 The post shall not bend, warp or distort when installed at temperatures up to 50°C or installed in wind velocities up to 120 km/h. Post shall be callable of sustaining 200 km/hr winds.
- .15 Reflective Sheeting:
  - .1 The delineator reflective strips colour should be either florescent yellow or white such that they comply with the principles for pavement edge lines with respect to their colour.
  - .2 The reflective strip shall meet ASTM D4956 Type IX or Type XI for luminance level and that is 100 mm wide and 330 mm in length. To prevent peeling, three staples should be inserted through the overlapped portion of the reflective strip. The reflective strip is to be centered on the top (black) portion of the delineator with 75 mm of the black portion of the delineator exposed both above and below the reflective strip.

### **Part 3 EXECUTION**

#### **3.1 PREPARATION**

- .1 Temporary Erosion and Sedimentation Control:
  - .1 Provide temporary erosion and sedimentation control measures to prevent soil erosion and discharge of soil-bearing water runoff or airborne dust to adjacent wilderness, properties and walkways.
  - .2 Inspect, repair, and maintain erosion and sedimentation control measures during construction until permanent vegetation has been established.
  - .3 Remove erosion and sedimentation controls and restore and stabilize areas disturbed during removal.

#### **3.2 INSTALLATION**

- .1 Install posts to details as indicated and specified herein and according to the design drawings.
- .2 Prior to digging any holes, the Contractor shall contact all applicable utility companies to arrange for utility location and marking.
- .3 Unsuitable material at the bottom of the holes excavated for guide post shall be replaced with granular material at the Contractor's expense. The Contractor shall thoroughly compact the bottom of the hole. The guide posts shall rest directly and solidly on the bottom of the hole at the time of installation.
- .4 Complete backfilling around posts to ground elevation. Excavated material which is unsuitable for use as backfill shall be substituted with granular material by the Contractor

at his expense. Backfill shall be thoroughly compacted, using pneumatic tampers, in layers not exceeding 150 mm, for the full depth of the excavation.

- .5 Upon completion of the installation, the work area shall be restored to its original condition.

### **3.3 CLEANING**

- .1 Progress Cleaning: clean in accordance with Section 01 74 00 - 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 00 - Cleaning.
- .3 Remove recycling containers and bins from site and dispose of materials at appropriate facility.

**END OF SECTION**