

1.0 GENERAL

- .1 The Contractor is responsible to have all underground utilities located. Contact the utility companies of City Departments a minimum of 48 hours in advance.
- .2 The Project Manager will mark the alignment for the installation of the bollards. The Contractor shall contact the Project Manager, to request the marking of the alignment, 48 hours prior to calling for locates.

2.0 MATERIALS

- .1 Bollards - 150 mm (6 inches) diameter rough sawn S.P.F. pressure treated (or equivalent) flat top posts, 1500 mm (60 inches) in length.
- .2 Chain – 7 mm (1/4inch) link zinc, grade 30.
- .3 Removable Steel Bollard - Bollard base is 115 mm (4.5 inches) diameter schedule 40 pipe, 300 mm in length set in 300 mm (12 inches) concrete base. Concrete base is set flush with asphalt surface and open at bottom for drainage.

3.0 INSTALLATION

- .1 The bollards shall be installed on the City side of the property line.
- .2 In locations where bollard and chain is to be installed, the bollards shall be installed on 2.4 m (8 ft) centre.
- .3 In locations where bollards only are to be installed, the bollards shall be installed on 1.5 m (5 ft) centre.
- .4 Bollards shall be installed level and in alignment with the property line. Install bollards in the ground with 750 mm (29.5 inches) exposed above the ground. All holes shall be tamped to ensure bollards are installed tight. The Contractor is responsible for redrilling any holes.
- .5 Install 3.0 m (10 ft) chain gate where directed by the Project Manager. The City shall supply the padlock.
- .6 Drill a hole in the bollard 35 mm (1 3/8 inches) in diameter 100 mm (4inches) from the top of the bollard.
- .7 Install the chain through the holes in each bollard.

- .8 Using 150mm (6 inches) galvanized nails, anchor the chain in each post.
- .9 Chain between posts shall have approximately 100 mm to 150mm (4 to 6 inches) of sway.
- .10 Install removable steel bollard 600 mm (23.5 inches) above ground. Bollard base pipe set in concrete. Concrete base to be flush with asphalt surface.

4.0 SITE CLEAN UP

- .1 The Contractor shall take every precaution not to damage, injure or mark existing surfaces, structures or landscaping on the City owned property or adjacent private properties.
- .2 Any damage that may be caused by the Contractor, his employees or equipment or subcontractors, shall be restored to pre-construction condition at the Contractor's expense and to the satisfaction of the Project Manager.
- .3 All areas disturbed as a result of construction shall be reseeded as per the seeding specifications.

5.0 INSPECTION

- .1 Upon completion of bollard installation, the contractor shall arrange for inspection.

END OF SECTION