
CHAIN LINK FENCES & GATES

PART 1 GENERAL**1.1 Related Work**

- .1 All Division 1 Specification Sections
- .2 Section [02867](#) Junior and Senior Softball Backstop
- .3 Section [02868](#) Backstops
- .4 Section [02911](#) Site Topsoil & Finish Grading
- .5 Section [03300](#) Cast-in-Place Concrete

1.2 Reference Standards

- .1 OPSS 541, Construction Specification for Chain Link Fence
- .2 Canadian Standards Association (CSA).
 - .1 CSA-A23.1/A23.2, Concrete Materials and Methods of Concrete Construction/Methods of Test for Concrete.
 - .2 CAN/CSA-G164-M92 (R2003), Hot Dip Galvanizing of Irregularly Shaped Articles.
 - .3 CSA-W59.2-M1991(R2003), Welded Aluminium Construction
 - .4 CSA-W59-03, Welded Steel Construction
 - .5 CSA-W47.1S1-M1989 (R1998), Certification of Companies for Fusion Welding of Aluminium
 - .6 CSA-W47.1-03, Certification of Companies for Fusion Welding of Steel
- .3 American Society for Testing and Materials (ASTM).
 - .1 ASTM-A53/A53M, Standard Specification for Pipe, Steel, Black and Hot-dipped, Zinc-Coated Welded and Seamless.
 - .2 ASTM-A90/A90M, Standard Test Method for Weight Mass of Coating on Iron and Steel Articles with Zinc or Zinc Alloy Coatings.
- .4 Canadian General Standards Board (CGSB)
 - .1 CAN/CGSB-138.1, Fabric for Chain-Link Fence.
 - .2 CAN/CGSB-138.2, Steel Framework for Chain Link Fence.
 - .3 CAN/CGSB-138.3, Installation of Chain Link Fence.
 - .4 CAN/CGSB-138.4, Gates for Chain Link Fence.
 - .5 CAN/CGSB-1.181, Ready-Mixed Organic Zinc-Rich Coating.

1.3 General Requirements

- .1 Property line and Tennis Court Fencing and Gates: Fencing shall be supplied with black vinyl coated mesh and black powder coated posts, railings and hardware.
- .2 Baseball Backstops, Line Fencing, Dugouts and Gates: Fencing

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shall be supplied with hot dipped galvanized mesh posts, rails and hardware.

PART 2 PRODUCTS**2.1 Materials**

- .1 Fencing
 - .1 Concrete mixes and materials: Cast-in-Place CSA-A23.1/A23.2.
 - .1 Nominal aggregate size: 40-5
 - .2 Compressive strength: 21Mpa minimum 28 days.
 - .2 Chain-link fence fabric: to CAN/CGSB-138.1.
 - .1 Type 1, Class A, medium style
 - .2 Height of wire: 1.8m or as indicated on drawings
 - .3 Posts and Rails: to CAN/CSGB-138.2 + ASTM A53, galvanized steel pipe, Schedule 40 pipe minimum.
 - .4 Bottom tension wire: single strand, galvanized steel wire, 5 mm diameter. **A bottom tension wire will only be used in locations as directed in writing by the Consultant. All other installations require a bottom rail.**
 - .5 Tie wire fasteners: single strand, galvanized steel fabric, 3 mm diameter.
 - .6 Tension bar: 5 x 20 mm minimum galvanized steel
 - .7 Tension bar bands: 3 x 20 mm minimum galvanized steel
 - .8 Gate Frames: to ASTM A53/A53M, galvanized steel pipe, standard weight 45 mm outside diameter pipe for outside frame, 35 mm outside diameter pipe for interior bracing.
 - .1 Fabricate gates as indicated with electrically welded joints, and hot-dip galvanized, painted with zinc pigmented paint after welding.
 - .2 Fasten fence fabric to gate with wire fasteners.
 - .3 Furnish gates with heavy duty galvanized hinges, latch and latch catch with provision for padlock which can be attached and operated from either side of installed gate.
 - .4 Furnish double gates with chin hook to hold gates open and centre rest with drop bolt for closed position.

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- .9 Fittings and hardware: galvanized steel. Post caps to provide waterproof fit, to fasten securely over posts and to carry top rail.
- .10 Zinc pigmented paint: to CAN/CGSB-1.181, Ready-Mixed Organic Zinc-Rich Coating
- .11 Knuckled wire: 2 mm diameter galvanized steel wire to ASTM A121.

2.2 Finishes

- .1 Galvanizing
 - .1 For chain link fabric: to CAN/CGSB-138.1, Grade 1 coating.
 - .2 For pipe: 550 g/m² minimum to ASTM A90/A90M. For other fittings: to CSA G164.
 - .3 Vinyl coating: Black .1 (0.045) mm dry film thickness minimum.
- .2 Painting
 - .1 Painted posts, rails, gates and hardware shall be finished in a black gloss enamel powder coat application. Prior to powder coating all surfaces are to be chemically cleaned and treated with Parker Bonderite and Chlorothene solvent or approved equivalents. Powder coating must be a Polyester 2000 series applied in a thickness of 4-5 mils by electrostatic coat and oven cured to a smooth even finish.

PART 3 EXECUTION**3.1 Grading**

- 1. Remove debris and correct ground undulations along fence line to obtain smooth uniform gradient between posts. Provide clearance between bottom of fence and ground surface neither less than 30 mm nor more than 50 mm.

3.2 Installation

- .1 Erect fence along lines as directed by the Consultant and in accordance with CAN/CGSB-138.3.
- .2 Install to alignment specified, line posts, corner posts, gate posts and top rails to provide rigid structure for [1.2 m] [1.8 m] high fabric and gates. Excavate post holes to dimensions indicated by methods approved by City Representative or Consultant.

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- .3 Install corner post where change in alignment exceeds 10 degrees.
- .4 Install additional straining posts at sharp changes in grade and where directed by the Consultant.
- .5 Install end posts at end of fence and at buildings. Install gate posts on both sides of gate openings.
- .6 Maximum spacing of posts is 3.0 m O.C, measured parallel to ground surface.
- .7 Install line and corner posts plumb.
- .8 Set posts in cylindrical cast-in-place concrete footings sized as follows.

Location	Depth	Diameter
.9 P		
Fence height up to 1.2 m:		
Line posts	900 mm	250 mm
Gate and corner posts	1000 mm	300 mm
Fence height up 1.2 to 1.8 m:		
Line posts	1000 mm	250 mm
Gate and corner posts	1200 mm	300 mm

Set concrete in post holes then embed posts into concrete to depths indicated. Extend concrete 50 mm above ground level and slope to drain away from posts. Brace to hold posts in plumb position and true to alignment and elevation until concrete has set.

- .10 Set posts to within 150 mm from bottom of concrete footing.
- .11 Set top of concrete footing 50 mm above finished grade. Slope top of footing to ensure water run-off.
- .12 Do not install fence fabric until concrete has cured a minimum of five (5) days.
- .13 Position bottom of fabric 50 mm above finished grade with tension wire stretched taut between posts.
- .14 Align top of posts to ensure that top rail varies gradually with changes in ground elevations.

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- .15 Pass top rail through line post tops to form continuous bracing. Install 150 mm long couplings mild-span at pipe ends.
- .16 Brace each gate and corner post back to adjust line post with horizontal centre brace rail. Install brace rail, one bay from corner to gate posts.
- .17 Install 10 mm steel truss rod and truss tightened diagonally from top of gate post back to adjacent line post.
- .18 Fasten fabric to top rail, line posts, braces and bottom tension wire with 3.5 mm wire ties, maximum 300 mm centres.
- .19 Attach fabric to corner and gate posts with tension bars and tension bar clips. Stretch fabric between posts at intervals of 30.0 m maximum.
- .20 Secure fabric to top and mid rails, line posts, stretcher bar and bottom rail or bottom tension wire (where directed in writing by the City of Brampton) with tie wires at 450 mm intervals. Give tie wires minimum two twists.

3.3 Installation of Gates

- .1 Install gates in locations indicated or as directed by the Consultant.
- .2 Set gate bottom approximately 40 mm above ground surface.
- .3 Install gate stops where indicated.

3.4 Touch-Up

- .1 Clean damaged surfaces with wire brush removing loose and cracked coatings. Apply two coats or approved zinc pigmented paint to damaged areas.
- .2

3.5 Cleaning

- .1 Clean and trim areas disturbed by operations. Dispose of surplus excavated material and replace damaged turf with sod as directed by the Consultant.

END OF SECTION - 02821