

**Part 1 General**

**1.1 REFERENCES**

- .1 ASTM International
  - .1 ASTM A392, Standard Specification for Zinc-Coated Steel Chain-Link Fence Fabric.
  - .2 ASTM F1083, Standard Specification for Pipe, Hot-Dipped Zinc-Coated (Galvanized) Welded, for Fence Structures.
  - .3 ASTM F626, Standard Specification for Fence Fittings.
  - .4 ASTM F900, Standard Specification for Industrial and Commercial Swing Gates.
  - .5 ASTM F567, Standard Practice for Installation of Chain-Link Fence.

**Part 2 Products**

**2.1 MATERIALS**

- .1 Steel Chain Link Fabric
  - .1 9 gauge wire, 50 mm square box weave.
  - .2 Hot dipped galvanized, zinc coated to ASTM A392.
    - .1 Class 2: coverage 610 g/m<sup>2</sup>.
- .2 Round Steel Pipe and Rail
  - .1 Pipe diameter and weight to ASTM F1083.
    - .1 Grade: regular, yield strength 205 MPa.
  - .2 Fence post diameters:
    - .1 Line post: 70 mm
    - .2 Terminal post, corner post and gate post: 100 mm
  - .3 Rail diameters:
    - .1 Top rail, bottom rail and intermediate rail: 42 mm
  - .4 Hot-dip galvanized, zinc coated to ASTM A392.
    - .1 Class 2: coverage 610 g/m<sup>2</sup> interior and exterior.
- .3 Tension and Brace Bands
  - .1 Galvanized pressed steel to ASTM F626.
    - .1 Zinc coating: 366 g/m<sup>2</sup>.
  - .2 Thickness: 12 gauge
  - .3 Width: 19 mm
  - .4 Carriage bolts: 7 mm galvanized steel.
- .4 Terminal and gate post caps, intermediate post loop tops, rail and brace ends, rail sleeves and boulevard clamps to ASTM F626.
  - .1 Zinc coating: 366 g/m<sup>2</sup>.
- .5 Truss Rod Assembly to ASTM F626
  - .1 Steel truss rod with pressed steel tightener diameter: 9 mm
  - .2 Zinc coating: 366 g/m<sup>2</sup>.
- .6 Tension Bar to ASTM F626

- .1 Bar cross section: 4.8 mm by 19 mm
- .2 Zinc coating: 366 g/m<sup>2</sup>.
- .7 Tie Wire and Hog Ring
  - .1 Steel wire: 9 gauge.
  - .2 Zinc coating of 366 g/m<sup>2</sup>.
- .8 Swing Gates
  - .1 Galvanized steel pipe welded to ASTM F900.
  - .2 Gate fabric to match steel chain link fence fabric.
- .9 Concrete
  - .1 28 day compressive strength: 17 MPa.

### **Part 3 Execution**

#### **3.1 PREPARATION**

- .1 Clear fence line.
  - .1 Cut and remove shrubs and tree branches within 1000 mm in all directions to full height of fence.
  - .2 Remove loose gravel, stone and debris on top of bedrock, 500 mm on either side of fence line.
  - .3 Bottom rail to be maximum of 100 mm above ground.
    - .1 Re-grade ground surface where required.
    - .2 Extend Chain Link Fence Fabric below bottom rail within 25 mm of ground.

#### **3.2 PROCEDURE**

- .1 Top and bottom rail required for entire length of fence.
- .2 Install fence below bridge to within 20 mm to 50 mm from bridge soffit.
- .3 Intermediate horizontal rail required when fence over 2000 mm in height.
- .4 Vertical fence supports required against any bridge component or pier.
  - .1 Gap between vertical fence supports and bridge to be 20 mm to 50 mm.
- .5 Bottom rail to be maximum of 100 mm above ground.
- .6 Fence Posts:
  - .1 Set fence posts plumb in concrete footings to ASTM F567.
  - .2 Footing depth:
    - .1 For posts up to 1200 mm in height: 600 mm.
    - .2 For posts over 1200 mm in height: 1050 mm.
  - .3 Top of footing to be at grade and crowned to shed water.
  - .4 Install line posts at intervals not exceeding 3000 mm on centre.
  - .5 Secure terminal posts beside pier.
    - .1 300 mm from top of terminal post.

- .2 Fasten terminal post using band clamp and masonry anchor.
- .7 Gates:
  - .1 Swing inward and outward.
  - .2 Bottom clearance: 75 mm.
  - .3 Width: 1200 mm
  - .4 Hinges: male strap hinge to be installed on gate post, female strap hinge to be installed on gate.
    - .1 Top male hinge to point down.
    - .2 Bottom male hinge to point up.
  - .5 Latches:
    - .1 Allow gate to swing inward and outward.
    - .2 Allow access to lock from both sides of gate.
- .8 Nuts and Bolts:
  - .1 Use flat head carriage bolts on unsecured side.
  - .2 Thread lock to be applied to treads.
- .9 Top Rail:
  - .1 Install continuously through line post top loop.
  - .2 Splice rail using minimum 150 mm long rail sleeves.
  - .3 Secure to end post, gate post and corner post with brace band rail end.
- .10 Intermediate and Bottom Rail:
  - .1 Field cut to length.
  - .2 Secure to end post, gate post, corner post and line post using brace band rail end or boulevard clamp.
- .11 Chain Link Fence Fabric:
  - .1 Install fabric to outside of frame work.
  - .2 Attach fabric to end post, thread tension bar through fabric.
  - .3 Secure tension bar to end post with tension bands, space 300 mm on centre.
  - .4 Stretch fabric free of sag.
  - .5 Secure fabric to line posts with tie wires spaced 300 mm on centre.
  - .6 Secure fabric to top, bottom and intermediate rail with tie wires spaced 450 mm on centre.
  - .7 Wrap tie wire 360 degrees around post or rail and 2 ends twisted together 3 full turns.
- .12 Truss Rod:
  - .1 Install truss rod between bottom of terminal post, gate post and corner post to 10mm below intermediate rail on line post directly next in line.
    - .1 Truss rod tightening device to be at lower end of truss rod.

### 3.3 PROJECT RELATED DAMAGE

- .1 Report any damage immediately to Departmental Representative.

- .2 Make good any damage to the approval of Departmental Representative.

**3.4 PROJECT CLEAN-UP**

- .1 Remove from work site all debris and equipment after completion of work.
- .2 Dispose all garbage and debris to approved landfill site.

**END OF SECTION**