

**SECTION 32 31 13**  
**CHAIN LINK FENCES AND GATES**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Fence framework, fabric, gates and accessories.

**1.02 RELATED REQUIREMENTS**

- A. Section 03 30 00- Cast-In-Place Concrete

**1.03 REFERENCE STANDARDS**

- A. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware; 2009.
- B. ASTM A392 - Standard Specification for Zinc-Coated Steel Chain-Link Fence Fabric; 2011a.
- C. ASTM A1011/A1011M - Standard Specification for Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, and Ultra-High Strength; 2014.
- D. ASTM F567 - Standard Practice for Installation of Chain-Link Fence; 2011.
- E. ASTM F1043 - Standard Specification for Strength and Protective Coatings on Steel Industrial Fence Framework; 2014.
- F. ASTM F1083 - Standard Specification for Pipe, Steel, Hot-Dipped Zinc-Coated (Galvanized) Welded, for Fence Structures; 2013.

**1.04 SUBMITTALS**

- A. See Section 01 30 00 - Administration of Contracts and Project Procedures, for submittal procedures.
- B. Product Data: Provide data on fabric, posts, accessories, fittings and hardware.
- C. Shop Drawings: Indicate plan layout, spacing of components, post foundation dimensions, hardware anchorage, and schedule of components.
- D. Project Record Documents: Accurately record actual locations of property perimeter posts relative to property lines and easements.

**PART 2 PRODUCTS**

**2.01 MATERIALS**

- A. Posts, Rails, and Frames: shall be steel pipe, Type I, ASTM F 1083, standard weight schedule 40 minimum yield strength of 25,000 psi, hot-dipped galvanized with minimum average 1.8 oz. per square foot of coated surface area; All nuts, bolts, screws and other fastening devices shall be cadmium plated. Bolts shall not protrude more than 1/8 inch beyond fully tightened nuts and shall be peened. Loose fittings such as pipe caps, post caps, etc. shall be securely fastened with No. 14. 0.239 inch diameter cadmium plated drive screws.
- B. Posts, Rails, and Frames: Type II cold formed welded steel pipe complying with ASTM F 103, Group 1C, with minimum yield strength of 50,000 psi. All nuts, bolts, screws and other fastening devices shall be cadmium plated. Bolts shall not protrude more than 1/8 inch beyond fully tightened nuts and shall be peened. Loose fittings such as pipe caps, post caps, etc. shall be securely fastened with No. 14. 0.239 inch diameter cadmium plated drive screws.
- C. Wire Fabric: ASTM A392 zinc coated steel chain link fabric.
- D. Concrete: Type specified in Section 03 30 00.

**2.02 COMPONENTS**

- A. Line Posts: see Drawings
- B. Corner and Terminal Posts: see Drawings
- C. Gate Posts: see Drawings

- D. Top and Brace Rail: see Drawings
- E. Gate Frame: see Drawings
- F. Fabric: 2 inch (51 mm) diamond mesh interwoven wire, 6 gage, 0.1620 inch (4.12 mm) thick, top selvage knuckle end closed, bottom selvage twisted tight.
- G. Tension Wire: 6 gage, 0.1620 inch (4.12 mm) thick steel, single strand.

### **2.03 ACCESSORIES**

- A. Caps: Cast steel galvanized; sized to post diameter, set screw retainer.
- B. Fittings: Sleeves, bands, clips, rail ends, tension bars, fasteners and fittings; steel.
- C. Hardware for Single Swinging Gates: 180 degree hinges, 2 for gates up to 60 inches (1525 mm) high, 3 for taller gates; fork latch with gravity drop and padlock hasp; keeper to hold gate in fully open position.
- D. Hardware for Double Swinging Gates: 180 degree hinges, 2 for gates up to 60 inches (1525 mm) high, 3 for taller gates; drop bolt on inactive leaf engaging socket stop set in concrete, active leaf latched to inactive leaf preventing raising of drop bolt, padlock hasp; keepers to hold gate in fully open position.
- E. Padlocks for gates shall be round 2-1/2" body diameter, 7/16" diameter hardened steel shackle x 1" clearance, 5 pin tumbler, keyed alike x 2 keys each, non-removable key in unlocked position. American Lock Co. #600 DL, telephone (800) 426-0206, or approved equal.
- F. Anchoring compound for fence posts shall be "Thorogrip" fast setting anchoring compound, as manufactured by DeGussa Building Systems, 880 Valley Park Drive, Shakopee, MN 55379, Phone No. 1-800-433-9517, or approved equal. The crown grout or sealer shall be ThoRoc "HBA" repair mortar as manufactured by DeGussa Building Systems or approved equal. Local Representative is Phil Catalano, DeGussa sales office, 664 Craig Avenue, Staten Island, NY 10307, Phone 1-718-667-6121, Fax 1-718-356-6964.

### **2.04 FINISHES**

- A. Components and Fabric: Vinyl coated, as indicated on Drawings, over coating of 1.8 oz/sq ft (550 g/sq m) galvanizing.
- B. Hardware: Hot-dip galvanized to weight required by ASTM A153/A153M.
- C. Accessories: Same finish as framing.
- D. Color(s): To be selected by Landscape Architect.

## **PART 3 EXECUTION**

### **3.01 INSTALLATION**

- A. Install framework, fabric, accessories and gates in accordance with ASTM F567.
- B. Place fabric on outside of posts and rails.
- C. Set intermediate posts plumb, in concrete footings with top of footing 2 inches above finish grade. Slope top of concrete for water runoff.
- D. Line Post Footing Depth Below Finish Grade: ASTM F567.
- E. Corner, Gate and Terminal Post Footing Depth Below Finish Grade: ASTM F567.
- F. Brace each gate and corner post to adjacent line post with horizontal center brace rail and diagonal truss rods. Install brace rail one bay from end and gate posts.
- G. Provide top rail through line post tops and splice with 6 inch (150 mm) long rail sleeves.
- H. Install center brace rail on corner gate leaves.
- I. Do not stretch fabric until concrete foundation has cured 28 days.

- J. Stretch fabric between terminal posts or at intervals of 100 feet (30 m) maximum, whichever is less.
- K. Position bottom of fabric 2 inches (50 mm) above finished grade.
- L. Fasten fabric to top rail, line posts, braces, and bottom tension wire with tie wire at maximum 15 inches (380 mm) on centers.
- M. Attach fabric to end, corner, and gate posts with tension bars and tension bar clips.
- N. Install bottom tension wire stretched taut between terminal posts.
- O. Install support arms sloped inward and attach barbed wire; tension and secure.
- P. Do not attach the hinged side of gate to building wall; provide gate posts.
- Q. Install gate with fabric and barbed wire overhang to match fence. Install hardware.
- R. Provide concrete center drop to footing depth and drop rod retainers at center of double gate openings.
- T. Install gate locking device as indicated.

### **3.02 TOLERANCES**

- A. Maximum Variation From Plumb: 1/4 inch (6 mm).
- B. Maximum Offset From True Position: 1 inch (25 mm).
- C. Components shall not infringe adjacent property lines.

**END OF SECTION**