

SECTION 32 31 13 - CHAIN LINK FENCES AND GATES

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes:

1. Chain-Link Fences
2. Gates

1.2 SUBMITTALS

- A. Shop Drawings: Show locations, components, materials, dimensions, sizes, weights, and finishes of components. Include plans, gate elevations, sections, details of post anchorage, attachment, bracing, and other required installation and operational clearances.

PART 2 - PRODUCTS

2.1 CHAIN-LINK FENCE FABRIC

- A. General: Height indicated on Drawings. Comply with ASTM A 392, CLFMI CLF 2445, and requirements indicated below:
1. Steel Wire Fabric: Metallic-coated wire with a diameter of 0.148 inch (3.76 mm).
 - a. Mesh Size: 2 inches (50 mm).
 - b. Metallic (Zinc) Coating: ASTM A 392, Type II.
 2. Selvage: Knuckled at both selvages.

2.2 FENCE FRAMING

- A. Posts and Rails: Comply with ASTM F 1043 for framing, ASTM F 1083 for Group IC round pipe, and the following:
1. Group: IA, round steel pipe, Schedule 40.
 2. Fence Height: As indicated.
 3. Strength Requirement: Light industrial according to ASTM F 1043.
 4. Coating for Steel Framing: Metallic coating.

2.3 SWING GATES

- A. General: Comply with ASTM F 900 for single or double swing gate types as indicated.

1. Metal Pipe and Tubing: Galvanized steel. Comply with ASTM F 1083 and ASTM F 1043 for materials and protective coatings.
- B. Frames and Bracing: Fabricate members from round, galvanized steel tubing with outside dimension and weight according to ASTM F 900 and the following:
 1. Gate Fabric Height: **2 inches (50 mm)** less than adjacent fence height.
 2. Leaf Width: As indicated.
 3. Frame Members: Tubular steel, **1.90 inches (48 mm)** round.
- C. Frame Corner Construction:
 1. Welded or assembled with corner fittings and **5/16-inch- (7.9-mm-)** diameter, adjustable truss rods for panels **5 feet (1.52 m)** wide or wider.
- D. Hardware: Latches permitting operation from both sides of gate, hinges, and keepers for each gate leaf more than **5 feet (1.52 m)** wide. Fabricate latches with integral eye openings for padlocking; padlock accessible from both sides of gate.

2.4 FITTINGS

- A. General: Comply with ASTM F 626.
- B. Metallic Coating for Pressed Steel or Cast Iron: Not less than **1.2 oz. /sq. ft. (366 g /sq. m)** zinc.

2.5 CAST-IN-PLACE CONCRETE

- A. Materials: Portland cement complying with ASTM C 150, Type I aggregates complying with ASTM C 33, and potable water.
 1. Concrete Mixes: Normal-weight concrete air entrained with not less than **3000-psi (20.7-MPa)** compressive strength (28 days), **3-inch (75-mm)** slump, and **1-inch (25-mm)** maximum size aggregate.

2.6 GROUT

- A. Nonshrink, Nonmetallic Grout: Factory-packaged, nonstaining, noncorrosive, nongaseous grout complying with ASTM C 1107.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. General: Install chain-link fencing to comply with ASTM F 567 and more stringent requirements specified.
- B. Post Excavation:

1. Interior: Center and align posts by core drilling slab.
2. Exterior: Drill or hand-excavate holes for posts to diameters and spacings indicated, in firm, undisturbed soil.

C. Post Setting:

1. Interior: Anchor posts in concrete by core drilling holes 1-inch greater than post outside diameter. Clean holes of all loose material, and insert posts, imbedment of 6-inch required.
 - a. After posts are set, fill annular space between post and hole setting of grout solid with hydraulic grout and tamp for consolidation. Check each post for vertical and top alignment, and hold in position during
 - b. Cover anchorage joint with round steel flange welded to post.
2. Exterior: Set posts in concrete at indicated spacing into firm, undisturbed soil.
 - a. Concrete Fill: Place concrete around posts to dimensions indicated and vibrate or tamp for consolidation. Protect aboveground portion of posts from concrete splatter.

D. Terminal Posts: Locate terminal end, corner, and gate posts per ASTM F 567 and terminal pull posts at changes in horizontal or vertical alignment.

E. Line Posts: Space line posts uniformly at 10 feet (3 m) o.c.

F. Post Bracing and Intermediate Rails: Install according to ASTM F 567. Install braces at end and gate posts and at both sides of corner and pull posts.

G. Top Rail: Install according to ASTM F 567.

H. Chain-Link Fabric: Apply fabric to outside of enclosing framework. Leave 2 inches (50 mm) between finish grade or surface and bottom selvage, unless otherwise indicated.

I. Tie Wires: Attach wire per ASTM F 626. Bend ends of wire to minimize hazard to individuals and clothing.

J. Fasteners: Install nuts for tension bands and carriage bolts on the side of the fence opposite the fabric side. Peen ends of bolts or score threads to prevent removal of nuts.

3.2 GATE INSTALLATION

- A. Install gates according to manufacturer's written instructions, level, plumb, and secure for full opening without interference. Attach fabric as for fencing. Attach hardware using tamper-resistant or concealed means. Install ground-set items in concrete for anchorage. Adjust hardware for smooth operation and lubricate where necessary.

END OF SECTION 32 31 13

BLANK SHEET