

SECTION 02831

CHAIN LINK FENCES AND GATES

1. PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Fence Framework, Fabric, and Accessories.
- B. Excavation for Post Bases and Concrete Foundation for Posts.
- C. Manual Gates and Related Hardware.

1.2 RELATED SECTIONS

- A. Section 3001 – Concrete: Concrete anchorage for posts.

1.3 REFERENCES

- A. ASTM A123 – Zinc (Hot-Dipped Galvanized) Coatings on Iron and Steel Products.
- B. ASTM F567 – Installation of Chain-Link Fence.
- C. ASTM A120 – Pipe, Steel, Black and Hot-Dipped Zinc Coated (Galvanized) Welded and Seamless, for Ordinary Uses.
- D. ASTM A153 – Zinc Coating (Hot-Dipped) on Iron and Steel Hardware.
- E. ASTM A428 – Weight of Coating on Aluminum-Coated Iron or Steel Articles.
- F. ASTM A491 – Aluminum-Coated Steel Chain Link Fence Fabric.
- G. ASTM A585 – Aluminum-Coated Steel Barbed Wire.
- H. ASTM C94 – Ready-mixed Concrete.
- I. Chain Link Fence Manufacturers Institute (CLFMI) – Product Manual.

1.4 SYSTEM DESCRIPTION

- A. Fence Height: 6 feet, not including barbed wire as indicated on plans.
- B. Gate Width: See plans.
- C. Line Post Spacing: At intervals not exceeding 10 feet. See plans.

1.5 UNIT PRICE – MEASUREMENT AND PAYMENT

- A. Fencing:
 - 1. Basis of Measurement: Included in other Work items of this Project.
 - 2. Basis of Payment: Includes labor, material and equipment to install the chain link fence, gate, posts and other items with and without barb wire as indicated on the plans.
- B. Post and Chain Gate:
 - 1. Basis of Measurement: At the unit price bid per each as stated in the proposal.
 - 2. Basis of Payment: Includes all labor, material, and equipment necessary to install posts and a chain as indicated on the plans.

1.6 SUBMITTALS

- A. Submit under provisions of Section 01300 - Submittals.
- B. Submit shop drawings and product data for all items to be installed and/or constructed within this Section
- C. Submit manufacturer's instructions for all product data.
- D. Shop Drawings: Indicate plan layout, spacing of components, post foundation dimensions, hardware anchorage, and schedule of components.
- E. Product Data: Provide data on fabric, posts, accessories, fittings, and hardware.
- F. Manufacturer's Installation Instructions: Indicate installation requirements post foundation anchor bolt templates.

1.7 PROJECT RECORD DOCUMENTS

- A. Submit under provisions of Section 01700 – Contract Closeout.
- B. Accurately record actual locations of property perimeter posts relative to property lines and easements.

1.8 QUALITY ASSURANCE

- A. Perform Work in accordance with CLFMI – Product manual and manufacturer’s instructions.

1.9 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing the products specified in this Section with minimum three years documented experience.

1.10 FIELD MEASUREMENTS

- A. Verify that field measurements are as indicated on shop drawings.

2. PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Cyclone Fence, Inc. Product Chain Link Fence.
- B. Anchor Fence, Inc. Product Chain Link Fence.
- C. Semmerling Manufacturing Corporation.
- D. Substitutions: Under provisions of Section 01600.

2.2 MATERIALS

- A. Framing: ASTM A120; Schedule 40 steel pipe, hot dipped galvanized, seamless without joints.

- B. Fabric Wire: ASTM A491; aluminum-coated wire fabric.
- C. Barbed Wire: ASTM A585; aluminum-coated steel, 12 gauge thick wire, 3 strands, 4 points at 5 inch on center.

2.3 COMPONENTS

- A. Line, Corner, Terminal, and Gate Posts: Diameters as specified on plans.
- B. Top and Brace Rail: Diameter as specified on the plans, plain end, sleeve coupled.
- C. Gate Frame: 2-inch minimum diameter for welded fabrication.
- D. Fabric: 2-inch diamond mesh interwoven wire, 9 gauge thick, top selvage twisted tight, bottom selvage knuckle end closed.
- E. Tension Wire: 6 gauge thick steel, single strand.

2.4 ACCESSORIES

- A. Caps: Malleable iron galvanized sized to post diameter, set screw retainer.
- B. Extension Arms: Cast steel galvanized to accommodate 3 strands of barbed wire, single arm, sloped to 45 degrees.
- C. Gate Hardware: Fork latch with gravity drop, three 180 degrees gate hinges per leaf, and hardware for padlock.

2.5 FINISHES

- A. Components and Hardware: Galvanized to ASTM A123; 2.0 ounces/square feet.
- B. Fabric: Aluminum coating to ASTM A428; 0.40 ounces/square feet.
- C. Accessories: Same finish as framing.

3. PART 3 EXECUTION

3.1 INSTALLATION

- A. Install framework, fabric, and gates in accordance with manufacturer's instructions.
- B. Set line, terminal, gate, and corner posts plumb, in concrete footings with top of concrete finished with 1 inch slope to grade.
- C. Line Post Footings to be installed in pump station. Fill with expansive grout after post installation. See plans.
- D. Corner, Gate and Terminal Post Footing to be installed in pump station. Fill with expansive grout after post installation. See plans.
- E. 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.
- F. Provide top rail through line post tops and splice with 6-inch long rail sleeves.

- G. Install center and bottom brace rail on corner gate leaves.
- H. Stretch fabric between terminal posts or at intervals of 100 feet maximum, whichever is less.
- I. Position bottom of fabric 1 inch above finished grade.
- J. Fasten fabric to top rail, line posts, braces, and bottom tension wire with tie wire at maximum 15 inches on centers.
- K. Attach fabric to end, corner, and gate posts with tension bars and tension bar clips.
- L. Install bottom tension wire stretched taut between terminal posts.
- M. Install support arms sloped outward and attach barbed wire; tension and secure.
- N. Install gate with fabric and barbed wire overhang to match fence. Install three hinges per leaf, latch, catches, drop bolt retainer, and locking clamp.

3.2 ERECTION TOLERANCES

- A. Maximum Variation from Plum: $\frac{1}{4}$ inch.
- B. Maximum Offset from True Position: 1 inch.
- C. Components shall not infringe adjacent property lines.

END OF SECTION