

SECTION 323113
CHAIN LINK FENCES AND GATES

PART 1 - GENERAL

1.1 STIPULATIONS

- A. The specifications sections “General Conditions of Contract”, “Special Conditions” and “Division 1 - General Requirements” form a part of this section by this reference thereto, and shall have the same force and effect as if printed herewith in full.

1.2 SUMMARY

- A. This work required under this section consists of furnishing all labor, materials, equipment, services, and related items necessary to complete all the temporary chain link fencing work as indicated on the Drawings and described in the specifications.

1.3 SUBMITTALS

- A. Shop Drawings: Layout of fences with dimensions, details, and finishes of components, accessories, and post foundations.
- B. Product Data: Submit manufacturer’s technical data and installation instructions for metal fencing, fabric, and accessories.

1.4 QUALITY CONTROL

- A. Provide chain link fences from a single source including necessary erection accessories, fittings, and fastenings.
- B. Perform work in compliance with applicable requirements of governing authorities having jurisdiction.
- C. All material specified herein shall be full weight and first class in every respect. All fittings necessary to produce a complete installation shall be included even though not specifically mentioned.

PART 2 - PRODUCTS

2.01 MANUFACTURER

- A. Products shall be supplied from qualified manufacturers having a minimum of five years' experience manufacturing galvanized coated chain link fencing and shall meet the following specifications for design, size, gauge of metal parts and fabrication.

2.02 CHAIN LINK FENCE FABRIC

- A. Size: Helically wound and woven to height as indicated on Drawings, 2" diamond mesh, 9 gauge, 80,000 psi steel wire.
- B. Top and bottom selvages shall be knuckled.
- C. Finish: Galvanized for all surfaces including cut ends, ASTM A 392, Class II, with not less than 2.0 oz. zinc per square foot of surface. All wire shall be smooth finished with no protruding burrs or points from galvanizing process.

2.03 STEEL FENCE FRAMING

- A. Steel Pipe - Type 1: ASTM F 1083, standard weight schedule 40; minimum yield strength of 25,000 psi, sizes as required.
- B. Hot-dipped galvanized, ASTM A120 or A123, with minimum average 1.8 oz/ft² of coated surface area.
- C. Top and bottom rail: Manufacturer's longest lengths, 7" expansion sleeve with spring, for each joint. Provide means for attaching rails securely to each gate, corner, pull, and end post.
 - 1. 1-5/8" o.d. pipe, 0.140" minimum pipe wall thickness, 2.27 lbs. per linear foot.

2.04 ACCESSORIES

- A. Chain link fence accessories: ASTM F 626, provide items required to complete fence system. Galvanize each ferrous metal item and finish to match framing.
- B. Post tops: Formed steel, cast malleable iron, weathertight closure cap for tubular posts. Provide one through riveted top for each post. Provide tops to permit passage of top rail.
- C. Top rail and brace rail ends: Pressed steel per ASTM F 626, for connection of rail and brace to terminal posts.
- D. Wire ties: 9 gauge galvanized steel wire for attachment of fabric to line posts. Double

wrap 13 gauge for rails and braces. Hog ring ties of 12-1/2 gauge for attachment of fabric to tension wire. Ties shall be spaced 1 ft. 2 in. apart on line posts and 2 ft. apart on top, bottom, and middle rails. Each end shall be wrapped around the chain link fabric at least 540 degrees.

- E. Brace and tension (stretcher bar) bands: Bands shall be 11 gauge spaced not over 14" o.c, to secure stretcher bars to terminal, corner, pull, and gate posts. Install stretcher bars at vertical edges and at top and bottom edges.
- F. Tension (stretcher) bars: One piece lengths equal to 2 inches less than full height of fabric with a minimum cross-section of 1/4" x 3/4". Provide tension (stretcher) bars where chain link fabric meets terminal, corner, pull, and gate posts.
- G. Tension wire: Galvanized coated steel wire, 7-gauge, diameter wire with tensile strength of 75,000 psi.
- H. Truss rods & tightener: Steel rods with minimum diameter of 5/16". Capable of withstanding a tension of minimum 2,000 lbs.
- I. Nuts and bolts shall be hot dipped galvanized.

2.05 CHAIN LINK SWING GATES

- A. Gate frames: Fabricate chain link swing gates in accordance with ASTM F 900 using galvanized steel tubular members, 2" square, weighing 2.60 lb/ft. Fusion weld connections to form a rigid one-piece unit.
- B. Chain link fence fabric: Install fabric with hook bolts and tension bars at all 4 sides. Attach to gate frame at not more than 15" on center.
- C. Hardware materials: Hot dipped galvanized steel or malleable iron shapes to suit gate size.
- D. Hinges: Structurally capable of supporting gate leaf and allow opening and closing without binding. Non-lift-off type hinge design shall permit gate to swing 180° outward.
- E. Latch: Forked type capable of retaining gate in closed position and have provision for padlock. Latch shall permit operation from either side of gate.
- F. Keeper: Provide keeper for each gate leaf over 5' wide. Gate keeper shall consist of mechanical device for securing free end of gate when in full open position.

- G. Double gates: Provide drop rod to hold inactive leaf. Provide gate stop pipe to engage center drop rod. Provide locking device and padlock eyes as an integral part of latch, requiring one padlock for locking both gate leaves.
- H. Barbed wire top: Incorporate provisions for barbed extensions by extending vertical members 13” to accommodate three strands of barbed wire.
- I. Lock: Provide one padlock with (2) keys for each gate.
- J. Gate posts: Steel pipe ASTM F 1083 standard weight schedule 40; minimum yield strength of 25,000 psi or steel square sections (ASTM A 500, Grade B) having minimum yield strength of 40,000 psi size as indicated. Hot-dipped galvanized with minimum 1.8 oz/ft² of zinc.

<u>Gate leaf single width</u>	<u>Post Size (Round)</u>	<u>Weight</u>
6 ft or less	4.00 in	9.11 lb/ft

2.06 CONCRETE MATERIAL FOR FOUNDATIONS

- A. Refer to Specification Section 321313 - Site Concrete.

2.07 BARBED WIRE

- A. Steel Barbed Wire: ASTM A 121, two-strand barbed wire, 0.099-inch diameter line wire with 0.080-inch diameter, four-point round barbs spaced not more than 5 inches on center.
 - 1. Aluminum Coating: Type A.
 - 2. Zinc Coating: Type Z, Class 3.

PART 3 - EXECUTION

3.01 PREPARATION

- A. Coordinate setting posts with construction activities of other trades.
- B. Verify areas to receive fencing are completed to final grades and elevations.
- C. Ensure property lines and legal boundaries of work are clearly established.

- D. Utility Identification: Notify PA One-Call System at 1-800-242-1776 at least 3 days prior to excavation. Coordinate with Client Agent and other contractors to determine the locations of other utility services.

3.02 CHAIN LINK FENCE FRAMING INSTALLATION

- A. Install chain link fence accordance with ASTM F 567 and manufacturer's instructions.
- B. Space line posts uniformly at 10' maximum on center.
- C. Check each post for vertical and top alignment, and maintain in position during placement and finishing.
- D. Bracing: Provide.
- E. Stretcher bars: Provide one tension bar for each corner and end post. Thread tension bar through or clamp to fabric 4" o.c. and secure to posts with metal bands spaced 14" o.c.
- F. Top Rail: Run rails continuously through post caps.
- G. Bottom Rails: Attach to line or end posts with galvanized steel boulevard clamps.

3.03 CHAIN LINK FABRIC INSTALLATION

- A. Fabric: Install fabric on security side and attach so that fabric remains in tension and fabric is flush with the bottom and top rails after pulling force is released.
- B. Caps shall be provided on all post tops with rivet to post.

3.04 CHAIN LINK SWING GATE POST INSTALLATION

- A. Install gate posts in accordance with the manufacturer's instructions.

3.05 GATE INSTALLATION

- A. Install gates plumb, level, and secure for full opening without interference.
- B. Attach hardware by means which will prevent unauthorized removal.
- C. Adjust hardware for smooth operation.

3.06 CLEANING AND HANDLING

- A. Clean up debris and unused material, and remove from the site.

END OF SECTION