

STANDARD SPECIFICATION
SECTION 02834 CHAIN LINK FENCES AND GATES

PART 1 - GENERAL

1.01 DESCRIPTION

This section includes materials and installation of chain link fences and gates having top and bottom tension wires, anticlimb extension arms, and barbed wire.

1.02 RELATED WORK SPECIFIED ELSEWHERE

- A. Record Drawings and Submittals: STD SPEC 01300.
- B. General Concrete Construction: STD SPEC 03000.

1.03 SUBMITTALS

- A. Submit submittal packages in accordance with Standard Specification Section 01300.
- B. Submit manufacturer's descriptive literature and standard drawings of fence and gate installation.
- C. Submit manufacturer's certificate or original shipping tags showing compliance with cited U.S. Federal and ASTM specifications.

PART 2 - MATERIALS

2.01 GALVANIZED CHAIN LINK FABRIC

- A. Use fabric conforming to ASTM A 392, Class I; or U.S. Federal Specification RR-F-00191/1C, Type I; 1.2 ounces per square foot zinc coating, hot-dip galvanized after weaving, 2-inch diamond mesh, 9-gage steel wire. Fabric height shall be 72 inches unless otherwise shown on the Drawings.
- B. Top and bottom selvage twisted and barbed.
- C. Tie wire shall be same material and gage as the chain link fabric.

2.02 GALVANIZED POSTS, BRACES AND RAILS

- A. Use steel pipe conforming to ASTM F 1083, 1.8 ounces per square foot zinc coating, hot-dip galvanized.

- B. Provide posts and braces in compliance with ASTM F 669 for heavy industrial fence, Group IA pipe or Group II rolled shapes, as follows:
1. End, Corner, and Pull Posts: 2.875-inch O.D. steel pipe, 5.79 pounds per linear foot.
 2. Line Posts: 2.375-inch O.D. steel pipe, 3.65 pounds per linear foot.
 3. Braces: 1.660-inch O.D. steel pipe, 2.27 pounds per linear foot.
 4. Gate Posts for up to 6-Foot Leaf Width Gate: 2.875-inch O.D. steel pipe, 5.79 pounds per linear foot.
 5. Gate Posts for over 6-Foot and to 13-Foot Leaf Width Gate: 4.000-inch O.D. steel pipe, 9.11 pounds per linear foot.
 6. Gate Posts for over 13-Foot and to 18-Foot Leaf Width Gate: 6.625-inch O.D. steel pipe, 18.97 pounds per linear foot.
 7. Gate Posts for over 18-Foot and to 36-Foot Leaf Width Gate: 8.625-inch O.D. steel pipe, 24.70 pounds per linear foot.
 8. Gate Frames: 1.900-inch O.D. steel pipe, 2.72 pounds per linear foot.
 9. Gate Stiffeners: 1.660-inch O.D. steel pipe, 2.27 pounds per linear foot.
- C. Post Brace Assembly: At gate posts, end posts, and at each side of corner and pull posts, place a horizontal compression brace to the next post at midheight of fabric. Truss the two posts together with a diagonal tension rod. Use steel pipe for the horizontal brace and 3/8-inch diameter adjustable diagonal truss rod.
- D. Length of Posts Into Footing: At line posts for fabric height of 72 inches and more, provide 36 inches. At end, corner, and pull posts, provide 6 inches more than at line posts. At gate posts, provide 12 inches more than at line posts. In solid rock, the portion of the depth of footing that is in solid rock may be reduced to one half of the above lengths.

2.03 GALVANIZED HARDWARE

Comply with U.S. Federal Specification RR-F-00191/4C and the following:

- A. Caps: Weathertight caps on all exposed ends of tubular members.
- B. Tension Wires: 7-gage galvanized coil spring steel.
- C. Tension or Stretcher Bars: One piece, 2 inches less than fabric height, 1/4- by 3/4-inch size. One bar for each end and gate post, and two for each corner and pull post.

2.04 BARBED WIRE

- A. Barbed Wire: ASTM A 121, Class 3, two twisted 12-1/2-gage steel wires, 0.80 ounce per square foot zinc coating, 4-point round shape barbs 5 inches apart.
- B. Extension Arms: Post cap and anticlimb 45-degree single extension arm for three barbed wires. Top wire to be 12 inches above fabric. Provide way for top tension wire.

2.05 GALVANIZED GATES

- A. Frame and Stiffeners: Use steel pipe for gate frame and stiffeners. Provide intermediate vertical stiffener for width over 8 feet and intermediate horizontal stiffeners for width over 10 feet. Assemble frame with malleable or pressed steel corner fittings, riveted for rigid connection. Welding will not be permitted. Provide fabric and barbed wire as for fence. Use stretcher bars at vertical edges and optional at top and bottom edges. Diagonal cross bracing of 3/8-inch diameter adjustable truss rods. Form anticlimb extension by extending vertical members 12 inches above fabric. Provide hinged gates to swing through 180 degrees from closed to open.
- B. Gate Hardware:
 - 1. Hinges: Provide pressed or forged steel or malleable iron, nonlift-off type, offset for 180-degree opening, one and one-half pairs for each leaf over 6 feet wide.
 - 2. Latch: Provide forked type or plunger bar type for operation from either side, with padlock eye as integral part.

2.06 CONCRETE

Concrete for post holes and plunger bar block shall be Class C per Standard Specification Section 03000.

PART 3 - EXECUTION

3.01 PREPARATION FOR INSTALLATION

Clear the line of the fence and dispose of resulting material. Grade between post centers and excavate high spots so bottom of fabric will be between 1 and 2 inches above finished grade.

3.02 INSTALLATION

Install in accordance with ASTM F 567, except as modified herein.

3.03 SETTING POSTS

- A. Space line posts uniformly at maximum intervals of 10 feet between end, corner, and gate posts.
- B. Excavate post holes so concrete will be 3 inches below and around metal posts, except that minimum diameter of concrete footing for end, corner, pull, and gate posts is 12 inches or post O.D. plus 6 inches whichever is greater. In solid rock, diameters may be reduced to post O.D. plus 3 inches, and posts emplaced with a grout of one part portland cement to three parts sand.
- C. Set posts plumb to within 1/4-inch of the post vertical centerline, perpendicular to the ground.
- D. Fill post holes with concrete to 2 inches above finish grade and crown to slope away from post.

3.04 INSTALLING FABRIC

- A. Place fabric on security side of fence. Place tension bands on side opposite fabric side and peen bolts ends or score threads.
- B. Tie fabric to line posts and clip tension bar to end, corner, pull and gate posts at 15-inch intervals. Tie fabric to tension wires or weave tension wires through fabric at 24-inch intervals. Gage of tie wire to equal gage of fabric. Tie tension wires to line posts with 6-gage wire. Twist tie wires two full turns and bend back edges to reduce hazard.
- C. Join rolls of fabric by weaving a single strand into ends of the rolls to form a continuous mesh.

3.05 INSTALLING PLUNGER BAR BLOCK

Excavate a 12-inch diameter by 24-inch deep hole for the plunger bar block. Locate hole under the plunger bar with the double gate in the closed position. Place a 24-inch long steel pipe sleeve in the hole and align to receive the plunger bar. Set pipe sleeve 1/2-inch above finish grade and fill hole with concrete. Slope concrete away from pipe sleeve end to finish grade.

END OF SECTION