

CONSTRUCTION STANDARD SPECIFICATION

SECTION 02445

BARBED WIRE FENCES

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BARBED WIRE FENCES

PART 1 - GENERAL

1.01 SUMMARY

This work shall consist of the manufacture and installation of barbed wire fence gates in compliance with the Specifications and the Standard Drawings.

1.02 SUBMITTALS

The Contractor shall submit the number and type of test certificates required to certify that the fencing materials are in conformance with the requirements stated in the Specifications.

PART 2 - PRODUCTS

2.01 CONCRETE

Concrete shall have a minimum 28-day strength of 2500 psi.

2.02 FENCING MATERIALS

Angles, posts, braces and wire shall be steel. Bolts, hardware and other parts shall be steel, malleable iron or ductile iron.

A. Wire:

1. Barbed wire shall conform to the requirements of ASTM A121 with a Class I coating. Barbed wire shall consist of two strands of No. 12-1/2 gauge copper-bearing steel wire with large four point hard temper round barbs spaced approximately 5 inches apart.
2. Tie wires for fastening barbed wire to steel posts shall be No. 12 gauge copper-bearing steel wire. Tie wires shall be heavily galvanized by the hot-dip process.
3. Stays shall be No. 9-1/2 gauge copper-bearing steel wire conforming to the requirements of ASTM A116. Stays shall be 42 inches long.

- B. Angles, Posts and Braces: Angles and braces shall be fabricated from rail, billet or commercial grade steel which conforms to the requirements of ASTM A569. T-beam section posts shall be fabricated from rail, billet or commercial grade steel which conforms to the requirements of ASTM A702. Angles and braces shall be galvanized by the hot-dip process after fabrication. Angles and braces conforming to ASTM A569 shall be triple coated with a minimum of 0.9 ounces per square foot of zinc, 15 micrograms per square inch of chromate and 0.3 mils of polyurethane finish. T-beam section line posts conforming to ASTM A702 shall be painted with three (3) coats of an anti-corrosive aluminum paint or suitable substitute to prevent corrosion.
1. Corner and intermediate brace posts and braces shall be angles of the dimensions and length indicated on the Standard Drawings.
 2. Line posts shall have a minimum weight of 1.33 pounds per foot excluding the anchor plates. Line posts shall be T-beam sections of the length indicated on the Standard Drawings. Line posts shall have corrugations, ribs or notches spaced at approximately one inch on center to hold the fence wire in the spacing designated on the Standard Drawing. Anchor plates shall have a minimum of 18 square inches of area and shall weigh not less than 2/3 pounds each. They shall be welded or riveted to the section so as to prevent displacement when the posts are driven.
- C. Fittings: Fittings, hardware and appurtenances for fences shall be commercial quality steel, malleable iron or wrought iron which shall be galvanized in accordance with ASTM A153.
- D. Gates: Gate frames shall be nominal 1-1/2 inch, 1.900 inch O.D. galvanized high carbon-welded tubing with internal bracing of nominal 1-1/4 inch, 1.660 inch O.D., galvanized high carbon-steel tubing welded at all joints to provide rigid water-tight construction. Gate fabric shall be No. 11 gauge copper bearing open-hearth steel wire, woven in a 2-inch mesh, and heavily galvanized by the hot-dip process after weaving. Gates shall be 4-feet high and shall be furnished with pivot-type hinges and center stop. Gates shall provide clear openings as shown on drawings. Latches are required only if called out for in the contract.
- E. Gate Posts: Gate posts shall be nominal 2-1/2 inch, 2.875 inch O.D. galvanized steel pipe.

PART 3 - EXECUTION

3.01 PREPARATION

The Contractor shall perform all clearing and grubbing necessary to construct the fence in the required alignment and at the required grade prior to fence construction.

3.02 ERECTION

Fence erection, including all connections shall be done in accordance with the Standard Drawings and the Manufacturer's written instructions.

- A. Concrete: Concrete foundations for intermediate brace posts and corner posts shall be circular in horizontal section, not less than the angle dimension plus 9 inches in diameter and 3'-6" deep. Concrete foundations for braces shall be circular in horizontal section, not less than 24 inches in diameter and 12 inches deep. Where the Standard Drawings require that posts and braces be embedded in concrete, the Contractor shall install temporary guys or braces such that posts and braces will be held in the proper position until the concrete has set sufficiently to hold them in the proper position. No materials shall be installed on posts and braces set in concrete and no strain shall be placed on guys or bracing until seven days have elapsed from the time of placing the concrete. The Contractor shall insure that the concrete has sufficiently cured prior to pulling the wire. Excavation for footings and anchors shall be to the dimensions required to place concrete in the dimensions indicated herein.
- B. Posts: All corner posts, line posts and intermediate brace posts shall be set plumb and shall be spaced in the line of the fence not to exceed 16-foot centers. All posts shall be set or driven to a depth not less than 36 inches.
 - 1. Metal line posts may be driven.
 - 2. Corner and intermediate brace posts shall be set in concrete.
 - 3. Intermediate brace posts shall be placed at intervals not less than 100 feet and not more than 600 feet and shall be spaced evenly between corner and gate posts.
- C. Barbed Wire: Fence wire shall be stretched by mechanical stretcher or other devices designed for this use. Stretching by motor vehicle will not be permitted. The length between pull posts shall not exceed 100 feet.
- D. Stays: Stays shall be twisted into place in accordance with the manufacturer's written instructions at the spacing indicated in the Standard Drawings.
- E. Bolts and Hardware: All nuts, bolts and tie wires shall be securely fastened to preclude surreptitious removal and shall be placed to assure visual evidence of tampering.
- F. Painting: Surfaces that have been cut or filed or surfaces where the galvanized coating has been broken or damaged shall be painted with three coats of an anti-corrosive aluminum paint or suitable substitute to prevent corrosion.
- G. Clearance: Provide suitable closures approved by the Engineer at irregularities in grade such as curbs or ditches. Vertical posts shall not exceed 6 inches open space to the adjacent post or solid structure.

END OF SECTION