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APPROVED BY: P. C. Falvey

DATE: 5/26/83

TITLE

SPECIFICATION FOR CHAIN-LINK FENCE

ENGINEERING STANDARDS

F-1 NUMBER

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1. SCOPE

The work covered by this specification consists of furnishing all equipment, materials, and labor, and performing all operations required to furnish and install chain-link fence.

2. REFERENCED SPECIFICATIONS AND STANDARDS

A. American Society for Testing and Materials (ASTM)

ASTM A 90, 69, STANDARD METHODS OF TEST FOR WEIGHT OF COATING ON ZINC-COATED (GALVANIZED) IRON OR STEEL ARTICLES

ASTM A 120, 73, STANDARD SPECIFICATION FOR BLACK AND HOT-DIPPED ZINC-COATED (GALVANIZED) WELDED AND SEAMLESS STEEL PIPE FOR ORDINARY USES

ASTM A 121 77 ZINC COATED (GALVANIZED) STEEL FABRIC WIRE.

ASTM A 123, 73, STANDARD SPECIFICATION FOR ZINC (HOT-GALVANIZED) COATINGS ON PRODUCTS FABRICATED FROM ROLLED, PRESSED AND FORGED STEEL SHAPES, PLATES, BARS, AND STRIP

ASTM A 153, 73, STANDARD SPECIFICATION FOR ZINC COATING (HOT-DIP) ON IRON AND STEEL HARDWARE

ASTM A 392, 74, STANDARD SPECIFICATION FOR ZINC-COATED STEEL CHAIN-LINK FENCE FABRIC

ASTM A 491, 74, STANDARD SPECIFICATION FOR ALUMINUM-COATED STEEL CHAIN LINK FENCE FABRIC

ASTM A 585, 71, STANDARD SPECIFICATION FOR ALUMINUM-COATED STEEL BARBED WIRE

B. Contractor Specification

SPECIFICATION FOR CONCRETE

3. GENERAL

A. Fences and gates shall be installed in locations shown on the drawings. The heights and details of fences and gates shall be as indicated on the drawings.

B. Materials used for fences and gates shall be new.

C. Fence fabric, tension wire, and barbed wire shall have the same protective coating.

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4. MATERIALS

A. Fabric

Fabric shall be woven from 9-gauge steel wire into a two-inch mesh of the widths shown on the drawings, with the selvage having a barbed and knuckled finish. The chain-link fabric shall be galvanized or aluminum coated. Galvanizing shall be 2 oz/sq ft of area in accordance with ASTM A 392, Class 2. Aluminum coating shall be .40 oz/sq ft in accordance with ASTM A 491.

B. Bottom Tension Wire

Tension wire shall be No. 7-gauge coated spring coil wire. Coating shall be the same as fabric coating.

C. Barbed Wire

Barbed wire shall be 2-strand twisted 12 1/2-gauge steel wire with 4-point barbs of 14-gauge steel wire spaced on 5-inch centers and conforming to ASTM A 121, Class 3. Aluminum coated steel wire shall conform to ASTM A 585, Class II.

D. Top Rail and Horizontal Braces

Top rail and horizontal braces shall be 1 5/8" OD Schedule 40 galvanized pipe conforming to ASTM A 120 or an equivalent roll-formed section galvanized in accordance with ASTM A 123. Rails and braces shall have a minimum zinc coating weight of 1.8 oz/sq ft for ASTM A 120 and 2 oz/sq ft for ASTM A 123. Rails shall be connected at 20-foot centers with galvanized couplings to allow movement for expansion and contraction. Couplings shall have the same minimum weight zinc coating as the top rail.

E. Posts

1) Line Posts

Line posts shall be 2 1/2" OD Schedule 40 galvanized pipe conforming to ASTM A 120 or an equivalent H-column or T-section galvanized in accordance with ASTM A 123. Weight of galvanizing shall be a minimum of 1.8 oz/sq ft for ASTM A 120 and for ASTM A 123.

2) Terminal Posts

End, corner, and pull posts shall be 2 7/8" OD Schedule 40 galvanized pipe conforming to ASTM A 120 or an equivalent

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roll-formed section galvanized in accordance with ASTM A 123. Weight of galvanizing shall be a minimum of 1.8 oz/sq ft for ASTM A 120 and 2 oz/sq ft for ASTM A 123.

3) Gate Posts

Gate posts shall be Schedule 40 galvanized pipe conforming to ASTM A 120 or an equivalent roll-formed section galvanized in accordance with ASTM A 123. Weight of galvanizing shall be a minimum of 1.8 oz/sq ft for ASTM A 120 and 2 oz/sq ft for ASTM A 123.

TYPE AND MAXIMUM GATE OPENING IN FEET	PIPE SIZE
6' single or 12' double	2 7/8" OD
12' single or 24' double	4" OD
18' single or 36' double	6 5/8" OD
Over 18' single or 36' double	8 5/8" OD

F. Gates

1) Swing gate frames shall be formed from galvanized steel pipe conforming to ASTM A 120 of the size called for on the drawings. The minimum weight of zinc coating shall be 1.8 oz/sq ft. Gates shall be equipped with hinges with 180° swing, a positive latching device with provision for padlocking, adequate bracing, and shall be covered with the same fabric as the fence. Double gates shall be supplied with a positive center stop. Railroad gates shall be equipped with center plunger rod, catch, and semi-automatic outer catch.

2) Electrically operated gates shall conform to Contractor electrical specifications.

G. Diagonal Bracing

Diagonal bracing shall be 3/8" diameter galvanized steel rod. The weight of galvanizing shall be a minimum of 2 oz/sq ft.

H. Miscellaneous Hardware

Stretcher bands and bars, bolts, and nuts shall be steel galvanized in accordance with ASTM A 153.

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J. Post Tops

- 1) When barbed wire is not required at the top of the fence, posts shall have malleable iron tops with a drive fit.
- 2) When barbed wire is required at the top of the fence, posts shall have extension arms made of pressed steel capable of withstanding a downward pull of 250 lbs. without permanent deformation.
- 3) Post extension arms shall be galvanized in accordance with ASTM A 153. The weight of coating shall be 2.0 oz/sq ft.

K. Tie Wire

- 1) Chain-link fence fabric shall be fastened to the top rail and posts with 9-gauge aluminum wire. Fastenings on top rails shall not exceed 24 inches on center, and fastenings on posts shall not exceed 14 inches on center.
- 2) Tension wire shall be fastened to the chain-link fabric with 11-gauge hog rings on 24-inch centers.

L. Concrete

Concrete for setting fence posts shall be

5. INSTALLATION

A. General

- 1) The chain-link fence shall be erected in accordance with the lines, grades, and details shown on the drawings.
- 2) The fence shall be true to line, taut, and shall comply with the best practice for fence construction of this type.

B. Clearing Fence Lines

- 1) Before installation of fencing, the fence line shall be cleared of trees, stumps, brush, rocks, etc., for a width of 2 feet on each side of the fence centerline.
- 2) The fence line shall be graded so that the fence will conform to the general contour of the ground or the finished plan grade whichever is specified.

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C. Posts

- 1) Posts shall be installed at the locations indicated on the drawings. Posts shall be set in concrete as indicated on the drawings and shall be vertical, in true alignment, and rigidly secured in position.
- 2) Gate posts shall be set the exact distance apart as shown on the drawings. A line from the top of one gate post to the other must be level. If the ground is not level, the upgrade post shall be set first to get the proper height for the downgrade post.

D. Fabric

After posts have been permanently positioned and anchorages firmly set, the fabric shall be placed by securing one end and applying sufficient tension to remove slack. Fabric shall be placed a normal distance of 2 inches above grade and fastened as specified.

E. Gates

The gates shall be hung on gate fittings as required. Double gates shall be provided with stops and shall be erected to swing in the direction as indicated on the drawings. Hardware shall be thoroughly secured, properly adjusted, and in good working order. Hinges and diagonal bracing shall be adjusted so that gates hang and swing level.

6. ELECTRICAL GROUNDING

Fence and gate grounding shall conform to Contractor electrical grounding specifications.

7. TESTING

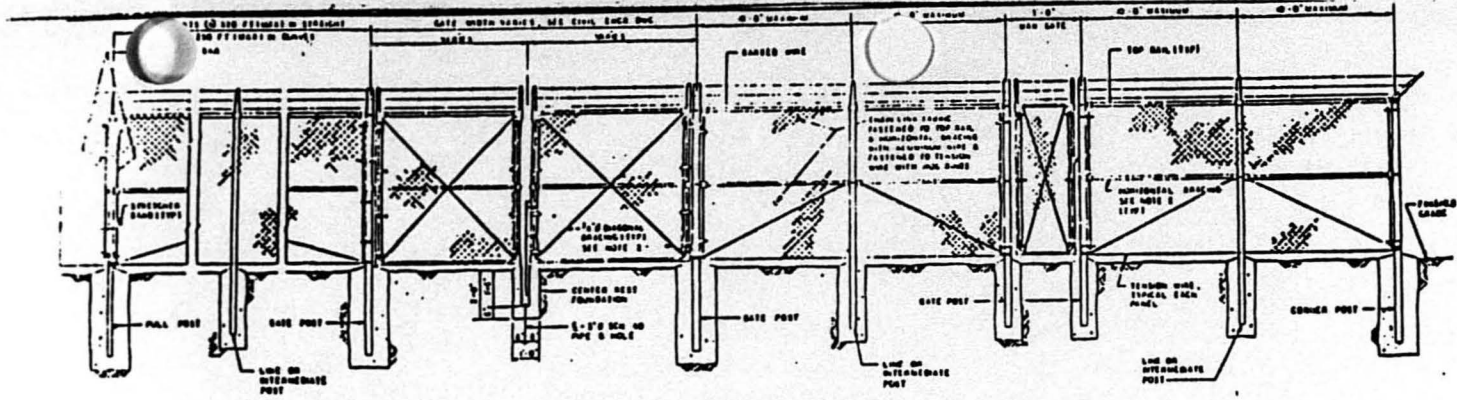
Supplier of fence material shall upon request furnish samples of materials to be used for testing. Materials failing to meet the requirements of this specification shall be replaced.

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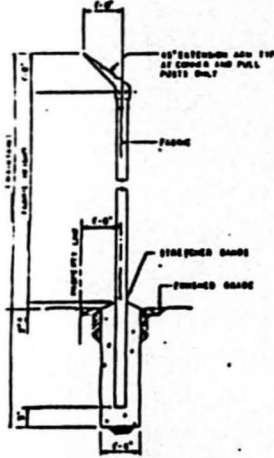
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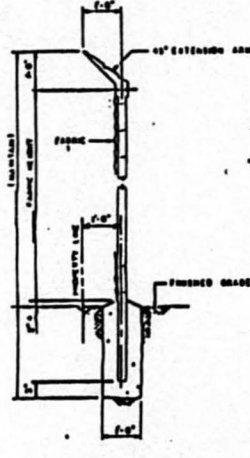
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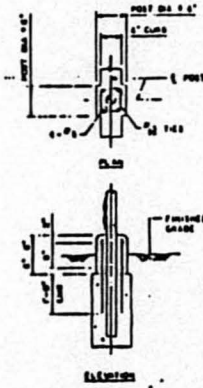
FENCE ELEVATION



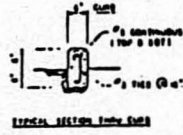
TYPICAL CORNER GATE OR PULL POST SECTION



TYPICAL LINE OR INTERMEDIATE POST SECTION



FENCE WITH CURB



TYPICAL SECTION END VIEW

NOTES:

- 1. FENCE CONSTRUCTION SHALL BE IN ACCORDANCE WITH SPECIFICATION
- 2. DIAGONAL & HORIZONTAL BRACING SHALL BE LOCATED AT CORNER PANELS, GATES, & PULL POSTS

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