

SPECIFICATIONS - DETAILED PROVISIONS
Section 02444 - Chain Link Fencing

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**SECTION 02444
CHAIN LINK FENCING**

PART 1 - GENERAL

1.01 DESCRIPTION

- A. Requirement. Under these specifications, the Contractor shall furnish all materials, labor, tools, and equipment required to completely construct the fencing, posts, gates, and miscellaneous material, including removal of trees, brush and other obstacles, as shown on the contract drawings and as specified in these specifications.
- B. Rights-of-Way. All rights-of-way necessary for the construction of facilities under this specification will be provided for the Contractor. Neither the terms hereof nor anything shown on the drawings in connection with the right-of-way provided by the District, shall be construed to entitle the Contractor to conduct operations in said right-of-way in violation of any public agency ordinance or regulation restricting interference with water courses and drainage channels, road, alley, or street until he has obtained permits therefore from the proper authorities.

Nothing herein shall be construed to entitle the Contractor to the exclusive use of any public street or way during performance of the contract work, and he shall so conduct his operations as not to interfere unnecessarily with the authorized work of other agencies in such streets and ways.

- C. Power. The Contractor shall provide at his own expense all necessary power required for his operations under the contract. The Contractor shall provide and maintain in good order such modern power equipment and installation as shall be adequate in the opinion of the Engineer to perform in a safe and satisfactory manner the work required by the contract.

1.02 QUALITY ASSURANCE

Contractor shall be responsible for the quality of all work of his forces and that of his subcontractors, for adherence to all laws and regulations, and for all public relations regarding the contract work, as set forth elsewhere in the contract documents.

1.03 SUBMITTALS

Submittals are required only if the Contractor is proposing deviations from the requirements of the contract documents.

1.04 JOB CONDITIONS

Water Furnished by District. The District will make water available for construction at the locations stated in the Special Provisions.

1.05 PAYMENT

A. Measurement for Payment. Quantities of fencing shall be measured for payment as specified herein:

1. Fencing. Will be measured in place along the line of the fence by the linear foot. The measurement will include all chain link fabric, barbed wire, line posts, corner posts, braces, rails, post caps, truss rods, tension wire, hardware, earthwork, concrete, and miscellaneous material necessary for the complete installation of the fence. The measurement for payment will not include the width of walk or drive gates.
2. Gates. Will be measured on the basis of each walk or drive gate completely installed, including gate frames, hardware, chain link fabric, barbed wire, gate posts, braces, rails, latches, hasps, truss rods, tension wire, earthwork, concrete, and miscellaneous materials necessary for the complete installation of the gate.

B. Payment. Payment for quantities of fencing shall be made in the following manner:

1. Fencing. Quantities of fencing measured as stated above and accepted, will be paid for at the respective unit bid prices per linear foot for the sizes of fencing stated in the bidding sheet, which prices and payments shall constitute full compensation for furnishing all materials, labor, tools, and equipment necessary to complete the work as described in these specifications.
2. Gates. Quantities of walk and drive gates measured as stated above and accepted, will be paid for at the respective unit bid prices for the types and sizes of gates stated in the bidding sheet, which prices and payments shall constitute full compensation for furnishing all materials, labor, tools, and equipment necessary to complete the work as described in these specifications.

1.06 GUARANTEE

The Contractor hereby guarantees that the entire work constructed by him under the contract will fully meet all requirements thereof as to quality of workmanship, and of materials furnished by him. The Contractor hereby agrees to make at his own expense any repairs or replacements made necessary by defective materials or workmanship supplied by him which have become evident within one (1) year after date of Notice of Acceptance of the work is filed,

and to restore to full compliance with the requirements of these specifications any part of the fencing, posts, gates or miscellaneous materials which during said one-year period is found to be deficient with respect to any provision of this specification. The Contractor shall make all repairs and replacements promptly upon receipt of written orders for same from the Engineer. If the Contractor fails to make the repairs and replacements promptly, the District may do the work, and the Contractor and his Surety shall be liable to the District for the cost thereof.

PART 2 - PRODUCTS AND MATERIALS

2.01 POSTS AND BRACES

Posts, braces and rails shall be new galvanized pipe manufactured in accordance with ASTM A-120 and shall be of the following sizes and weights:

<u>Post Location</u>	<u>Nom. Dia. of Post</u>	<u>Approx. OD</u>	<u>Pipe Weight</u>
End, corner, and walk gate posts	2-1/2"	2-7/8"	Standard
Line posts	1-1/2"	1-7/8"	Standard
Braces, rails, and gate frames	1-1/4"	1-5/8"	Standard

Braces shall be fitted with clamps on each end, one clamp to fit gate posts and the other clamp to fit standard line posts.

Gate posts, not including walk gates, shall be of the following sizes and weights:

<u>Gate Single</u>	<u>Width Double</u>	<u>Nom. Dia. of Post</u>	<u>Approx. O.D.</u>	<u>Pipe Weight</u>
6'	12'	2-1/2"	2-7/8"	Standard
7'-13'	13'-26'	3-1/2"	4"	Standard

Changes in alignment of more than 30° shall be considered as corners, and cornerposts and braces shall be installed.

2.02 CHAIN LINK FABRIC

The chain link fabric shall be No. 11 AWG gauge galvanized steel wire woven in a 2" mesh, manufactured in accordance with the requirements of ASTM A-392. The fabric shall have a zinc coating, Class "1", by hot-dip galvanizing after weaving. The fabric shall have a barbed finish at the top.

2.03 TENSION WIRE

All tension wire shall be No. 7 AWG gauge galvanized, hard drawn, steel spring wire.

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2.04 TIE WIRE

All tie wire shall be No. 9 AWG gauge galvanized steel wire manufactured in accordance with the requirements of ASTM A-112.

2.05 BARBED WIRE

All barbed wire shall be made of two strands of No. 12-1/2 AWG gauge galvanized steel wire twisted with two point No. 14 AWG gauge barbs spaced at not more than 5", and manufactured in accordance with the requirements of ASTM A-121, Class "1".

2.06 TRUSS RODS

All truss rods shall be made from 3/8" diameter galvanized steel rod, with drop forged turnbuckles, and galvanized in accordance with ASTM A-153.

2.07 HARDWARE

All hardware, hinges, clamps, fasteners, bolts, nuts, turnbuckles, fittings, post caps, stretcher bars, and other ferrous material not previously covered in these specifications, shall be manufactured of steel, malleable iron or wrought iron, and shall be galvanized in accordance with the requirements of ASTM A-153. All of the above hardware and fittings shall be manufactured so as to fit neatly and assemble in accordance with the contract drawings and these specifications.

2.08 GALVANIZING

All ferrous materials shall have a heavy zinc coating by hot-dip galvanizing, after fabrication or weaving, applied in accordance with the requirements of the ASTM specifications designated above.

2.09 CLASS "B" CONCRETE

Concrete footings shall be of Class "B" concrete, in accordance with Section 03300 of the District's standard specifications.

2.10 GATES

Walk gates shall be 3' wide. Drive gates shall be of the width as shown on the contract drawings. Gate frames shall be cross trussed with 3/8" truss steel rods equipped with drop forged turnbuckles. The corners of gate frames shall be fastened together and reinforced with a malleable iron fitting designed for the purpose or welded securely. Surplus welding material shall be removed prior to galvanizing. Chain link wire fabric shall be of the same type as specified for the fence and shall be fastened to the frame by the use of stretcher bars, clamps, and tie wire as specified for the fence, and suitable tension connectors spaced at approximately 1' intervals. Gates shall be hung by hinges not less than 3" in width so designed as to securely clamp to the gate post and permit the gate to swing back against the

fence. Hinges shall be of high malleable iron of the ball and socket type which will permit the gate to swing back against the fence. The lower hinges of the gate shall support the entire vertical load of the gates as well as provide for the resultant horizontal reaction. Each gate shall be outfitted with approved latches and provisions for padlocking. Latches, hasps and bolts shall be accessible from either side of the gate. All gates shall have extension arms extended outward with 3-strand barbed wire, positioned in a matter that the gates may be fully opened.

PART 3 - EXECUTION

3.01 POSTS

Posts shall be spaced not more than 10' center to center of posts. Posts shall be set in a vertical position and shall be carefully aligned. Posts shall be set in a Class "B" concrete footing in accordance with the contract drawings and these specifications. Tops of the concrete foundations shall be troweled smooth sloping outward from the post. End, corner, and gate posts shall be braced to the nearest line post. Line posts, at intervals not greater than 1000' and at locations shown on the plans, shall be braced both ways. All posts shall have extension arms positioned at 45°, extended outward, with 3-strand barbed wire.

3.02 CHAIN LINK FABRIC

Chain link fabric shall be fastened on the side of the posts as shown on the contract drawings. Fabric shall be stretched taut and securely fastened to the posts, the top rails and/or tension wires. The fabric shall be fastened to end, corner, and gate posts with 3/16" by 5/8" steel stretcher bars and not less than 1/8" by 1" steel stretcher bar bands spaced 1' apart and fastened to line posts, rails, and tension wires with tie wires or metal bands spaced approximately at 14" on line posts and 18" on rails and tension wires. Bottom tension wires and fabric shall be stretched straight from post to post excavating at high places. Filling of low places will not be permitted.

END OF SECTION 02444

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