

BID #7329: SPECIFICATION #1

CITY OF ANAHEIM USC WAREHOUSE YARD FENCE SPECIFICATIONS

Part 1: General Specifications for All Fencing Types

1. The contractor (bidder) shall always be responsible for the location and avoidance of underground utilities. Damages shall be promptly repaired by the contractor at no expense to the owner.
2. The contractor shall employ adequate numbers of skilled workers who are trained and experienced with the type of project for which they are assigned.
3. All completed work shall meet basic visual standards. Post shall be properly aligned, post shall be plumb and vertical, materials shall be consistent in quality, materials shall be undamaged, gates shall not sag and other specifications as may be the owner shall be met.
4. All completed work shall meet basic structural standards. Post shall not wobble or move within footings, fabric and wire shall be taut between posts, hardware shall be adequately tightened and all materials shall meet the minimum specifications on the following sections.
5. Contractor to remove and properly dispose of all existing fence materials.
6. The contractor shall remove all debris and unused material from the job site at the completions of each project. Soil excavated for footing must be removed or spread evenly as may be directed by the owner. The contractor shall provide the owner with a detailed proposal that outlines materials, cost and installation schedule for each project. This proposal must be approved by the owner prior to the commencement of work.

Part 2: Specifications For Galvanized Chain Link Fencing

1. Contractor's bid price shall include all materials, labor, permits, and equipment necessary to remove and replace fence at three locations of the City of Anaheim Utilities Warehouse, 901 E. Vermont Street, Anaheim, CA 902805 as described below.
2. Fence shall be six feet tall, or eight feet tall, depending on location, from ground to the top rail with forty-five degree arms supporting three strands of barbed wire above the fabric on one side of the fence for the eight foot tall fence only.
3. Tension wire shall be installed at the bottom of the fence.
4. All fence to be 2-inch mesh. Wire shall have a breakload strength of 1,290 lb. minimum.

BID #7329: SPECIFICATION #1

5. Fence Locations at City of Anaheim USC Warehouse Yard, 901 E. Vermont:

Location One: West yard - railroad tracks, approximately 300 feet of the 8 gauge, 8 feet tall with barbed wire.

Location Two: Center of USC yard-Heliport, approximately 250 feet of 9 gauge at six (6) feet tall, no barbed wire.

Location Three: Dixco, East side of yard, approximately 200 feet of 9 gauge six (6) feet tall with barbed wire.

Part 3 - Products

All items shall meet or exceed the following standards:

A. Fence Fabric

Fabric shall be a minimum of 8 gauge or a maximum of 9 gauge, with and without barbed wire, depending on location. All fabric shall be hot-dipped galvanized with a minimum 1.8- oz./sq. ft. of coated surface area. Mesh shall be galvanized after weaving. Selvage of fabric shall be knuckled at the bottom.

B. Corner and Terminal Posts

Post shall be constructed of schedule 40 steel pipe. They shall be hot-dipped galvanized with a minimum of 1.8-oz/sq. ft. of coated surface area. Posts shall have an outside diameter of 2 3/8 inches (2.275"), a minimum wall thickness of .130 inches and a minimum weight per ft. of 3.117 lb.

C. Line Posts

All existing posts to be replaced with new and shall be constructed of schedule 40 steel pipe. They shall be hot-dipped galvanized with a minimum of 1.8 oz./sq. ft. of coated surface area. They shall have an outside diameter of 1 7/8 inches (1.875"), a minimum wall thickness of .120 inches and a minimum per ft. of 2.281 lb.

D. Top Rails and Braces

Top rails and braces shall be constructed of schedule 40 steel pipe. They shall be hot-dipped galvanized with a minimum of 1.8-oz./sq. ft. of surface area. They shall have an outside diameter of 1 5/8 inches (1.625"), a minimum wall thickness of 0.111 inches and a minimum weight per ft. of 1.83 lb.

E. Caps, Hardware and Misc.

Post caps shall be of formed steel, cast malleable iron or aluminum alloy. Install one cap for each post where barbed wire supporting arms are not required. Top rail and brace ends shall be of formed steel, malleable iron or cast iron for the connection of rails and braces to terminal posts. Top rail sleeves shall be 6 inches and shall allow for expansion and contraction of top rails. Use 9 gauge galvanized steel wire for the attachment of fabric to line posts. Double wrap 13 gauge for rails and braces. Hog ring ties of 12 1/2 gage for attachment of fabric to tension wire. Tension bars shall be in piece lengths equal to 2 inches less than full height of fabric with a minimum cross-section of 3/16 inches x 3/4 inches. Install tension bars where chain link fabric meets terminal posts.

BID #7329: SPECIFICATION #1

7 gauge zinc coated tension wire with a tensile strength of 75,000 PSI shall be installed at the bottom of the fence fabric.

F. Barbed wire and supporting arms

Barbed wire shall be double-strand 12-1/2 gauge galvanized twisted steel line wire. 4-point galvanized steel barbs shall be placed approximately 5 inches on center. Support arms shall be galvanized pressed steel with provisions for supporting three strands of barbed wire. Arms shall with stand 250 lb. downward pull at outermost end without failure.

G. Concrete

Concrete for setting posts shall have a minimum 28 day compressive strength of 3,000 PSI.

Part 4 - Execution

A. Fence Framing

Install in accordance with ASTM F 567 and manufacturer's instructions. Locate terminal post at each fence termination. Space line posts at 10 feet on center. Concrete set all posts in holes bored with a diameter at least 4 times greater than the outside dimension of the post. Holes shall be 30 inches deep. Set post bottoms 24 inches below grade. Place concrete in a continuous pour, trowel finish the surface and slope to direct water away from posts. Install diagonal truss rods at these points, install braces and adjust truss rod. Install horizontal pipe brace at mid-height on each side of terminal posts. Install bottom tension wire before stretching fabric and attach to each post with ties or clips. Install the top in lengths of 21 feet. Connect top rail joints with sleeves for rigid connections with expansion/contraction. Install fabric on security side, and attach so that fabric remains in tension after pulling force is released. Leave approximately 2 inches between finished grade and bottom selvage. Attach fabric with wire ties or clips, to line posts at 15 inches on center, and to rails, braces, and tension wire a 24 inches on center. To install tension bars; pull fabric taut, thread bar through fabric and attach to terminal posts with bands or clips spaced a maximum of 15 inches on center.

B. Accessories

Bend ends of tie wires to minimize hazard to persons and clothing. Install nuts on fasteners opposite the fabric side of the fence for added security. Install extension arms on posts and align perpendicular to the fence. Uniformly space parallel rows of barbed wire on the security side of the fence. Pull wire taut and attach in clips or slots of each extension.