

SECTION 27 ORNAMENTAL IRON FENCES

27-01 GENERAL

The work shall consist of, but not necessarily limited to, the construction of ornamental iron fences at the location(s) shown on the plans. Unless indicated otherwise, fence shall be constructed in accordance with manufacturer's recommendations.

27-02 MATERIALS

27-02.01 Fence

The welded steel ornamental iron picket fencing system shall be Secure-Weld Plus, Western as manufactured by Merchants Metals or approved equal. The color of the fence system shall be Black.

27-02.02 Posts, Rails, and Pickets

All posts, rails, and pickets used in the fence system shall be extruded from ASTM A500 Cold-Formed Welded and Seamless Carbon Steel Structural Tubing with minimum yield strength of 46,000 psi. Specifications and sizes shall be as shown:

<u>Component</u>	<u>Size</u>
Pickets	3/4" square x 16 gauge
Rails	1 1/2" square x 14 gauge
Standard Posts	2 1/2" square x 11 gauge
Spacing Between Pickets	3 11/16"
Post Spacing	94 5/8" on center
Height	48"
Weight Supported per Section of Fence	350+ lbs.

Panels, pickets, and flanged posts (if required) shall be of welded construction by the gas metal arc method. Pickets shall be attached to rail in the same manner. No rivets, rods or screws will be acceptable for assembly of panels. Layout and welding shall be done by an experienced craftsman. All flush welds shall be ground smooth.

27-02.03 Fasteners and Accessories

All fasteners shall be galvanized steel. Galvanized steel castings shall be used for all post caps and other miscellaneous hardware. Brackets shall be L-shaped, slide-on type brackets. Brackets shall be attached to the posts with 1/4" x 3/4" (1/4" x 1" may be substituted) self-tapping tek-screws.

27-02.04 Footings

Portland cement concrete for ornamental iron post footings shall be produced from commercial quality aggregates and cement and shall provide a minimum compressive strength at 28 days of 3,000 psi.

27-02.05 Finish

Finish shall be an eight stage pre-treatment and a four-stage corrosion resistant powder coating process. The finish shall conform to local environmental air quality standards. Color shall be Black, unless otherwise specified.

Finish shall be applied after fabrication. All welds are to receive treatment with a zinc rich-epoxy resin primer applied at a thickness of 2 to 4 mils and over cured at 400° F. The finish coat shall be 2 to 4 mils dry film thickness and shall be a TGIC polyester powder coating that combines hardness and durability.

The 12-step process shall consist of (1) Hot alkaline cleaner, (2) Clear water rinse, (3) Hot iron phosphate application, (4) Clear water rinse, (5) Sealer application, (6) Ring rinse, (7) Deionized water rinse, (8) Drying at 425° F, (9) Zinc enriched epoxy primer powder coat at 2-4 mils, (10) Gel oven heat at 400° F, (11) Ultra polyester finish powder coat at 2-4 mils, (12) Final oven curing at 450° F.

27-03 CONSTRUCTION

Fencing indicated on the plans to be removed, shall be properly disposed off site by the Contractor at Contractor's expense. Any existing fence indicated to remain and which have been damaged by the Contractor shall be replaced by him at his expense.

All earth, trees, brush and other obstructions which interfere with the proper construction of fences shall be removed and properly disposed of off site by the Contractor.

Existing cross fences shall be connected to the new fence where indicated on the plans. Corner posts with braces for every direction of strain shall be placed at the junction with existing fences. Unless indicated otherwise, at structures an end post shall be installed and the fence connected thereto.

Install fence per manufacturer's recommendations. Fence post spacing shall be in accordance with the drawings. Footings and post cap sizes shall be as indicated on the drawings.

Space posts uniformly in accordance with panel width, unless instructed otherwise.

Set posts in concrete. Post holes shall have a diameter 4 times the nominal post size and 6" deeper than the bottom of the post. Forms are not necessary or recommended. Crown concrete at top to shed water.

Check each post for vertical and top alignment.

Attach brackets using ¼" x ¾" tek-screws; ¼" x 1" tek-screws may be used as an alternate. Attach fence panels.

Any abrasions or field welds that cause damage to the factory-applied coatings shall be thoroughly cleaned, re-primed, and touched up by the Contractor. The paint used for

touch up shall be the same quality, color and gloss to provide a match to the manufacturer's finish.

Assembled sections shall support a 350 pound vertical load at the midpoint of any horizontal rail.

The entire fence system shall have a written 10 Year Warranty against rust and defects in workmanship and materials.

Line posts shall be spaced at not more than 8-foot intervals, measured from center to center of posts. In general in determining the post spacing, measurement will be made parallel to the slope of the natural ground, and all posts shall be placed in a vertical position.

All posts shall be set in concrete footings conforming to the details contained in the Caltrans Standard Plans.