

SECTION 323119**ORNAMENTAL METAL FENCING AND GATES****PART 1 - GENERAL****1.01 DESCRIPTION OF WORK**

- A. The contractor shall provide all labor, materials and appurtenances necessary for installation of the ornamental metal fencing system as shown on the contract drawings.

1.02 RELATED SECTIONS AND WORK

The Contract Drawings, other sections of these Specifications, and the Contract general provisions, including General and Special Conditions and related Contract documents, apply to this Section.

- A. Section 312300 - Earthwork
- B. Section 033000 – Cast-In-Place Concrete
- C. Section 329000 – Landscape Planting

1.03 REFERENCES

References and industry standards listed in this Section are applicable to the Work. Unless more restrictive criteria or differing requirements are explicitly stated in the Specifications, or mandated by governing codes or regulations, the recommendations, suggestions, and requirements described in the referenced standards shall be deemed mandatory and applicable to the Work.

- A. American Society for Testing and Materials (ASTM): A526/A 526-M- Steel Sheet, Zinc Coated (Galvanized by the hot dip process).
- B. ASTM: B117 Test Method - Salt Spray (Fog) Testing.

1.04 SUBMITTALS

The Contractor shall submit the following items to the Owner and Consultant:

- A. Product data in the form of manufacturer's technical data, specifications, and installation instructions for fence and gate posts, fabric, gates and accessories.
- B. Shop Drawings:
 - 1. Show all layout, locations, post spacing, markings, quantities, materials, sizes, footings, and shapes.
 - 2. Indicate all methods of connecting, anchoring, fastening, bracing and attaching Work of other trades.
 - 3. Do not fabricate before approval of Shop Drawings.

1.05 QUALITY ASSURANCE

A. SINGLE SOURCE RESPONSIBILITY

The Contractor shall obtain ornamental metal fencing and gates as complete units, including necessary erection accessories, fittings and fastenings from a single source or manufacturer.

B. All fabricated items

Minimum of three - (3) years successful experience by the respective fabricator in the fabrication of items of type specified.

C. The contractor shall provide laborers and supervisors who are thoroughly familiar with the type of construction involved and materials and techniques specified.

1.06 PRODUCT HANDLING AND STORAGE

A. Metal fence sections shall come pre-welded with a factory applied paint coating, and shall be protected from scratching or nicking.

B. Upon receipt at the job site, all materials shall be checked to ensure that no damages occurred during shipping or handling. Materials shall be stored in such a manner to ensure proper ventilation and drainage, and to protect against damage, weather, vandalism and theft.

C. Replace damaged items with the approval of the project Landscape Architect or Owner.

PART 2 - PRODUCTS

2.01 MANUFACTURER

A. The ornamental fencing system shall match the existing installed fence and conform to Monumental Iron Works Ornamental Picket Fencing manufactured by Master Halco

2.02 MATERIALS

A. Material for Pickets shall be galvanized square steel tubular members manufactured per ASTM A-924/A-924M, having a 45,000 p (310 MPa) yield strength and hot-dip galvanized per ASTM A653/A653M with a G90 zinc coating, 0.90 oz/ft' (0.27kg/M' Picket Size 3/4" (19 mm). Pickets are spaced 3-15/16" maximum (100 mm) face to face. Pickets are attached to rails at the factory using industrial drive rivets.

B. Material for Rails shall be 1-1/2" (38mm) x 1-3/8" (35mm) x 1-1/2" (38mm), 11 gauge [0.120" (3.05mm)] thick galvanized steel "U" channel per ASTM A-653/A-653M, having a 50,000 psi (344 MPa) yield strength and G90 zinc coating, 0.90 oz/ft² (0.27 kg/M').

C. Material for Posts shall be galvanized square steel tubular members manufactured per ASTM A-653/A-653M having a 45,000 psi (310 MPa) yield strength and G90 zinc coating, 0.90 oz/ft². Posts are coated with zinc on the inside and outside.

D. Rail Brackets shall be Pro-Arc" Rail Brackets .

- E. Finish for all pickets, rails, posts, fittings and accessories are polyester powder coated individually after drilling and layout, to ensure maximum corrosion protection. (Coating of assembled sections is unacceptable). All ferrous components are given a 4-stage "Power Wash" pre-treatment process that cleans and prepares the galvanized surface to assure complete adhesion of the finish coat. All metal is a polyester resin based powder coating applied by the electrostatic spray process, minimum 2.5 mils. The finish is then cured in a 450°F (232°C) (metal temperature) oven for 20 minutes. Standard Color- Black.

PART 3 - EXECUTION

3.01 PREPARATION

- A. All new installation shall be laid out by the contractor in accordance with the contract drawings and shop drawings.
- B. Contractor to coordinate installation of fence with landscape installation and all other trades involved with site work. **All Fencing to be installed prior to any planting, seeding, or mulching on site.**
- C. Contractor is responsible to coordinate all fence post footings with existing and proposed utilities.
- D. Make all required measurements in the field to ensure proper and adequate fit. If any discrepancies exist contractor to contact landscape architect and owner. Do not proceed until fully corrected.

3.02 CONCRETE MIXING

Mix materials to obtain concrete with a minimum 28-day strength of 4,500 psi; 1" maximum size aggregate, maximum 3" slump, and 2-4% entrained air.

3.03 INSTALLATION

- A. Comply with recommended procedures and instructions of fencing manufacturer. Provide secure, aligned installation with line posts spaced at 8'-0" o.c. plus or minus ½".
- B. Grade Set Posts: Drill or hand excavate using post hole digger in firm or compacted soil.
- C. Excavate hole for each post to minimum diameter recommended by fence manufacturer but not less than four times largest cross-section of post. Excavate hole depths approximately 3" lower than post bottom with bottom of posts set not less than 36" below finish grade surface.
- D. Center and align posts in holes 3" above bottom of excavation.
- E. Place concrete around posts; vibrate or tamp for consolidation. Check each post for vertical and top alignment. Hold in position during placement and finishing operations. Extend concrete footing 2" above grade. Crown footing to shed water.
- F. Gates: Install gates plumb, level, and secure for full opening without interference. Install ground-set items in concrete for anchorage. Adjust hardware for smooth operation and lubricate where necessary.

3.04 PRESERVATION OF EXISTING ORNAMENTAL FENCES TO REMAIN

- A. The existing steel picket fences shall generally be preserved and protected from damage at all times. Where necessary for construction purposes, fence panels shall be temporarily removed. Where damaged by Contractor, replace fence and gates with new.
- B. Where disturbance to or regrading occurs at existing fence post footings, the Contractor shall remove, excavate and pour new sleeved footings to the final design grade.
- C. Where new sleeved footings are poured in regraded areas, the picket fence top-line shall have a profile to match the grade. Where stepping of fence top-line is shown to be necessary, Contractor shall submit a step-footing detail, showing a step not to exceed 6 inches in grade and continuous reinforcement. Existing fence panels may be re-used; however to the extent needed, the Contractor shall measure for and fabricate new picket fence panels as part of fence reconstruction.
- D. Where damaged, the Contractor shall replace the existing fence and gates with new.

3.05 CLEANUP

Upon the completion of the installation, all debris created by the installation shall be removed from the premises and all fencing shall be left clean. All excess materials shall be cleaned from jobsite.

END OF SECTION