

## ITEM 04607.9130 M - AESTHETIC PEDESTRIAN FENCE

### DESCRIPTION:

The work shall consist of furnishing and installing Aesthetic Pedestrian Fencing, including all hardware and construction systems necessary to complete the work. Aesthetic Pedestrian Fencing is a panelized, prefabricated fencing system that shall be installed according to the details and at the locations as indicated on the Contract Plans.

As soon as the Contract is awarded, the Contractor shall notify the Engineer of the name and address of the Fabricator(s) of all Aesthetic Pedestrian Fencing. This notification shall list the specific shop or shops in which the Aesthetic Pedestrian Fencing will be fabricated.

### MATERIALS:

**A. Concrete Foundations.** Concrete for foundations shall conform to the provisions of Section 555 – Structural Concrete. Use Item 555.0104 M – Footing Concrete, Class A.

**B. Drilling and Grouting Anchor Bolts.** Grout material shall conform to Subsection 701-07 of the Standard Specifications; Anchoring Materials – Chemically Curing.

**C. Structural Steel.** Materials used for this work shall conform to the following requirements:

<u>PART</u>	<u>REQUIREMENTS</u>
Angles and Plates	ASTM A36M
Posts and Rails	ASTM A500 Grade A or B
Post and Rail End Caps	ASTM A36M
Lock Crimp Wire Mesh	ASTM A510
Step & Carriage Bolts, Washers and Nuts	ASTM A307 Grade 2, Zinc Coated
Anchor Bolts	ASTM A307 or A449

All uncoated steel shall be galvanized unless otherwise indicated on the Contract Plans or in the Proposal. Unless otherwise specified, galvanizing shall be in accordance with the requirements of Subsection 719-01, type as applicable. The type and size of the fence panels, posts, lock-crimp wire mesh, rails and fittings will be designated on the Contract Plans or in the Proposal.

**D. Exterior Finish.** The posts, completed fence panels, hand and rub rails shall receive an electrostatically applied exterior powder finish (color as shown in the Plans) as described by the Powder Coating Institute, 2121 Eisenhower Avenue, Suite 401, Alexandria, VA 22314. Telephone: (703) 684-1770, fax: (703) 684-1771. Acceptable exterior finishes are:

1. Polyurethane Polyester Powder.
2. Triglycidyl Isocyanurate (TGIC) Polyester Powder.

The Contractor has the option to apply the powder coat finish to the bottom surface of post base plates. Hand and rub rail splice bars shall not be powder coated.

### CONSTRUCTION DETAILS:

**A. Fabrication.** The Aesthetic Pedestrian Fencing shall be fabricated to the dimensions shown in the Contract Plans and in compliance with the Specifications.

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1. **Shop Drawings.** Shop Drawings shall be provided in accordance with the requirements of the New York State Steel Construction Manual (S.C.M.), except that 1) the drawings shall be submitted to the Engineer for review and approval and 2) the computed weights need not be shown.
  2. **Welding.** Shop welding shall be performed only where specifically noted on the Contract Plans. All welding shall be in accordance with the requirements of the S.C.M. Field welding will not be permitted, unless ordered by the Engineer.
  3. **Cutting.** All exposed flame cut surfaces shall have a surface roughness not to exceed 250, as defined by the ANSI Standard Specification B46.1. Grind all edges of post plates, post base plates and connection plates so that sharp edges are removed. Sheared edges on angles and plates shall also be ground to remove any sharp edges. Structural tubing shapes shall be sawcut.
  4. **Rails and Fence Panels.** Rails and fence panels for curved structures shall be curved in the shop prior to galvanizing. Heat curving shall not be allowed to facilitate bending. Fence posts, fence panel and clamp frames shall be fabricated as detailed in the Contract Plans. Lock-crimp wire mesh shall be stretched taut and welded to the fence panel frames as detailed in the Contract Plans.
  5. **Quality.** Fabrication of all parts shall be done in a skilled manner and shall produce a uniform product to the satisfaction of the Engineer.
  6. **Galvanizing.** Galvanizing shall conform to the requirements of Subsection 719-01, Galvanized Coatings and Repair Methods, Type I. All components of the Aesthetic Pedestrian Fencing, including anchor bolts, and except where noted on the Plans, shall be galvanized. The Aesthetic Pedestrian Fencing, including splices and all hardware shall be fabricated and ready for assembly prior to galvanizing.
  7. **Finish Coating.** The posts, completed fence panels, hand and rub rails and other surfaces noted in the Plans, shall receive an electrostatically applied exterior powder finish (color as shown in the Plans) with either Polyurethane or Triglycidyl Isocyanurate (TGIC) polyester powder to a minimum dry thickness of 2.0 mils for Polyurethane and 3.0 mils for TGIC. The application of the exterior powder coat finish shall be accordance with the recommendations and procedures required by the Powder Coating Institute.
  8. **Concrete Foundations.** Foundations shall be constructed in accordance with the pertinent provisions of section 555-3, as shown in the plans or as directed by the Engineer.
- B. Inspection of Aesthetic Pedestrian Fencing and Railing.** Immediately prior to erection, the Aesthetic Pedestrian Fencing and railing shall be inspected for damage. Bends or kinks in the Aesthetic Pedestrian Fencing and railing not specifically called for on the Plans shall constitute sufficient cause for rejection. Straightening of such bends or kinks shall not be allowed.

Chips, gouges and deep scratches to the base metal in the exterior powder coat finish shall constitute rejection of the post or complete fence frame section.

Bending or curving rails in the field in order to fit alignment requirements, shall not be permitted. The Engineer may order some bending or curving to allow for necessary adjustments.

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**C. Erection.** All Aesthetic Pedestrian Fencing panels shall be erected in accordance with approved shop drawings prepared and submitted to the Engineer as specified in the S.C.M.

**1. Drilling and Grouting Anchor Bolts.** Installation of the anchor bolts shall conform to Subsection 586-3.02 of the Standard Specifications.

**D. Positioning Fencing and Railing.** Fence panels and railing shall be erected so that the fence panels and rail are parallel to the top of sidewalk, parapet, or structural slab. Fence panels shall be firmly attached to the connection plates furnished on the posts.

**E. Positioning Posts.** Unless otherwise indicated on the Plans, the posts shall be set perpendicular to the top surface of concrete barriers and curbs, and concrete foundations.

**F. Base Plates.** Post base plates shall be perpendicular to the post, unless otherwise noted.

**G. Rail Span.** The hand and rub rails shall span the following minimum number of posts:

<u>Rail</u>	<u>Number of Posts</u>
TS 38 x 38 x 4.8	3
TS 102 x 51 x 6.4	3

**H. Anchor Studs.** After the anchor stud nuts have been tightened in a manner satisfactory to the Engineer, the studs shall be sawcut 12 mm above the nut. The first thread of the stud above the nut shall be damaged. The cut end of the anchor stud shall be coated in conformance with the requirements of Subsection 719-01, Galvanized Coating and Repair Methods.

**I. Repair of Powder Coat Finish.** Chips, gouges and deep scratches in the powder coat finish occurring as a result from the erection of the Aesthetic Pedestrian Fencing shall be repaired by:

- c.** Field-applied top coat. Acceptable coatings are TNEMEC's Series 70 through 75 (or approved equal) two-component Aliphatic Polyurethane Enamel. Prior to application, the exterior surfaces must be free of any contaminants such as grease, oil, dirt, etc. Appropriate solvents can be used to remove specific contaminants. Light sanding of the exterior surfaces further enhance adhesion of the top coat.

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- d.** Other acceptable practices recommended by the Powder Coating Institute.

**METHOD OF MEASUREMENT:**

Measurement will be taken as the number of square meters of fencing installed.

**BASIS OF PAYMENT:**

The unit bid price per square meter shall include the cost of furnishing all labor, materials, foundations and equipment necessary to complete the work.