

ITEM 607.45XX--11 - ORNAMENTAL STEEL MESH FENCE

ITEM 607.46XXYY11 - ORNAMENTAL STEEL MESH GATE

ITEM 607.47----11 - PRIVACY SLATS

DESCRIPTION

This work consists of furnishing and installing steel mesh fence and gates and privacy slats as shown in the contract documents or as directed by the Engineer.

MATERIALS

A. MANUFACTURERS:

Omega Architectural Fence
Omega II Fence Systems
1735 St-Elzear West
Laval, QC, Canada H7L 3N6
Tel: 800-836-6342
Fax: 450-681-5318
www.omegafence.com

Metalco Amego
Steel Fence System
Atlantis Products, Inc.
8185 S. Cass Ave
Darien, IL 60561
Tel: 630-971-9680
Fax: 630-971-9860
www.fence-system.com

Prism 3-D Fence System
Payne Fence Products
3309 SW Interstate 45
Ennis, TX 75119
Tel: 972-878-7000
Fax: 972-878-4703
www.paynefence.com

or equal as approved by the Regional Landscape Architect.

All materials shall be delivered to the site along with sufficient documentation indicating compliance with the requirements of the Department of Transportation, Federal Highway Administration Rules and Regulations, Section 165, Domestic Origin, (Buy America). Acceptable documentation may include mill certificates that verify the US origin of all steel products. The Engineer may reject all material, at no cost to the State, if it is not clear that all materials are in compliance with Buy America.

B. FENCE AND GATE:

- a. Product: Model "Omega Architectural" Fence and Accessories
- b. Steel Mesh Fence Panels:
 - i. The wire mesh fence panels shall be welded by resistance welding per ASTM A185 using 4.9 mm pre-galvanized steel wire, welded at each crossing to form rectangles of 50 mm by 150 mm. The cold rolled wire shall have a tensile strength of at least 515 MPa and a 985 Kg breaking strength.
 - ii. Galvanized Before Welding: Applied on wire, 150 g/sqm zinc coating conforming to the ASTM A641.
 - iii. One end of the vertical wires of the panel shall exceed 25 mm from the last or first horizontal wire thereby creating a spiked top or bottom depending of its position when installed. The other end is cut flush. A 4 mil polyester powder coating is applied on the mesh panel after fabrication.
 - iv. A 4 mil polyester powder coating shall be applied on the mesh.
- c. Gate Frames for swing gates shall be made in accordance with ASTM F900 using galvanized square steel tube 50 mm by 50 mm vertical and horizontal parts shall be welded at intersections to create a rigid frame.
- d. Fence posts shall be square posts, cold rolled from 1008 grade steel and meet ASTM

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- 513 and ASTM A787-01, G90 zinc coating (galvalume process). Provide post wall thickness and size as specified in the contract plans.
- e. Gate Posts shall be shall be produced per ASTM A787, G90 with a zinc coating (galvalume process) of 0.27kg/sqm on steel square sections in conformity to ASTM B-6. The steel shall meet the requirements of structural quality steel with a 310 MPa tensile strength.
 - f. Universal Post Bracket attachment kit for standard fence shall include 2.6 mm steel collar and wire retaining plate 6.3 mm by 25 mm, nut, washer and carriage bolt 8.0 mm by 32 mm - all galvanized steel. For 90 degree turn, use the same bracket. For different angles, use the "Universal angle brackets"
 - g. Post Caps shall be aluminum for the 50 mm by 50 mm square post and galvanized steel for other square posts. Polyester coating shall match post where specified.
 - h. The Special Panel Fitting, enabling a panel to be fastened to any vertical or horizontal surface, such as a steel, concrete beam or a wood post, shall be hot dip galvanized and provided as required.
 - i. Gate Hardware shall be in conformity with ASTM F900 for hinges, latch, drop rods, shall be hot-dip galvanized steel, and sized to assure proper gate operation. Non moving parts shall be powder coated.
 - i. Hinge shall be structurally designed to support all gates without deformation during opening and closing.
 - ii. Latch shall be clamp-on gravity system that is self latching.
 - iii. Gate Keeper for Double Leafed Models shall consist of mechanical device with gravity-lock system that fasten each gate leaf when in full open position.
 - iv. Double Gates Hardware shall consist of one drop bar to secure in closed position one of the gate leaves complete, with stop pipe to engage the center drop rod. And one self-locking device with padlock eyes as an integral part of latch.

C. FINISHES:

- a. Zinc Coating:
 - i. Galvanized After Welding (GAW): The wire meshes shall be coated with 366 g/sqm zinc in conformity with "ASTM A123/A123M Standard Specification for Zinc (Hot Dip Galvanized) Coating on Iron and Steel Products".
 - ii. Galvanized Before Welding (GBW): The wire mesh shall be coated with 150 g/sqm zinc in conformity with "ASTM A641 Standard Specification for Zinc-Coated (Galvanized) Carbon Steel Wire".
 - iii. The fence posts, the swing gate frame and posts shall be zinc coated (galvalume process) with 0.27 kg/sqm per "ASTM A787-01 Standard Specification for Electric-Resistance-Welded Metallic-Coated Carbon Steel Mechanical Tubing".
- b. Polyester coating shall be minimum 4 mils applied by an electrostatic method. Coating shall cover all surfaces of the wire and post sections. Coating shall be capable of withstanding the following tests:

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- i. Mechanical adhesion test per ASTM D 3359 - Method B.
- ii. Shock resistance tests per ASTM D 2794.
- iii. Salt spray testing with a minimum of 1,000 hrs without red rust appearance, per ASTM B 117.
- iv. Humidity resistance in a weather meter chamber per ASTM D 2247.
- v. Color: As selected by Architect from manufacturer's available finishes and colors.

D. HARDWARE AND ACCESSORIES:

- a. Anchor bolts embedded or grouted in concrete for securing fence post base plates shall meet the requirements of NYSDOT Standard Specification Section 723-60. Nuts and washers shall meet the requirements of ASTM A325M. Anchor bolts, nuts, and washers shall be galvanized in accordance with NYSDOT Standard Specification Section 719-01, Galvanized Coatings and Repair Methods, Type II.
- b. Grout for anchor bolts shall conform to the requirements of NYSDOT Standard Specification Section 701-05 or 701-07.
- c. Drilling and grouting shall be performed in accordance with NYSDOT Standard Specification Section 586.
- d. Base plates shall be A36M steel minimum and hot-dip galvanized according to NYSDOT Standard Specifications Section 719-01, Type I.
- e. Precast inserts shall meet the material requirements given in NYSDOT Standard Specification Section 704-03, Precast Concrete – General, and shall be coordinated with the precast concrete manufacturer.
- f. All other connecting pieces and other accessories shall be hot-dip galvanized and conform to NYSDOT Standard Specifications Section 719-01, Galvanized Coatings and Repair Methods, Type I.

E. PRIVACY SLATS:

Privacy slats shall be composed of extruded high density polyethylene (HDPE) containing color pigment and ultra violet inhibitors. Color shall be as specified in the contract plans.

CONSTRUCTION DETAILS

All work, including, but not limited to fabrications, inspection, and transportation of steel mesh fence shall be done in accordance with provisions of the New York State Steel Construction Manual.

A. SUBMITTALS:

- a. Product Data: Material descriptions, construction details, dimensions of individual

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- components and profiles, and finishes for the following:
- i. Fence and gate posts, rails, and fittings.
 - ii. Gates and hardware.
- b. Shop Drawings:
- i. Show locations of fence, each gate, posts, rails, and details of gate swing, or other operation, hardware, and accessories.
 - ii. Indicate materials, dimensions, sizes, weights, and finishes of components.
 - iii. Include plans, elevations, sections, gate swing and other required installation and operational clearances, and details of post anchorage, attachment and bracing.
 - iv. Installation procedures and instructions describing details for a typical fence and gates.
- c. Selection Samples: For each finish product specified, two complete sets of color chips representing manufacturer's full range of available colors and patterns.
- d. Verification Samples: For each finish product specified, two samples, minimum size 6 inches (150 mm) square, representing actual product, color, and patterns.
- e. Qualification Data: For firms and persons specified in "Quality Assurance" article to demonstrate their capabilities and experience. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.

B. QUALITY ASSURANCE

Installer Qualifications: An experienced installer who has completed fences and gates similar in material, design, and extent to those indicated for this Project and whose work has resulted in construction with a record of successful in-service performance.

C. DELIVERY, STORAGE, AND HANDLING.

Store products in manufacturer's tagged and unopened packaging until ready for installation.

D. INSTALLATION

- a. Work shall proceed in accordance with the manufacturer's instructions and in accordance with the contract plans.
- b. Privacy Slats shall be installed at locations shown in the contract plans. Installation of slats shall be coordinated with fence manufacturer.

METHOD OF MEASUREMENT

ORNAMENTAL STEEL MESH FENCE

This work will be measured as the number of meters of ORNAMENTAL STEEL MESH FENCE satisfactorily furnished and installed, measured along the top of the fence from center to center of the end posts.

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ORNAMENTAL STEEL MESH GATE

This work will be measured as the number of ORNAMENTAL STEEL MESH GATE satisfactorily furnished and installed.

PRIVACY SLATS

This work will be measured as the number of Square Meters of PRIVACY SLATS satisfactorily furnished and installed.

BASIS OF PAYMENT

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

Concrete, reinforcement, excavation, and fill for post foundations shall be paid for under separate items.

Payment will be made under:

Item No.	Item	Pay Unit
607.4512--11	Ornamental Steel Mesh Fence, 1.2 m high	M
607.4515--11	Ornamental Steel Mesh Fence, 1.5 m high	M
607.4524--11	Ornamental Steel Mesh Fence, 2.4 m high	M
607.46121211	Single Ornamental Steel Mesh Gate, 1.2 m high, 1.2 m opening	EA
607.46151211	Single Ornamental Steel Mesh Gate, 1.5 m high, 1.2 m opening	EA
607.46153111	Double Ornamental Steel Mesh Gate, 1.5 m high, 3.1 m opening	EA
607.46242411	Single Ornamental Steel Mesh Gate, 2.4 m high, 2.4 m opening	EA
607.46244911	Double Ornamental Steel Mesh Gate, 2.4 m high, 4.9 m opening	EA
607.46245511	Double Ornamental Steel Mesh Gate, 2.4 m high, 5.5 m opening	EA
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