

<u>Item 11607.7101 M -</u>	<u>Galvanized Powder Coated Steel Picket Fence 0.5M High</u>
<u>Item 11607.7102 M -</u>	<u>Galvanized Powder Coated Steel Picket Fence 0.7M High</u>
<u>Item 11607.7103 M -</u>	<u>Galvanized Powder Coated Steel Picket Fence 0.9M High</u>
<u>Item 11607.7104 M -</u>	<u>Galvanized Powder Coated Steel Picket Fence 1.0M High</u>
<u>Item 11607.7105 M -</u>	<u>Galvanized Powder Coated Steel Picket Fence 1.2M High</u>
<u>Item 11607.7106 M -</u>	<u>Galvanized Powder Coated Steel Picket Fence 1.4M High</u>
<u>Item 11607.7107 M -</u>	<u>Galvanized Powder Coated Steel Picket Fence 1.5M High</u>
<u>Item 11607.7108 M -</u>	<u>Galvanized Powder Coated Steel Picket Fence 1.7M High</u>
<u>Item 11607.7109 M -</u>	<u>Galvanized Powder Coated Steel Picket Fence 1.9M High</u>
<u>Item 11607.7110 M -</u>	<u>Galvanized Powder Coated Steel Picket Fence 2.0M High</u>
<u>Item 11607.7111 M -</u>	<u>Galvanized Powder Coated Steel Picket Fence 2.2M High</u>
<u>Item 11607.7112 M -</u>	<u>Galvanized Powder Coated Steel Picket Fence 2.44M High</u>
<u>Item 11607.7113 M -</u>	<u>Galvanized Powder Coated Single Steel Picket Gate 2.00M High</u> <u>1.55M Opening</u>
<u>Item 11607.7114 M -</u>	<u>Galvanized Powder Coated Single Steel Picket Gate 2.44M High</u> <u>1.55M Opening</u>
<u>Item 11607.7115 M -</u>	<u>Galvanized Powder Coated Double Steel Picket Gate 2.44M High</u> <u>3.1M Opening</u>

DESCRIPTION: Under these Items, the Contractor shall furnish and erect GALVANIZED POWDER COATED STEEL FENCES and GATES of the types and sizes shown on the plans, in accordance with the plans, specifications, and directions of the Engineer.

MATERIALS: Fences and Gates shall be constructed of bars, posts, and rails of the sizes shown on the plans. All materials shall conform to Specifications C1015 of the A.I.S.I.

CONSTRUCTION DETAILS:

FABRICATION: Fences and Gates shall be fabricated in strict accordance with the plans and approved shop drawings. Posts and rails shall be formed into panels of the shapes shown on the plans and joints completely welded with welds of proper size and shape; all welds ground smooth to a neat finish. Connection shall be proved as indicated on the plans. Welding shall conform to the requirements given under the “Materials and Methods of Construction”, Section B.

Posts and pickets shall, in all cases, be truly vertical. Rails and bars shall be parallel to grade as shown on the plans.

LOCK BOLTS: Shall be a drop rod bar arranged to engage the gate stop. A Locking device shall be constructed so that the drop rod cannot be raised when the gate is locked. The locking bolt and bolt catch hardware shall be constructed as shown on the detail drawings. The locking device shall have provisions for a padlock. All necessary fittings and gate holders to lock gates in both open and closed positions shall be furnished.

GATE LATCH: Shall be a lockable stirrup type. The Latch shall be constructed of steel bars and blocks with a stainless steel pin as shown on the drawings. The ends of stirrups shall be treated with a heavy-duty flexible, rubberized coating.

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<u>Item 11607.7114 M -</u>	<u>Galvanized Powder Coated Single Steel Picket Gate 2.44M High 1.55M Opening</u>
<u>Item 11607.7115 M -</u>	<u>Galvanized Powder Coated Double Steel Picket Gate 2.44M High 3.1M Opening</u>

PADLOCK: The Contractor shall furnish one padlock for each single gate and each leaf of double gates. All padlocks shall be keyed alike with a master key, with 50mm wide by 19mm thick brass body, maximum security, five (5) pin tumblers with hardened alloy steel chrome plated shackle no less than 9.5mm diameter and 50mm clearance (elongated shackle). A galvanized steel chain, 228mm long shall be fastened to the gate and body of the lock. The chain shall be 8mm by 35mm. The Contractor shall furnish eight (8) master keys.

Galvanization and Powder Coating. All components of the fencing including the casting, angle iron frames, posts, and rails shall be hot dipped galvanized in accordance with the provisions of the NYS DOT Standard Specifications. All galvanized surfaces will be given thermo-setting polyester powder finish for extra protection and added aesthetic appeal. The coating shall be lead free and without solvents. The final color shall be as approved by the Engineer.

The Powder Coating Process

The Powder coating process shall consist of the following steps unless directed otherwise by the Engineer:

- The material shall be suspended on Transport Beams
- The material shall be alkaline cleaned and then rinsed
- The material shall be pickled in a bath with inhibited phosphoric acid and then rinsed.
- An active anti-corrosive layer of zinc phosphate shall be applied and rinsed
- The layer of zinc phosphate shall be sealed with a hexavalent chromating agent of very low weight and then the material shall be rinsed.
- The material shall be rinsed with e-ionized water to remove any remaining salts which can cause osmosis.
- The material shall be dried in the drying oven
- The powder shall be charged to 80000 volts and then sprayed onto the grounded steel
- The material shall be heated to a temperature between 170°-200° C, in accordance with the powder manufacturer's specifications, to melt the resin cores and to form a smooth homogeneous coating.

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- The final product shall be inspected and tested by NYSDOT designated inspectors.

The approved product shall be carefully packed to prevent damages during shipping and unapproved product shall be removed at the Contractor's expense.

ERECTION: The fences shall be erected in holes which shall have been formed in the concrete to receive them. After the posts have been set in place and properly supported to hold them to line and grade, the annular space shall be filled to the depth shown on the plans with grout composed of one (1) part Portland Cement to two (2) Parts sand. After the grout has hardened, the remaining space shall be filled with an epoxy sealer filler as approved by the engineer. Sealer shall be applied in strict accordance with the manufacturer's instructions, and shall be tooled in to fill and seal hole and form a 6mm wash away from the post. Any Fences and gates not set plumb and true to line and grade shall be removed and replaced at the Contractor's expense. The Contractor shall maintain the fences and gates during the life of the contract and shall repair and replace all members that are disturbed, damaged, or destroyed.

SUBMITTALS: All submittals shall be in accordance with the requirements of the General Conditions, Section C, Special Requirements Article 11. Shop Drawings are required. The Contractor shall submit for the approval of the Engineer finished sample parts of the fences. The workmanship and finish of the final product shall be equal to the approval samples.

METHOD OF MEASUREMENT: The quantity of GALVANIZED POWDER COATED STEEL FENCE shall be the number of linear meters of each type of fence furnished and erected complete, in accordance with the plans, specifications, and directions of the Engineer.

The quantity of GALVANIZED POWDER COATED GATE shall be the number of each size (including both leaves of double gates and gate posts) furnished and erected complete in accordance with the plans and specifications and directions of the Engineer including locking devices, gate stops and padlocks.

BASIS OF PAYMENT: The price bid shall be unit prices per linear meter of Galvanized Powder Coated Steel Fence of each type and unit price per each galvanized powder coated gate

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and shall include the cost of all labor, material and equipment necessary to furnish and erect fences and gates, including galvanizing, powder coating all incidental expenses necessary to complete the work in accordance with the plans and specifications, to the satisfaction of the Engineer.

Concrete and excavation shall be paid for separately under the respective Items.