

ITEMS 607.70XX 11 - STEEL FENCES AND GATES (NYCDPR)

DESCRIPTION.

This work will consist of the fabrication, installation, and painting of standard New York City Department of Parks and Recreation (NYCDPR) steel fences and gates as described in the contract documents, at the locations indicated on the plans and as directed by the Engineer. All structural steel work including, but not limited to, fabrication, installation and transportation shall be done in accordance with the provisions of the New York State Steel Construction Manual.

MATERIALS.

Materials for this work shall meet the requirements of the New York State Steel Construction Manual and the following subsections of the NYSDOT Standard Specifications:

§572	Structural Steel Painting – Shop Applied
§573	Structural Steel Painting: Field Applied – Total Removal
§701-05	Concrete Grouting and Anchoring Material.
§708	Paints
§715-01	Structural Steel.
§715-02	Steel Casings.
§715-05	Iron Castings.
§715-06	Steel Forgings.
§715-09	Malleable Iron Castings.
§715-14	High Strength Bolts, Nuts and Washers.
§721-03	Epoxy Polysulfide Grout.

Structural Steel: Certified copies of the results of tests conducted by the manufacturer shall be furnished to the Engineer.

Fences And Gates: Shall be constructed of solid bars, posts, and rails of the sizes shown on the plans unless specifically noted as lightweight. All material shall conform to Specification ASTM A36.

Fabrication – Steel Fences And Gates: Plates, castings, pickets, posts, and rails shall be formed into panels of the sizes and shapes shown on the approved shop drawings. Panels shall be curved as required by the work. Joints shall be completely welded with welds of proper size and shape. All welds shall be ground smooth to a neat finish. The Contractor shall submit finished sample fence parts to the Engineer for approval. The workmanship and finish of the final product shall be equal to the approval samples.

Pickets shall be vertical (plumb). Rails and bars shall be parallel to grade unless specifically shown otherwise in the contract documents. Braces shall be required at two-thirds (2/3) of the way up each post when fence is 3.050 m high or over. Connections between panels and posts shall be provided as indicated contract documents.

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Paint: The fences and gates shall receive three (3) coats of paint.

First Coat (Shop Applied): The primer shall be a fast drying, 81% ± 2% weight solids, low VOC, rust inhibiting, modified alkyd metal primer with a dry film thickness of 3-4 mils and shall be selected from the Approved List for Structural Steel Paints – Shop Applied. Paint requires two and a half (2 ½) hours drying time before recoating (with alkyds).

Second Coat and Third Coats (Field Applied): The topcoat shall be a VOC compliant silicone alkyd high gloss coating having a dry film thickness of 2-4 mils (each coat) and shall be selected from the Approved List for Structural Steel Paints – Field Applied. Paint requires eighteen (18) hours drying time @ 25° C.

The color of the finish coat shall be as specified in the contract documents. All coats of paint shall be produced by the same manufacturer. Selection of undercoat colors is left to the discretion of the Contractor except that each single paint coat shall be a color different from the others and shall be approved by the Engineer.

Paint Substitution: A written request for paint substitution must be submitted to Engineer, who will coordinate with the DPR Coordinator of Submittals. The Contractor shall submit this request, along with Material Safety Data Sheets (MSDS) for approval, a minimum of two (2) weeks prior to the intended date of paint application. All paint substitutions must be approved in writing prior to use.

Hinges: The Hinges shall a Heavy Duty Steel Ball Bearing Hinge, 127 mm x 152 mm from the following:

#BB855
Manufactured by,
Stanley Hardware
480 Myrtle Street
New Britain, CT 06053
800-337-4393
www.stanleyhinges.com

Heavy Duty Pressed Steel Hinge
Manufactured by,
Shannon Fence and Painting
900 Long Island Ave
Deer Park, NY 11729
631-254-0314
www.shannonfencing.com

Or equal as approved by the Engineer.

Lock Bolt: Shall be a drop rod bar arranged to engage the gate stop. 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 NYCDPR standard 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. The locking device shall be as manufactured by:

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Internal Locking Device Drop Rod
Manufactured by,
Boundary Fence and Railing Systems, Inc.
131-02 Jamaica Ave.
Richmond Hill, NY 11418
800-377-4393
<http://boundaryfence.net>

Drop Rod
Manufactured by,
Shannon Fence and Painting
900 Long Island Ave
Deer Park, NY 11729
631-254-0314
www.shannonfencing.com

Or equal as approved by the Engineer.

Gate Stop: The gate stop shall be as shown on the drawings.

Gate Latch – Single Gates: Shall be a lockable stirrup type. 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.

Padlock: The Contractor shall furnish one padlock for each single gate and each leaf of double gates. All padlocks for the same park facility shall be keyed alike, with 50 mm wide by 19 mm thick brass body, maximum security, five (5) pin tumblers with hardened alloy steel chrome plated shackle no less than 9.5 mm diameter and 50 mm clearance (elongated shackle). The Contractor shall furnish two (2) keys for each padlock.

Galvanized steel chain: A galvanized steel chain, 225 mm long shall be fastened to the gate and body of the lock. The chain shall be 8 mm by 35 mm.

Cast Iron NYCDPR Parks Leaf for Double Gates: The NYCDPR retains exclusive right to the use of the leaf pattern. The Park Leaf casting shall be as manufactured by:

Park Leaf
Manufactured by,
Wemco Castings, LLC
20 Jules Court, Suite 2
Bohemia, NY 11716-4106
631-563-8050
www.wemcocastingllc.com

Park Leaf
Manufactured by,
ARC Iron Works, Inc.
25 Cliff Street
New Rochelle, NY 10801
(914) 632-8992
www.arciron.net

Or equal as approved by Engineer.

Leaf castings are to be fabricated from Ductile Iron 65-45-12. The small 188 mm leaf shall weigh approximately 2.72 kg each. The back of the leaf casting is to be flat and the front face shall be contoured with the veins of the leaf shown in relief. See Contract Drawings for structural details.

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Park leaves shall be welded to each leaf of the steel gate in the shop. Field welding will not be permitted.

Foundry Certificate: A certificate verifying the quality of ductile iron for the Parks Leaf shall be submitted. Certificate shall be on Manufacturers' letterhead, dated and signed by the company President with Contract Number, Contract Title, Contractor Name, and Class of Ductile Iron provided.

Grout: Grout for fence posts shall be non-shrink, cement based grout, as manufactured by:

Sonneborn 10K Grout
Manufactured by
BASF Building Systems, Inc.
889 Valley Park Drive
Shakopee, MN 55379
952-496-6000
<http://www.buildingsystems.basf.com>

SikaGrout 212
Manufactured by
Sika Corporation
201 Polito Ave
Lyndhurst, NY 07071
800-933-SIKA
usa.skia.com

Five Star High Strength Grout
Manufactured by
Five Star Products, Inc.
750 Commerce Drive
Fairfield, CT 06825
800-243-2206
www.fivestarproducts.com/

Or equal as approved by Engineer.

Sealant: Sealant around fence post shall be one part polyurethane, elastomeric adhesive as provided by the following:

Sonneborn's Ultra Sealant
Manufactured by
BASF Building Systems, Inc.
889 Valley Park Drive
Shakopee, MN 55379
952-496-6000
<http://www.buildingsystems.basf.com>

Sikaflex-la
Manufactured by
Sika Corporation
201 Polito Ave
Lyndhurst, NY 07071
800-933-SIKA
usa.skia.com

DynaTred
Manufactured by
Pecora Corporation
165 Wambold Road

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Harleysville, PA 19438

800-523-6688

www.pecora.com/

Or equal as approved by Engineer.

CONSTRUCTION DETAILS.

General: The Contractor shall mark and obtain approval of the proposed fence alignments and gate locations from the Engineer prior to proceeding with shop drawings, fabrication, or installation.

Shop Drawings: The Contractor shall measure the space where the fence or gate will be located and shall use this information to create accurate shop drawings of the fence or gate to be installed. A least 15 calendar days prior to starting work, the Contractor shall submit two (2) sets of shop drawings to the Engineer for approval. If revisions are required, two (2) paper sets of all required revised drawings must be submitted for approval.

Preparation for Painting: Shall be done in accordance with §572 - 3.02 "Surface Preparation" except that sandpaper, power sanders, hand scrapers, hand or power impact tools, hand or power wire brushes, and/or grinders may be used to remove scale and rust to achieve a sound substrate.

Immediately prior to painting, all surfaces of fences and gates shall be thoroughly cleaned in accordance with the Society of Protective Coatings (formerly the Steel Structures Painting Council) (SSPC) and be free of debris.

1. All surfaces that are rust free shall be treated in accordance with SSPC-SP-1, Solvent Cleaning. Treatment shall be performed with a solvent such as mineral spirits, xylol, or turpentine to remove all dirt, grease, and foreign matter.
2. Surfaces that show evidence of scale and rust shall be cleaned in accordance with:
 - SSPC-SP-2, Hand Tool Cleaning, a method generally confined to wire-brushing, sandpaper, hand scrapers or hand impact tools, OR
 - SSPC-SP-3, Power Tool Cleaning, a method generally confined to power wire brushes, impact tools, power sanders, and grinders in order to achieve a sound substrate.

Painting: The Contractor shall submit duplicate paint chips to the Engineer for approval prior to starting painting work.

After the fence and gates have been cleaned and prepared, they shall be painted as follows:

1. The first coat shall be a primer and shall be shop painted

Following fabrication and installation of the steel fences and gates on site, all welds, bolted areas and areas where paint has been damaged shall be stripped and field-painted with the approved primer

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2. The second and third coat shall be field applied and the entire structure shall be field-painted with the approved finish coat. If the colors of the primer and/or intermediate coat show through the finish coat, additional coats of the approved finish coat paint shall be applied at no extra cost to the state until the undercoat colors are completely masked and the finish coat color matches the approved color chip.

All paints shall be applied when ambient air temperature is seven degrees (7°) C. and rising and when surfaces to be painted are moisture free. No painting will be allowed below the minimum ambient air temperature. In addition, no painting will be allowed below the temperature at which moisture will condense on surfaces.

When applying the field coat the Contractor shall take care to protect all adjacent surfaces of curbs and pavements from paint spatters and spills. Any spatters or spills are to be removed immediately, using appropriate solvents as needed.

Installation: The Contractor shall form or drill post holes in concrete or stone footings, curbs, or walls in the approved locations and as required by the contract documents. The Contractor shall support each fence or gate post in a manner that will keep it plumb, smoothly aligned with the other posts, and at the elevation required by the contract documents. The space surrounding each post shall be filled to the depth shown in the details with Concrete Grouting Material. After the concrete grout has hardened, non-sag polyurethane sealant shall be gunned in to fill the remaining space, seal the post hole from water entry, and form a 6mm high slope away from the post. Application of both grouts shall be in strict accordance with the manufacturer's instructions.

Note: All gypsum (Calcium Sulfate, CaSO₄) based grout will be rejected.

Fence and gate rails shall be set at slopes conforming to the slope of the finish grade beneath the fence or gate unless specifically shown otherwise in the contract documents.

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 replace all members that are disturbed, damaged, or destroyed.

Double and Single Gate Installation: Each gate leaf installed shall include a padlock with a 228 mm long galvanized steel chain fastened to the gate and the body of the lock, a lock bolt, and all necessary fittings to hold and lock the gate in both open and closed positions. Gate stops shall be provided for each gate at the locations indicated in the contract documents or at locations indicated in the field by the Engineer. Gates shall include gate posts, locking devices, gate stops and padlocks.

Single Gate Installation: Each single gate installed shall include a lockable stirrup type gate latch. All paint spatters, metal scraps, and metal fillings shall be removed from the site before the work will be accepted.

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Extra Materials: For each 64 linear meters of 0.76 meter high steel fence and gates, 40 linear meters of 1.22 meter high steel fence and gates, or 23 linear meters of 2.13 meters high steel fence and gates, the Contractor shall furnish and deliver a 3.8 liter can of the approved finish coat paint in the approved color, and .95 liter of the corresponding approved thinner to the Engineer. If less than 8 linear meters of 0.76 meter high steel fence and gates, 10 linear meters of 1.22 meters high steel fence and gates, or 5.75 linear feet of 2.1 or 2.44 meter high steel fence and gates are installed on the project, the Contractor shall furnish and deliver a 0.95 liter can of the approved color, and 0.56 liters of the corresponding approved thinner to the Engineer.

METHOD OF MEASUREMENT.

The work for the fabrication and installation of the Steel Fences will be measured as the number of linear meters of each type of fence installed measured to the nearest 0.1 meter.

The work for the fabrication and installation of the Steel Gates will be measured as the number of each type of gate installed. Two leaves will be counted as one double gate.

BASIS OF PAYMENT.

The unit price bid for each type of fence or gate shall include the cost of all labor, materials, and equipment necessary to satisfactorily complete the work.

All concrete work, excavation and clearing and grubbing will be paid for separately under their respective items.

Payment will be made under:

Item No.	Item	Pay Unit
607.7015	11 Steel Picket Fence, 0.76 M High (NYCDPR)	Meter
607.7016	11 Steel Picket Fence, 1.22 M High (NYCDPR)	Meter
607.7017	11 Single Steel Picket Gate, 1.22 M High, 1.22 M Opening (NYCDPR)	Each
607.7018	11 Double Steel Picket Gate, 1.22 M High, 2.44 M Opening (NYCDPR)	Each
607.7019	11 Ornamental Steel Fence, 1.22 M High (NYCDPR)	Meter
607.7020	11 Single Ornamental Steel Gate, 1.22 M High, 1.22 M Opening (NYCDPR)	Each
607.7021	11 Double Ornamental Steel Gate, 1.22 M High, 2.44 M Opening (NYCDPR)	Each
607.7022	11 Double Ornamental Steel Gate, 1.22 M High, 3.30 M Opening (NYCDPR)	Each
607.7023	11 Steel Picket Fence, 2.13 M High (NYCDPR)	Meter
607.7024	11 Single Steel Picket Gate, 2.13 M High, 1.52 M Opening (NYCDPR)	Each
607.7025	11 Double Steel Picket Gate, 2.13 M High, 3.05 M Opening (NYCDPR)	Each
607.7026	11 Ornamental Steel Fence, 2.13 M High (NYCDPR)	Meter
607.7027	11 Single Ornamental Steel Gate, 2.13 M High, 1.52 M Opening (NYCDPR)	Each
607.7028	11 Double Ornamental Steel Gate, 2.13 M High, 3.05 M Opening (NYCDPR)	Each
607.7029	11 Steel Picket Fence, 3.05 M High (NYCDPR)	Meter
607.7030	11 Single Steel Picket Gate, 3.05 M High, 1.52 M Opening (NYCDPR)	Each
607.7031	11 Double Leaf Steel Gate, 0.92 M High, 8.08 M Opening (NYCDPR)	Each

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607.7032	11 Double Steel Picket Gate, 2.44 M High, 3.05 M Opening (NYCDPR)	Each
607.7033	11 Double Steel Picket Gate, 3.05 M High, 3.05 M Opening (NYCDPR)	Each