BASTEEL PERIMETER SYSTEMS ™
Series 4000 Cantilever Gate System

SECTION 32 31 19

DECORATIVE METAL FENCES AND GATES

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PART 1 GENERAL

A. The scope of this Specification includes the **Series 4000 Cantilever Gate System** manufactured by BASTEEL Perimeter Systems ™.
   1. Consult Manufacturer for further information. BASTEEL Perimeter Systems, 1400 Magnolia Avenue, Frankfort, Indiana 46041, 1-866-369-8335, see http://www.basteel.com/

B. NOTE: BASTEEL also designs and manufactures matching fence systems of similar quality and design attributes, including architectural and security fence systems.

1.1 WORK INCLUDED

A. Contractor shall provide labor, materials and appurtenances necessary for installation of Decorative Metal Gate System defined and described herein at [*INSERT PROJECT NAME, LOCATION*], further described within Part 2 of this specification.

1.2 RELATED WORK

A. Section 03 30 00 Cast-In-Place Concrete: Concrete anchorage for posts.

B. Section 31 00 00 Earthwork.

1.3 SYSTEM DESCRIPTION

A. Manufacturer shall supply a Decorative Metal Gate System of BASTEEL Perimeter Systems **Series 4000 Cantilever Gate System** design.

1.4 QUALITY ASSURANCE

A. The Contractor shall provide laborers and supervisors who are thoroughly familiar with the type of construction involved and materials and techniques specified. Contractor shall report in writing to Architect prevailing conditions that may adversely affect satisfactory execution of Work.
   1. Do not proceed with Work until unsatisfactory conditions have been corrected.

B. Additional qualifications:
   1. Manufacturer: Company specializing in manufacturing Products specified with minimum ten (10) years documented experience.
   2. Contractor / Installer: Company specializing in performing Work of this Section shall have sufficient documented experience in installation of similar Products.

1.5 REFERENCES

A. American Society for Testing and Materials (ASTM):
   1. ASTM A500/A500M-13: Standard Specification for Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes

2. ASTM A653/A653A: Standard Specification for Steel Sheet, Zinc-Coated by the Hot-Dip Process.
3. ASTM D2244: Test Method for Calculation of Color Differences from Instrumentally Measured Color Coordinates.
4. ASTM D4214: Test Methods for Evaluating the Degree of Chalking of Exterior Paint Films.
5. ASTM F1043: Specification for Strength and Protective Coatings for Metal Industrial Fence Framework.

B. American Architectural Manufactures Association (AAMA):
1. AAMA 621: Voluntary Specifications for High Performance Organic Coatings on Coil Coated Architectural Hot Dipped Galvanized (HDG) & Zinc-Aluminum Coated Steel Substrates.

C. American National Standards Institute (ANSI):
1. ANSI B1.13M: Metric Screw Threads: M Profile.

1.6 SUBMITTALS

A. Manufacturer submittal package shall be submitted in accordance with Section 03 3300 prior to installation.

B. Manufacturer shall utilize available architectural drawings, customer conceptual drawings, available field measurements and other information initially provided by Architect to develop proposed project drawings for subsequent review and approval.

C. Requirements for Submittals:
1. Identify Product Data from Manufacturer regarding gates, posts, accessories, fittings and hardware. Identify applicable certifications including, but not limited to following:
   a. Made in U.S.A., Buy American Act or otherwise, as required.
2. Specify applicable requirements related to intended use such as, but not limited to, need for licensed professional engineering (PE) certification.
3. Provide field drawings, including plan layout showing gate location and opening size, with field dimensions, location and elevation of nearby fences, roadways and gates as well as details of attachments and footing details, as required.

   NOTE: Specific footing requirements may vary due to soil conditions, frost line and other local conditions. Consult with local jurisdictional authority regarding site requirements and local conditions.

4. Verify by field measurements that actual field dimensions and layout shown on submittal drawings accurately reflect customer installation requirements, property survey lines and existing structures.
5. Submit quality assurance information including documentation of installer experience indicating compliance with specified qualification requirements.
6. Manufacturer material certification shall conform to current ASTM or other applicable specifications and shall be made available upon request.

1.7 PRODUCT HANDLING AND STORAGE

A. Upon delivery, Contractor shall confirm materials were delivered undamaged and items necessary for installation are present on site. Contractor shall report discrepancies to Manufacturer at time they are identified, prior to beginning installation work.

B. Requirements for Handling and Storage:
1. Prior to and during installation process, protect finished metal surfaces with wrapping or strippable coating. Do not use adhesive papers or sprayed coatings that may bond to metal when exposed to sunlight or weather.
2. Materials shall be securely stored to protect against accidental damage, vandalism and theft in a manner that provides proper ventilation, drainage and protection from anticipated weather conditions.
3. Product shall be handled in a manner to preserve integrity of finish coating as well as form and function of each gate component.

4. NOTE: Failure to comply with requirements B.1, B.2 or B.3 above shall void Manufacturer Product Warranty.

1.8 PRODUCT WARRANTY

A. Gate shall be warrantied for a period of five (5) years within specified limitations; infill components shall be warrantied for a period of (15) years as described within Manufacturer Master Warranty Statement.

PART 2 PRODUCTS

2.1 MANUFACTURER

A. The design is based on Products exclusively designed and manufactured by:
   1. BASTEEL Perimeter Systems, 1-866-369-8335; see http://www.basteel.com/
   2. BASTEEL product substitutions are permitted.
   3. Product Substitutions by other manufacturer shall be submitted to Architect in accordance with substitution requirements as set forth in general provisions of Project Manual.

2.2 MATERIALS

A. Heavy-duty mono-block carriage assemblies shall be designed for continuous duty and shall utilize precision-ground pre-lubricated sealed bearing assemblies, shielded to protect against normal ambient environmental conditions such as wind, dust, dirt, damp, rain, snow and/ or icing.

B. Heavy-duty bottom track shall be comprised of formed steel having a cross section dimension of 3-1/2 inch-high x 4 inch-wide, weighing 7.8 pounds per linear foot, with a wall thickness of 0.187 inch, hot dipped galvanized (HDG) to minimum zinc coating weight of 1.8 oz. per square foot, per side.

C. Where specified, BASTEEL infill pickets 5 inches in width shall be liquid color coated and then roll formed from minimum 0.017-inch-thick full-hard 80,000 psi minimum yield strength steel in accordance with ASTM A653.
   1. Protective coatings shall consist of a hot dip galvanized zinc G-90 under coat; then a two-coat, thermo-cured paint system consisting of a primer bottom coat and a fluoropolymer top coat. Fluoropolymer top coat shall contain not less than 70 percent polyvinylidene difluoride by weight (e.g. Kynar 500® PVDF resin-based coating) complying with physical properties and coating performance requirements of AAMA 621.
   2. Top coat protection shall meet minimum performance requirements of South Florida outdoor exposure of 45° with a color retention of less than five (5) units color change per ASTM D2244 and a chalk resistance rating of no less than eight (8) per ASTM D4214.
   3. Specifier shall select infill panel design from manufacturer stock options [*INSERT*]. See manufacturer literature.
   4. If other infill is required, contact manufacturer for assistance.

D. Gate frame shall consist of 2.0”x 4.0” x 0.073” wall (14 gage) minimum steel tubing, reinforced with 1.0”x 2.0” x 0.060” wall (16 gage) minimum, 50,000 psi minimum yield strength steel tubing in accordance with ASTM A500, zinc coated in accordance with ASTM F1043 type B. Thermo-cured top coat protective finish layer in specified color shall consist of (*SPECIFY ONE*)
   a. [super-durable polyester powder coat], or
   b. [thermocured fluoropolymer powder coat]

E. Standard square posts shall conform to ASTM A500 and be either of following:
   1. 4”x 4” high strength steel, 50,000 psi minimum yield strength, zinc coated per ASTM F1043 type B, or
   2. 6”x 6” steel, hot dipped galvanized (HDG) to minimum zinc coating weight of 1.8 oz. per square foot, per side.

3. Posts shall have 3-mil minimum thickness thermo-cured top coat protective finish layer in specified color shall consist of (*SPECIFY ONE*)
   a. [super-durable polyester powder coat], or
   b. [thermocured fluoropolymer powder coat]

F. A variety of integrated gate latching and locking mechanisms are available, contact Manufacturer for assistance.

G. Where BASTEEL infill pickets specified, infill fasteners shall be series 302 stainless steel 6-Lobe pin-in security truss head, full body shouldered conforming to ANSI B1.13M with a minimum pull out tensile strength of 5,500 N. Other fasteners shall be corrosion resistant.

H. Color Selection:
1. Architect shall specify top coat color selection from Manufacturer list of stock colors (*SPECIFY ONE*)
   a. [Bronze]
   b. [Patrician Bronze]
   c. [Desert Sand]
   d. [Canyon Brown]
   e. [Cinder Black]
   f. [Polar White]
2. NOTE: Custom colors are available, contact Manufacturer.

2.3 FABRICATION

A. Gate frame, heavy-duty bottom track and mono-block carriage assemblies, posts and accessories shall be provided as integral components of an engineered gate system as detailed in Manufacturer shop drawings and as otherwise defined by Manufacturer.
1. Gate frame shall be designed and constructed so as to be rigid and self-supporting over life of product without need for tension cables or turnbuckles to maintain overall squareness.
2. Gate frame perimeter shall utilize miter cut corners and be free of sharp edges, cuts, bends and weld splatter prior to factory finish being applied.
3. Gate frame welds shall utilize silicon bronze welding wire conforming to AWS A5.7 / ER CUSI-A so as to inhibit corrosion.
4. Where specified, infill materials shall be incased on four sides by gate frame perimeter.

PART 3 EXECUTION

3.1 PREPARATION

A. New installations shall be laid out by Contractor in accordance with information provided by Architect. Verify field measurements, surfaces, substrates and conditions are as required, and ready to receive Work.

3.2 GATE INSTALLATION

A. Contractor shall consult with local jurisdictional authorities regarding specific utility locate requirements. Contractor shall arrange for local underground utility locate service to identify and locate potential below-grade utility hazards such as electric, gas, water, sewer, telecommunications and similar infrastructure prior to commencing clearing, digging, excavating or gate installation work.

B. Contractor shall complete concrete work per Architect-provided information consistent with local jurisdictional authority requirements and gate installation in accordance with Manufacturer Installation Instructions and approved shop drawings. Mono-block carriage template, heavy duty mono-block carriage assemblies and gate posts and shall be located and spaced in accordance with Manufacturer drawings.

Posts shall be set in suitable concrete footers designed and constructed for structural integrity in specific application.

1. Setting of gate posts by other methods (e.g. base plate mounting, grouted core-drilled footers) is permissible only as determined by Architect.
2. Should Contractor elect to substitute foundation design, Contractor shall make sure design and construction of alternate foundation design will be sufficient for intended application.

B. Gate installation may require limited cutting or drilling to accommodate slight variations in field measurements and normal construction tolerances. Contractor shall take reasonable precautions to make sure exposed metal surfaces are properly sealed from environment, as described below:

1. Carefully inspect gate and metal components during installation.
2. Remove metal shavings from drilling or cutting of posts or metal gate components.
3. Where cutting or drilling was determined necessary, clean metal surfaces and apply two (2) coats of zinc-rich metal primer to thoroughly cover each cut edge or hole drilled during installation processes. Allow each coat to dry thoroughly.
4. Next, apply two (2) thin coats of Manufacturer-supplied custom touch-up paint to such locations, allowing each coat to dry thoroughly.
5. Inspect work and verify each cut or drilled metal surface was properly treated as described above.
6. NOTE: Failure to properly clean, prime and finish paint exposed surfaces as described in steps 1 – 5 above shall void Manufacturer Warranty.

3.3 FIELD QUALITY CONTROL

A. Contractor shall perform Contractor quality control inspections and document findings upon completion of Work.

1. Inspect gate installation against Manufacturer information such as but not limited to post spacing, location and dimensions of gate opening and finishes.
2. After initial installation, cycle gate through full range of motion while carefully observing gate operation to make sure gate system is free of binding, twisting or undesirable conditions. Adjust as necessary, then re-inspect as described above.
3. Carefully inspect gate closure process to make sure correct alignment of gate, gate stops, slide bolt assembly and associated components (e.g. cane rod and lock). Adjust as necessary, then re-inspect as described above.
4. Document preparatory, initial and follow-up inspections in Contractor Test and Inspection Reports.
5. Contractor Test and Inspection Reports shall be made available to Architect and Manufacturer upon request.

B. Contractor shall correct deficiencies in products and installation found to be out of compliance with Contract Documents.

3.4 FENCE SYSTEM

A. For projects that include fence systems, follow Manufacturer Installation Instructions and Specifications.

3.5 CLEANING

A. Contractor shall clean jobsite of excess gate and gate materials as well as remaining packing and shipping materials. Post hole excavation material shall be scattered uniformly away from posts unless otherwise specified within Contract Documents.

END OF SECTION