BASTEEL PERIMETER SYSTEMS™
(765)654-5225
www.basteel.com
1400 Magnolia Avenue, Frankfort, IN 46041

BASTEEL Perimeter Systems
Cambridge® - Steel Architectural Fence System
CONSTRUCTION SPECIFICATION - SECTION 32_31_19

Directions to the Specifier:
This specification contains elements with user selectable options like finish, color and post sizing. Where a choice needs to be made by the specifier you will find a "** NOTE TO SPECIFIER **" comment in the margin highlighted in yellow alerting you to select your preferred option and remove all others. In cases where two choices must be made, the first choice will be highlighted in RED with the second choice highlighted in TEAL. Be sure to review the whole document and omit all options not wanted, leaving behind your preferred selections and a completed specification. For further assistance, contact the BASTEEL Architectural Team (888) 365-6645; info@basteel.com; www.basteel.com

PART 1 GENERAL

1.1 SECTION INCLUDES
A. Aluminum louver fence systems.
B. Architectural fence systems.
C. Cantilever gate systems.
D. Single swing gate systems.
E. Double swing gate systems.

1.2 RELATED SECTIONS
A. Section 03300 – Cast-In-Place Concrete.
B. Section 02200 – Earthwork.

1.3 REFERENCES
A. American Architectural Manufactures Association (AAMA):
1. AAMA 621 - Voluntary Specifications for High Performance Organic Coatings on Coil Coated Architectural Hot Dipped Galvanized (HDG) and Zinc-Aluminum Coated Steel Substrates.
B. ASTM International (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/A653M - Standard Specification for Steel Sheet, Zinc-Coated by the Hot-Dip Process.

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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.

C. American National Standards Institute (ANSI):

1. ANSI B1.13M - Metric Screw Threads: M Profile.

1.4 SUBMITTALS

A. Submit under provisions of Section 013000.

B. Product Data:

1. Manufacturer's data sheets on each product to be used.
2. Preparation instructions and recommendations.
3. Storage and handling requirements and recommendations.
4. Typical installation methods.
5. Proof of Manufacturer's warranty.

C. Shop Drawings: Include details of materials, construction and finish.

1.5 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section with a minimum five years documented experience.

B. Installer Qualifications: Company specializing in performing Work of this section with minimum two years documented experience with projects of similar scope and complexity.

C. Source Limitations: Provide each type of product from a single manufacturing source to ensure uniformity.

D. Mock-Up: Construct a mock-up with actual materials in sufficient time for Architect's review and to not delay construction progress. Locate mock-up as acceptable to Architect and provide temporary foundations and support.

1. Intent of mock-up is to demonstrate quality of workmanship and visual appearance.
2. If mock-up is not acceptable, rebuild mock-up until satisfactory results are achieved.
3. Retain mock-up during construction as a standard for comparison with completed work.
4. Do not alter or remove mock-up until work is completed or removal is authorized.

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1.6 PRE-INSTALLATION CONFERENCE

A. Convene a conference approximately two weeks before scheduled commencement of the work. Attendees shall include Architect, Contractor and trades involved. Agenda shall include schedule, responsibilities, critical path items and approvals.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Store and handle in strict compliance with manufacturer's written instructions and recommendations.

B. Protect from damage due to weather, excessive temperature, and construction operations.

1.8 PROJECT CONDITIONS

A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's recommended limits.

1.9 WARRANTY – STEEL FENCE

A. All BASTEEL steel fence components shall be warranted for fifteen (15) years within specified limitations by the manufacturer as stated in the BASTEEL product warranty. Warranty shall cover any defects in material finish, including cracking, chipping, red rust, chalking, peeling, and warping. Warranty shall also cover defects in workmanship or materials for the same period of time. All claims are subject to review for compliance with the terms and conditions of the full product warranty. In the event there shall be any apparent conflict between the terms contained in this summary and the terms contained in BASTEEL's detailed warranty, the terms contained in the detailed warranty shall control.

PART 2 PRODUCTS

2.1 ARCHITECTURAL FENCE SYSTEM

A. Basis of Design: Cambridge Architectural Fence System manufactured by BASTEEL Perimeter Systems.

1. Infill Pickets: 5 inches (127 mm) wide, liquid color-coated and roll formed from 0.017 inch (4.32 mm) thick full-hard 80,000 psi (551,580 kPa) yield strength steel in accordance with ASTM A653.

** NOTE TO SPECIFIER ** Select between the following coating options:

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a. Protective Coatings:

i) Under Coat: Hot dip galvanized zinc G-90 minimum.

ii) Top Coat: 2-coat, thermo-cured paint system.

1) First Coat: Primer.

2) Second Coat: Fluoropolymer containing 70 percent polyvinylidene difluoride by weight complying with physical properties and coating performance requirements of AAMA 621.

OR

i) Under Coat: Hot dip galvanized zinc G-90 minimum.

ii) Top Coat: 3-mil protective finish. Thermo-cured fluoropolymer powder coat.

a. Kynar 500 PVDF resin-based coating or equivalent.

1) Protection: Meet performance requirements of South Florida outdoor exposure of 45 degrees.

2) Color Retention per ASTM D2233: Less than five units.

3) Chalk Resistance Rating per ASTM D4214: Less than eight.

** NOTE TO SPECIFIER **

-Delete square post and top coat options not required

-Optional round posts may also be available to match existing fences. Contact the manufacturer for more information.

2. Square posts per ASTM A500: 4 inch (102 mm) high strength steel. Yield Strength: 50,000 psi (344738 kPa). Zinc coated per ASTM F1043 type B.

a. Protective Coatings:

** NOTE TO SPECIFIER ** Select between the following coating options

ii) Top Coat: 3-mil thermo-cured finish of super-durable polyester powder coat.

OR

ii) Top Coat: 3-mil thermo-cured finish of thermo-cured fluoropolymer powder coat, Kynar 500 PVDF resin-based coating or equivalent.

2. Square posts per ASTM A500: 6 x 6 inch (152 mm) steel. Hot dipped galvanized to minimum thickness of 1.8 oz. per sq ft (549 grams pe sq m), per side.

a. Protective Coatings:

** NOTE TO SPECIFIER ** Select between the following coating options

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ii) Top Coat: 3-mil thermo-cured finish of super-durable polyester powder coat.

OR

ii) Top Coat: 3-mil thermo-cured finish of thermo-cured fluoropolymer powder coat, Kynar 500 PVDF resin-based coating or equivalent.

3. C-Channel Rails and Brackets: Roll formed 14 gage steel per ASTM A653. Yield Strength: 50,000 psi (344738 kPa).

a. Under Coat: Protective galvanized G-90 minimum.

** NOTE TO SPECIFIER ** Delete top coat option not required.

b. Top Coat: 3-mil protective finish. Super-durable polyester powder coat.

OR

b. Top Coat: 3-mil protective finish. Thermo-cured fluoropolymer powder coat, Kynar 500 PVDF resin-based coating or equivalent.

4. Infill Fasteners per ANSI B1.13M: Series 302 stainless steel 6-Lobe pin-in security truss head, and full body shouldered.

a. Pull Out Tensile Strength: 1236 lbs (5,500 N).

b. Carriage Bolts and Nuts for Rails and Framing: Stainless steel.

c. Other Fasteners: Corrosion resistant.

** NOTE TO SPECIFIER ** Top caps are optional Delete if not required.

5. Top Cap: Manufactured to match infill panels using liquid color-coated and roll formed from 0.017 inch (4.32 mm) thick full-hard 80,000 psi (551,580 kPa) yield strength steel in accordance with ASTM A65.

6. Color Selection: (As determined by the Architect from Manufacturer's list)

** NOTE TO SPECIFIER ** Custom colors are available. Delete color options not required.

a. Bronze

b. Patrician Bronze

c. Desert Sand

d. Canyon Brown

e. Cinder Black

f. Polar White

g. Castle Rock Gray

h. Custom Color Selection: _____.

7. Fabrication: Provide the integral components; pickets, rails, framing, posts and accessories, of an engineered fence system as detailed in Manufacturer's shop drawings or as otherwise defined by Manufacturer.

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PART 3 EXECUTION

3.1 EXAMINATION

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

B. If substrate preparation is the responsibility of another installer, notify the Architect in writing of unsatisfactory preparation before proceeding.

3.2 PREPARATION

A. Consult with local jurisdictional authorities regarding specific utility locations. Arrange for a local underground utility locating 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 fence installation.

3.3 INSTALLATION

A. Install in accordance with manufacturer's instructions, approved submittals, and in proper relationship with adjacent construction.

B. Posts: Locate and space according to Manufacturer drawings. Set posts in suitable concrete footing designed and constructed for structural integrity in specific application.

1. Setting of posts by other methods 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.

C. Fence 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. Failure to properly clean, prime and finish paint exposed surfaces as described in the following steps will void the Manufacturer’s Warranty
    a. Carefully inspect fence and metal components during installation.
    b. Remove metal shavings from drilling or cutting of posts or metal fence components.

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c. Where drilling or cutting was deemed 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.
d. Apply two (2) thin coats of Manufacturer-supplied custom touch-up paint to such locations. Allow each coat to dry thoroughly.
e. Inspect work and verify each drilled or cut metal surface was properly treated, as described above.

3.4 FIELD QUALITY CONTROL

A. Field Inspection: Coordinate field inspection in accordance with appropriate sections in Division 01.

1. Inspect installation, post spacing, location dimensions and finishes.
2. Document preparatory, initial and follow-up inspection in Contractor's Test and Inspection Reports.
3. Contractor Test and Inspection Reports shall be available to Architect and Manufacturer upon request.

B. Manufacturer's Services: Coordinate manufacturer's services in accordance with appropriate sections in Division 01.

3.5 CLEANING AND PROTECTION

A. Clean products in accordance with the manufacturers recommendations.
B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION