

SECTION 32 31 00
ORNAMENTAL FENCE AND GATES

PART 1 - GENERAL

1.1 GENERAL PROVISIONS

Attention is directed to the CONTRACT AND GENERAL CONDITIONS and all Sections within DIVISION 1 - GENERAL REQUIREMENTS, which are hereby made part of this Section of the Specifications.

1.2 DESCRIPTION

- A. Work Included: Contractor shall provide all labor, materials and equipment necessary to complete the work of this Section, including but not limited to the following:
- B. Furnish and install the ornamental fence systems complete at the locations indicated in the Contract Drawings.
- C. Furnish and install the ornamental fence gate(s) of the size and as located in the Contract Drawings.
- D. Install "KNOX" lock box at location coordinated with Fire Marshal and COR. The box shall be obtained from Jackson County Fire District #3, 8333 Agate Road, White City, OR 97503 (541-826-7100). Apply in person and order the box. Include in the base bid an allowance of \$200 to apply/obtain box on behalf of the VA.

1.3 RELATED WORK

- A. The following items are not included in this Section and will be performed under the designated Sections:
 - 1. Section 033000: CAST-IN-PLACE-CONCRETE
 - 2. Section 312000: EARTH MOVING
 - 3. Section 01 81 11: SUSTAINABLE DESIGN REQUIREMENTS
 - 4. Section 08 71 00: DOOR HARDWARE

1.4 SYSTEM DESCRIPTION

The manufacturer shall supply the total industrial ornamental aluminum fence systems of their published design. The system shall include all components (i.e., pickets, rails, posts, gates and hardware) required.

1.5 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.

- B. All materials and equipment in the systems are to be new and of brands and types as shown on the Contract Drawings or as specified herein, or as accepted by the Government.

1.6 REFERENCE STANDARDS

- A. The publications listed below form a part of this specification and the work shall comply with pertinent standards of the latest editions as specified below or by industry standards unless designated otherwise herein.
- B. American Society for Testing and Materials (ASTM):
- B117-07a.....Practice for Operating Salt-Spray (Fog) Apparatus.
- B221-01.....Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles and Tubes.
- D523-08.....Test Method for Specular Gloss.
- D822-01(2006).....Practice for Conducting Tests on Paint and Related Coatings and Materials using Filtered Open-Flame Carbon-Arc Light and Water Exposure Apparatus.
- D1654-08.....Test Method for Evaluation of Painted or Coated Specimens Subjected to Corrosive Environments.
- D2244-07a.....Test Method for Calculation of Color Differences from Instrumentally Measured Color Coordinates.
- D2794-93(2004).....Test Method for Resistance of Organic Coatings to the Effects of Rapid Deformation (Impact).
- D3359-08.....Test Method for Measuring Adhesion by Tape Test.

1.7 SUBMITTAL

- A. Submit the following in accordance with Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES:
1. General: For each item specified in description of work or Part 2 - Products, provide information showing complete detail, location in the project, material and size of components, method of joining various components and assemblies, finish, and location, size and type of anchors. Mark items requiring field assembly for erection identification and furnish erection drawings and instruction.

ORNAMENTAL FENCE AND GATES

2. Provide templates and rough-in measurements as required.
3. Provide samples of full range of colors and finishes available for review and approval, prior to ordering.
4. Provide sample of gate locking/latching, gate retaining system, hinges and hardware colored as specified for all gates for review and approval, prior to ordering.
5. Special Condition at New East Entrance: Provide shop drawings at New East Entrance for required sections of fencing, posts and mow strips to be removed and new sections of fencing, posts and mow strips to connect existing fence to New East Entrance structures.

1.8 PRODUCT HANDLING AND STORAGE

- A. Upon receipt at the job site, all materials shall be checked to ensure that no damage occurred during shipping or handling. Materials shall be stored in such a manner to ensure proper ventilation and drainage, and to protect against damage, weather, vandalism and theft.

PART 2 - MATERIALS

2.1 MANUFACTURER

- A. The 6' and 42" height ornamental metal fencing systems shall match existing style and conform to Ameristar Echelon II, Genesis (3-rail) style G3, manufactured by Ameristar Fence Products, Inc., in Tulsa, Oklahoma or be approved equal.
- B. The fourteen (14') foot wide double swing ornamental metal gate system shall be manufactured as shown on the drawings and conform to Ameristar Echelon II, Genesis (3-rail) double swing gate or approved equal.
 1. Hinge System: Ameristar HU518 or be approved equal.
 2. Latch System: Ameristar DSN200 or be approved equal.
 3. Gate Retaining System: Both gate sections shall be equipped with cam-lock style retaining mechanism mounted on post. Match style of existing system used at main entrance. Paint to match gate color.
- C. The "Customized / Estate Style" twenty (20') foot wide double swing ornamental metal gate system to match existing shall be manufactured as shown on the drawings and conform to Ameristar Echelon II, Genesis (3-rail) double swing gate with quad flair or approved equal.
 1. Hinge System: Ameristar HU518 (Painted to match ornamental fencing color) or be approved equal.
 2. Latch System: Ameristar DSN200 or be approved equal.

ORNAMENTAL FENCE AND GATES

3. Gate Retaining System: Both gate sections shall be equipped with cam-lock style retaining mechanism mounted on post. Match style of existing system used at main entrance. Paint to match gate color.
- D. The "Customized / Estate Style" twenty eight (28') foot wide double swing ornamental metal gate system to match existing shall be manufactured as shown on the drawings and conform to Ameristar Echelon II, Genesis (3-rail) double swing gate with quad flair or approved equal.
 1. Hinge System: Ameristar HU518 (Painted to match ornamental fencing color) or be approved equal.
 2. Latch System: Ameristar DSN200 or be approved equal.
 3. Gate Retaining System: Both gate sections shall be equipped with cam-lock style retaining mechanism mounted on post. Match style of existing system used at main entrance. Paint to match gate color.

2.2 MATERIAL

- A. Aluminum material for fence framework (i.e., tubular pickets, rails and posts) shall conform to the requirements of ASTM B221. The aluminum extrusions for posts and rails (outer channel) shall be Alloy and Temper Designation 6005-T5. The aluminum extrusions for pickets and rail inner slide channels shall be Alloy and Temper Designation 6063-T5. [Aluminum material for fence framework (i.e., tubular pickets, rails and posts) shall conform to the requirements of ASTM B221. The aluminum extrusions for posts and rails (outer channel) shall be Alloy and Temper Designation 6005-T5. The aluminum extrusions for pickets and rail inner slide channels shall be Alloy and Temper Designation 6063-T5.]
- B. The manufactured framework shall be subjected to the manufacturers' thermal stratification coating process (high-temperature, in-line, multi-stage, and multi-layer) including, as a minimum, a six-stage pretreatment/wash and an electrostatic spray application of a polyester finish. The topcoat shall be a "no-mar" TGIC polyester powder coat finish with a minimum thickness of 0.0508 mm (2 mils). The color shall be Bronze. The manufacturer's framework shall be designed based upon the building code wind loading conditions applicable for the location of the site.
- C. Material for fence pickets shall be 25 mm (1") square x 1.5mm (0.062") thick extruded tubing. The cross-sectional shape of the rails shall conform to the manufacturer's concealed design system components with

ORNAMENTAL FENCE AND GATES

outside cross-section dimensions of 44mm (1.75") square. The top wall of the outer channel of the rail shall be 2.5mm (0.100") thick; the sidewalls shall be 3mm (0.120") thick for superior vertical load strength. The inner slide channel of the rail shall be 2mm (0.080") thick. Picket holes in the concealed design system rail shall be spaced 118mm (4.715") o.c. Picket retaining rods shall be 3mm (0.125") diameter galvanized steel. Fence posts and gate posts shall meet the minimum size requirements of the manufacturers' published Table for minimum sizes for posts for the specific fence system. High quality PVC grommets shall be supplied to seal all picket-to-rail intersections. Posts shall be a minimum of 62.5mm (2-1/2") square with a perimeter wall thickness of 2mm (0.0800) and a an interior reinforcing web thickness of 2mm (0.080").

- D. All fasteners shall be stainless steel. Bracket to rail attachments shall be made using specially designed one-way tamperproof security bolts with inverted "t-nuts". Bracket to post connections shall be made using self-drilling hex-head screws.
- E. Aluminum castings shall be used for all rings, post caps, finials, and miscellaneous adornments.

2.3 FABRICATION

- A. Pickets, rails and posts shall be pre-cut to specified lengths. ForeRunner™ or approved equal rails shall be pre-punched to accept pickets.
- B. The rail inner slide shall be fully inserted into the rail outer channel to form the raceway for the internal retaining rod. Grommets shall be inserted into the pre-punched holes in the rails, and pickets shall be inserted through the grommets so that pre-drilled picket holes align with the internal raceway of the two-part ForeRunner™ or approved equal rails. Retaining rods shall be inserted into each concealed design system rail so that they pass through the pre-drilled holes in each picket, thus completing the panel assembly.
- C. Completed panels shall be capable of supporting a 135 Kg (300 lb.) load (applied at midspan) without permanent deformation. Panels shall be biasable to a 25% change in grade.
- D. Gates shall be fabricated using ForeRunner™ or approved rail material and gate ends having the same outside cross-section (1.75" square) as the rail. Gate ends shall be 0.125" thick; gate pickets shall be 0.080" thick. All rail and upright intersections shall be joined by

ORNAMENTAL FENCE AND GATES

welding. All picket and rail intersections shall also be joined either by welding or by the same retaining rod process used for panel assembly.

PART 3 - EXECUTION

3.1 PREPARATION

- A. All new installations shall be laid out by the contractor in accordance with the construction plans.

3.2 FENCE INSTALLATION

- A. Fence post shall be spaced according to the manufacturer's layout tables for the fence being provided, and the brackets to be provided, plus or minus 12mm ($\frac{1}{2}$ "). For installations that must be raked to follow sloping grades, the post spacing dimension must be measured along the grade. Fence panels shall be attached to posts with brackets supplied by the manufacturer. Posts shall be set in concrete footers having a minimum depth of 900mm (36"), or as indicated in the Contract Drawings, whichever is greater. (Note: In some cases, local restrictions of freezing weather conditions may require a greater depth). The "Earthwork" and "Concrete" sections of this specification shall govern material requirements for the concrete footer. Posts setting by other methods such as plated posts or grouted core-drilled footers are permissible only if shown by engineering analysis to be sufficient in strength for the intended application.
- B. Fence posts that terminate at front entrance columns shall be surface mounted to the top of the spread footing as shown on the drawings.
- C. Existing fencing at East Entrance requires removal of existing posts, panels and mow strip as required to provide for the new entrance structures as indicated on the contract documents. Existing fence sections and posts shall be removed at full panels locations to allow for a minimum 4' long new panel to span from the existing fence post to new entrance structure as indicated on the contract documents.

3.3 FENCE INSTALLATION MAINTENANCE

- A. When cutting/drilling rails or posts adhere to the following steps to seal the exposed surfaces; 1) Remove all metal shavings from cut area. 2) Apply custom finish paint matching fence color. Failure to seal exposed surfaces per steps 1 & 2 above will negate warranty. Manufacturer's spray cans or paint pens shall be used to prime and finish exposed surfaces; it is recommended that paint pens be used to

ORNAMENTAL FENCE AND GATES

prevent overspray. The use of parts or components, other than those from the fence manufacturer, will negate the manufactures' warranty.

3.4 GATE INSTALLATION

- A. Gate posts shall be spaced as indicated on the Contract Drawings, according to the manufacturer's gate drawings, approved during submittal processing, allowing the proper fit with gate leaf dimensions and gate hardware selected. Type and quantity of gate hinges shall be based upon the application; weight, height, and number of gate cycles. The gate manufacturer's gate drawings shall identify the necessary gate hardware required for the application. Gate hardware shall be provided by the manufacturer of the gate and shall be installed per manufacturer's recommendations.

3.5 CLEANING

- A. Contractor shall clean the jobsite of excess materials; post-hole excavations shall be cleaned, and debris removed or scattered uniformly away from posts, so as to not disturb the adjoining topsoil and turf growth.

3.6 GENERAL

- A. Disposal of Waste:
1. The Contractor shall remove debris and waste resulting from the work daily from the site. The material shall not be allowed to accumulate.
 2. All material removed (crushed stone, broken concrete, masonry rubble, and similar material) shall be disposed of off site.
 3. Disposal area off-site shall be the responsibility of the Contractor. All fees, permits and other cost for disposal, shall be arranged for and paid for by the Contractor.
 4. The Contractor shall comply with all local and state laws and regulations governing hauling, and the prevention of spillage on streets and adjacent areas.

3.7 PROTECTION

- A. Protect from damage of operations under this Section adjoining properties, sidewalks, driveways and curbs to remain.
- B. All existing roads, drives, walks, curbing, utility poles, underground utility lines, etc., except those to be removed, which are damaged by Contractor in the execution of this Contract, shall be restored to former condition by the Contractor to the satisfaction of the Government at no change in the contract price.

ORNAMENTAL FENCE AND GATES

Eagle Point National Cemetery
Cemetery Expansion

Project No. 906CM3012
10-31-14

- - - END - - -

ORNAMENTAL FENCE AND GATES

32 31 00 - 8