

SECTION 32 31 53
PERIMETER SECURITY FENCES AND GATES

PART 1 - GENERAL

1.1 DESCRIPTION

This work consists of all labor, materials, and equipment necessary for furnishing and installing perimeter security fences, gates and accessories in conformance with the lines, grades, and details as shown.

1.2 RELATED WORK

- A. Finish Grading: Sections 31 20 11, EARTH MOVING (SHORT FORM.
- B. Card readers and biometric devices: Section 28 13 11, PHYSICAL ACCESS CONTROL SYSTEMS.
- C. Chain link enclosures and barbed wire barriers: Section 32 31 13, CHAIN LINK FENCES AND GATES.

1.3 MANUFACTURER'S QUALIFICATIONS

- A. Fence, gates, and accessories shall be products of manufacturers regularly engaged in manufacturing items of type specified.

1.4 SUBMITTALS

- A. In accordance with Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA AND SAMPLES, furnish the following:
 - 1. Manufacturer's Literature and Data: Fencing, gates and all accessories.
- B. Shop Drawings for sliding gates.
- C. Certification that fence alignment meets requirements of contract documents.

1.5 APPLICABLE PUBLICATIONS

- A. The publications listed below form a part of this specification to the extent referenced. The publications are referenced in the text by the basic designation only.

SPEC WRITER NOTE: Delete publications
which do not apply to the project.

- B. American Society for Testing and Materials (ASTM):
 - A853-04.....Steel Wire, Carbon, for General Use
 - C94/C94M-07.....Ready-Mixed Concrete
 - F626-96a(2003).....Fence Fittings
 - F1083-06.....Pipe, Steel, Hot-Dipped Zinc-Coated
(Galvanized) Welded, for Fence Structures.

PART 2 - PRODUCTS

2.1 GENERAL

2.2 PERIMETER SECURITY FENCE

- A. The perimeter security fence shall be an aluminum palisade style fence system. The system shall include all components such as pickets, pales, mesh, fabric, rails, posts, gates and hardware required.
 - 1. Metal palisade style fence system.
- B. Heights:
 - 1. Horizontal members that might be used as foot- or hand-holds shall be spaced at a minimum 6 feet (1800 mm) apart.
- C. Gates:
 - 1. Gates shall be designed to meet the same forced entry and anti-climb characteristics as the other portions of the fence.
 - 2. Provide motorized sliding gates for vehicle access with card reader.
 - 3. Provide hinged pedestrian gates with electric strike and card reader.
- F. Finishes:
 - 1. Fence shall be black powder coated to match the existing fencing in front of Building 21.

2.3 ACCESSORIES

Accessories as necessary; caps, rail and brace ends, wire ties or clips, braces and tension bands, tension bars, truss rods, and miscellaneous accessories conforming to ASTM F626.

2.4 CONCRETE

ASTM C94/C94M, using 3/4 inch (19 mm) maximum-size aggregate, and having minimum compressive strength of 3000 psig (25 mPa) at 28 days. Non-shrinking grout shall consist of one part Portland cement to three parts clean, well-graded sand, non-shrinking grout additive and the minimum amount of water to produce a workable mix.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install fence by properly trained crew, on previously prepared surfaces, to line and grade as shown. Install fence in accordance with the manufacturer's printed installation instructions, except as modified herein or as shown. Maintain all equipment, tools, and machinery while on the project in sufficient quantities and capacities for proper installation of posts, pickets,, rails, pales, and accessories.

- B. Engage the services of a Registered Professional Land Surveyor or Registered Civil Engineer specified in Section 01 00 00, GENERAL REQUIREMENTS, to stake out and certify that the fence alignment meets the requirements as shown.

3.2 EXCAVATION

Excavation for concrete-embedded items shall be of the dimensions shown, except in bedrock. If bedrock is encountered before reaching the required depth, continue the excavation to the depth shown or 18 inches (450 mm) into the bedrock, whichever is less, and provide a minimum of 2 inches (50 mm) larger diameter than the outside diameter of the post. Clear loose material from post holes. Grade area around finished concrete footings as shown and dispose of excess earth as directed by the COR.

3.3 POST SETTING

Install posts plumb and in alignment. Set post in concrete footings of dimensions as shown, except in bedrock. Thoroughly compact concrete so as it to be free of voids and finished in a slope or dome to divert water running down the post away from the footing. Straight runs between braced posts shall not exceed the manufacturer's requirements. Install posts in bedrock with a minimum of one inch (25 mm) of non-shrinking grout around each post. Thoroughly work non-shrinking grout into the hole so as to be free of voids and finished in a slope or dome. Cure concrete and grout a minimum of 72 hours before any further work is done on the posts.

3.4 POST CAPS

Fit all exposed ends of post with caps. Provide caps that fit snugly and are weathertight. Where top rail is used, provide caps to accommodate the top rail. Install post caps as recommended by the manufacturer and as shown.

3.5 TOP RAILS AND BOTTOM RAILS

Install rails before installing pickets. Provide suitable means for securing rail ends to terminal and intermediate post. The rails shall have expansion couplings (rail sleeves) spaced as recommended by the manufacturer.

3.6 ACCESSORIES

Supply accessories (post braces, truss rods, and miscellaneous accessories), as required and recommended by the manufacturer, to ensure complete installation.

3.7 GATES

Install gates plumb, level, and secure for full opening without interference. Set keepers, stops and other accessories into concrete as required by the manufacturer and as shown. Test gates, hardware, locking mechanisms and releases for proper operation. Adjust and lubricate as necessary.

3.8 FINAL CLEAN-UP

Remove all debris, rubbish and excess material from the station.

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