

SECTION 323123 - ORNAMENTAL FIBERGLASS FENCES

PART 1 - GENERAL

1.1 RELATED REQUIREMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
 - 1. Manufactured ornamental fiberglass fence.
 - 2. Supply and place all accessory items as required by the contract.
- B. Related Sections include the following:
 - 1. Section 321313 "Concrete Paving."

1.3 DEFINITIONS

- A. AFA: American Fence Association; the national association for companies in the fence industry. AFA publishes general standards on installing all kinds of fence.
- B. Manufacturing Standards: According to the manufacturer of Fiberfence suggested installation techniques particular to fiberglass fencing.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product:
 - 1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for the following:
- B. Shop Drawings: For each type of fence and gate assembly.
 - 1. Include plans, elevations, sections, details, and attachments to other work.
 - 2. Include accessories, hardware, gate operation, and operational clearances.
 - 3. Gate Operator: Show locations and details for installing operator components, switches, and controls. Indicate motor size, electrical characteristics, drive arrangement, mounting, and grounding provisions.
 - 4. Wiring Diagrams: For power, signal, and control wiring.
- C. Samples for Initial Selection: For each type of factory-applied finish.
- D. Samples for Verification: For each type of component with factory-applied finish, prepared on Samples of size indicated below:
 - 1. In 6 inch lengths showing the full range of colors available for components and on full-sized units for accessories.

1.5 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For firms and persons to demonstrate capabilities and experience. Include lists of complete projects with project names and addresses, names and addresses of architects and owners, and other information specified.
- B. Product Certificates: Signed by manufacturer(s) certifying that products furnished comply with requirements.
- C. Provide additional data and / or samples as required by the Architect.

1.6 QUALITY ASSURANCE

- A. Installer Qualifications: An experienced installer who has completed privacy and board on board style fencing as well as ornamental style fencing and associated gates similar in design, and to the extent to those indicated for this Project and whose work has resulted in construction with a record of successful in-service performance.
- B. Single Source: Obtain each color, grade, finish, type, and variety of components for fences and gates from one source with the resources to provide each type of fences and gates of consistent quality in appearance and physical properties.
- C. Testing Agency Qualifications: For testing fence grounding; member company of NETA or an NRTL.
 - 1. Testing Agency's Field Supervisor: Certified by NETA to supervise on-site testing.
- D. Mockups: Build mockups to set quality standards for fabrication and installation.

1.7 FIELD CONDITIONS

- A. Field Measurements: Verify layout information for fences and gates show on Drawings in relation to property survey and existing structures. Verify dimensions by field measurements.

PART 2 - PRODUCTS

- 2.1 MANUFACTURED ORNAMENTAL FIBERGLASS FENCING
- A. Provide manufactured fencing and configurations indicated.
 - B. Basis-of-Design: Single Sourced fiberglass fencing products manufactured by **F&F Composite group, Inc. d/b/a Fiberfence, in Keller, Texas (817) 379-4411 or www.Fiberfence.com**:
 - 1. Provide fence system:
 - a. 2 by 3/4-inch rectangular fiberglass tubing.
 - b. 2 by 2-inch square tubing.
 - c. 1-inch diameter round fiberglass vertical pickets.
 - d. 8-ft. wide panels.
 - e. Fence height: 6 ft.
 - C. Materials:
 - 1. Fiberglass: Mechanical Properties — Tensile Modulus - ASTM D-638 (PSI)
 - 2. 2.5x106
 - 3. ASTMD -790 (PSI) 30,000
 - 4. Flexural Modulus - ASTMD-790 (PSI) 2.8 x 106
 - 5. Compressive Strength - ASTM D-695 (PSI) 30,000
 - 6. Compressive Modulus - ASTM D-695 (PSI) 2.5 x 106
 - 7. Izod Impact Strength — ft-lbs/in-25
 - 8. Barcol hardness — 45
 - 9. Coef. Thermal Expansion - ASTM D-696 (in/in/degree F) 4.4 106
 - 10. Pickets: 1" diameter x 6' height
 - 11. Fiberglass tubing: 2" x 3/4" x 8' long
 - 12. Square tubing: 2" x 2" x 8' long
 - 13. Posts: 3" x 3" x 8'-0" height
 - 14. Fasteners and Accessories: Provide manufacturer's standard color matching tamper resistant fasteners and installation accessories.
 - 15. Gate Opening Hardware: Manufacturer's standard gate hardware and locking.
 - D. Finish:
 - 1. Color: As selected from the manufacturer's available colors.
 - 2. Coating: Specially formulated bonding coating by Sherwin-Williams.
 - a. Option: Manufacturer's proprietary patented powder coating finish.
 - 1) Color: Black.
 - E. Fabrication:
 - 1. 8'-0" length fabricated fence panels.
 - 2. Gates and fence panel pickets spaced at 1" nominal on center.
 - 3. Fence panels to support 400 plus pound load at mid span without permanent deflection.
 - 4. Fabricate swing gates in 5'-0" widths and with appropriate hinge and locking.

PART 3 - EXECUTION

- 3.1 EXAMINATION
- A. Examine areas and conditions, with Installer preset, for compliance with requirements for site clearing, earthwork, pavement work, and other conditions affecting performance.
 - 1. Do not begin installation before final grading is completed.
 - B. Proceed with installation only after unsatisfactory conditions have been corrected.
- 3.2 PREPARATION
- A. Stake locations of fence lines, gates and terminal posts. Indicate locations of utilities, lawn sprinkler system, underground structures, benchmarks, and property monuments.
- 3.3 INSTALLATION
- A. Install fencing to comply with manufacturer's printed instructions and more stringent requirements specified.
 - 1. Install fencing on indicated lines.
 - B. Excavation. Drill or hand excavate holes for posts to diameters and spacing indicated, in firm, undisturbed, or compacted soil.
 - C. Post Setting. Hand-excavate holes for post foundations in firm, undisturbed or compacted soil. Set all posts in concrete footings. Protect portion of posts above ground from concrete splatter. Place concrete around posts and vibrate or tamp for consolidation. Using mechanical devices to set line posts is not

permitted. Verify that posts are set plumb, aligned, and at correct height and spacing, and hold in position during placement and finishing operations until concrete is sufficiently cured.

1. Exposed Concrete Footings: Extend concrete 2 inches (50mm) above grade, smooth, and shape to shed water. (use of forms).

3.4 SECURITY FENCE AND PANEL INSTALLATION

- A. Install fiberglass fencing according to manufacturer's and industry standards.
 1. Install panels level, plumb and secure. Attachment hardware to be tamper-resistant or concealed. Adjust anchors for secure installation where necessary.

3.5 ADJUSTING AND COMPLETION

- A. Gate: Adjust gates to operate smoothly, easily, and quietly, free from binding, warp, excessive deflection, distortion, non-alignment, misplacement, disrupting, or malfunction throughout the entire operational range. Confirm that latches and locks engage accurately and securely without forcing or binding.
- B. Lubricate operating hardware and other moving parts.

3.6 DEMONSTRATION

- A. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate and maintain fiberglass fences and gates.

END OF SECTION 323123