

SECTION 02826 - METAL SWING GATES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary and Division 1 specification sections apply to this Section.

1.2 SUMMARY

- A. Section Includes:
 - 1. Swing gates.
 - 2. Gate operators, including controls.

1.3 RELATED SECTIONS

- A. Division 5 Sections.
- B. Division 16 Sections.

1.4 SUBMITTALS

- A. Coordinate Gate submittal with gate post submittals in Division 5 section.
- B. Product Data: For each type of product indicated.
- C. Shop Drawings: For gates. Include plans, elevations, sections, details, and attachments to other work.
 - 1. Wiring Diagrams: For power, signal, and control wiring.
- D. Samples: For each fence material and for each color specified.
- E. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency, for decorative metallic-coated steel tubular picket fences, including finish, indicating compliance with referenced standard.
- F. Maintenance Data: For gate operators to include in maintenance manuals.

1.5 QUALITY ASSURANCE

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

- B. UL Standard: Provide gate operators that comply with UL 325.
- C. Emergency Access Requirements: Comply with requirements of authorities having jurisdiction for automatic gate operators on gates that must provide emergency access.

PART 2 - PRODUCTS

2.1 ALUMINUM

- A. Extrusions: ASTM B 221, Alloy 6063-T5.
- B. Tubing: ASTM B 429, Alloy 6063-T6.

2.2 MISCELLANEOUS MATERIALS

- A. Concrete: Normal-weight concrete complying with requirements in Division 3 Section "Cast-in-Place Concrete" with a minimum 28-day compressive strength of 3000 psi, 3-inch slump, and 1-inch maximum aggregate size.
- B. Nonshrink Grout: Factory-packaged, nonstaining, noncorrosive, nongaseous grout complying with ASTM C 1107 and specifically recommended by manufacturer for exterior applications.

2.3 GROUNDING MATERIALS

- A. Grounding Conductors: Bare, solid wire for No. 6 AWG and smaller; stranded wire for No. 4 AWG and larger.
 - 1. Material above Finished Grade: Aluminum.
 - 2. Material on or below Finished Grade: Copper.
- B. Grounding Connectors and Grounding Rods: Comply with UL 467.

2.4 SWING GATES

- A. Basis of Design Manufacturer and Product: Tymetal Corp; modified "Fortress Heavy Duty Swing Gate – Ornamental."
- B. Gate Configuration: Double leaf.
- C. Gate Frame Height: As indicated.
- D. Gate Opening Width: As indicated.
- E. Aluminum Frames: Extruded aluminum channel/tubes.
 - 1. Top member: 3 inches x 5 inches.
 - 2. Bottom member: 2 inches x 5 inches.

3. Vertical members:
 - a. At ends of the opening portion: 2 inches x 2 inches.
 - b. At intermediate vertical members: 1 inch x 2 inches.
 - 1) Spacing: Less than 50% of gate frame height.
 - F. Diagonal Bracing: Fabricate "X" bracing throughout gate with 3/16 inch minimum diameter stainless steel aircraft cable to provide additional vertical adjustment.
 - G. Posts: As specified and installed in Section 05500 and as indicated on Drawings.
 - H. Frame Corner Construction: Welded.
 - I. Additional Rails: Provide as indicated, complying with requirements for fence rails.
 - J. Infill: Comply with requirements indicated on Drawings.
 - K. Picket Size, Configuration, and Spacing: Comply with requirements indicated on Drawings.
 - L. Hardware: Latches permitting operation from both sides of gate, hinges, and keepers for each gate leaf more than 5 feet wide. Provide center gate stops and cane bolts for pairs of gates. Fabricate latches with integral eye openings for padlocking; padlock accessible from both sides of gate.
 - M. Spring Hinges: BHMA A156.17, Grade 1, suitable for exterior use.
 1. Function: 320 - Gate spring pivot hinge. Adjustable tension.
 2. Material: Malleable iron.
 - N. Hinges: BHMA A156.1, Grade 1, suitable for exterior use.
 1. Function: 39 - Full surface, triple weight, antifriction bearing.
 2. Material: Metal compatible with gate.
 3. Mounting Plate: Configuration necessary for mounting locks. Fabricate from 1/8-inch- thick, metal plate.
 - O. Cane Bolts: Provide for inactive leaf of pairs of gates. Fabricated from diameter, round 5/8 inch steel bars, hot-dip galvanized after fabrication. Finish to match gates. Provide galvanized-steel pipe strikes to receive cane bolts in both open and closed positions.
 - P. Finish exposed welds to comply with NOMMA Guideline 1, Finish #2 - completely sanded joint, some undercutting and pinholes okay.
 - Q. Aluminum Finish: Baked enamel or powder coating.
- 2.5 GATE OPERATORS
- A. General: Provide factory-assembled automatic operating system designed for gate size, type, weight, and operation frequency. Provide operation control system with

characteristics suitable for Project conditions, with remote-control stations, safety devices, and weatherproof enclosures; coordinate electrical requirements with building electrical system.

1. Provide operator with UL approval.
 2. Provide controllers, electrical devices, and wiring that comply with requirements specified in Division 16 Sections.
- B. Motors: Comply with NEMA designation, temperature rating, service factor, enclosure type, and efficiency requirements for motors specified in Division 11 Section "Common Motor Requirements for Equipment."
1. Motor Sizes: Minimum size as indicated. If not indicated, large enough so driven load will not require motor to operate in service factor range above 1.0.
- C. Gate Operators: Post mounted and as follows:
1. Hydraulic Swing Gate Operators:
 - a. Duty: Heavy duty, commercial/industrial.
- D. Remote Controls: Electric controls separated from gate and motor and drive mechanism, with NEMA ICS 6 enclosure for recessed or flush mounting, and with space for additional optional equipment. Provide the following remote-control device(s):
1. Control Station: To be determined by Owner.
- E. Obstruction Detection Devices: Provide each motorized gate with automatic safety sensor(s). Activation of sensor(s) causes operator to immediately reverse gate in both opening and closing cycles and hold until clear of obstruction.
- F. Accessories:
1. Warning Module: AudioVisual, ADA/ABA-compliant, strobe-light alarm.
 2. Battery Backup System: Battery-powered drive and access-control system.
 3. Instructional, Safety, and Warning Labels and Signs: According to UL 325.
- 2.6 ALUMINUM FINISHES
- A. Baked-Enamel or Powder-Coat Finish: AAMA 2603 except with a minimum dry film thickness of 2 mils.
1. Color and Gloss: As selected by Architect from manufacturer's full range.

PART 3 - EXECUTION

3.1 GATE INSTALLATION

- A. Install gates according to manufacturer's written instructions, level, plumb, and secure for full opening without interference. Attach hardware using tamper-resistant or concealed means. Install ground-set items in concrete for anchorage. Adjust hardware for smooth operation and lubricate where necessary.

3.2 GATE OPERATOR INSTALLATION

- A. General: Install gate operators according to manufacturer's written instructions, aligned and true to fence line and grade.
- B. Concrete Bases: Cast-in-place or precast concrete, depth not less than 12 inches , dimensioned and reinforced according to gate operator component manufacturer's written instructions and as indicated on Drawings.
- C. Comply with NFPA 70 and manufacturer's written instructions for grounding of electric-powered motors, controls, and other devices.

3.3 GROUNDING AND BONDING

- A. Gates and Other Fence Openings: Ground fence on each side of opening. Bond metal gates to gate posts.
- B. Grounding Method: At each grounding location, drive a grounding rod vertically until the top is 6 inches below finished grade. Connect rod to fence with No. 6 AWG conductor. Connect conductor to each fence component at the grounding location.
- C. Bonding Method for Gates: Connect bonding jumper between gate post and gate frame.
- D. Connections: Make connections so possibility of galvanic action or electrolysis is minimized. Select connectors, connection hardware, conductors, and connection methods so metals in direct contact will be galvanically compatible.
- E. Bonding to Lightning-Protection System: If fence terminates at lightning-protected building or structure, ground the fence and bond the fence grounding conductor to lightning-protection down conductor or lightning-protection grounding conductor, complying with NFPA 780.

END OF SECTION 02826