Davis Door Service, Inc.
2021 S. Grand St. Seattle, WA 98144-4526,
Phone# 206-324-9101 • Fax# 206-324-9104,
Email: info@davisdoor.com
Website: https://davisdoorproducts.com/

DIVISION 08 - OPENINGS

CSI SECTION 083613 - SECTIONAL DOORS

PART 1 GENERAL

1.1 SUMMARY

A. Provide a complete **Sectional Door System**, including all components required for a fully functional installation.

B. Work includes fabrication, factory finishing and calibration, delivery, and installation of the complete gate assembly as indicated on the drawings and specified herein.

C. Coordinate work of this Section with related trades, including concrete foundations, reinforcement, electrical power supply, and control wiring.

D. System shall be suitable for exterior industrial or commercial applications and designed for high-cycle, low-maintenance operation consistent with products manufactured by Davis Door Products.

2.1 RELATED SECTIONS

A. Section 033000 "Cast-In-Place Concrete" for prepared openings in concrete, including requirements for placement of anchors in concrete construction.

B. Section 042000 "Unit Masonry Assemblies" for prepared opening in masonry, including requirements for placement of anchors in masonry construction.

C. Section 055000 "Metal Fabrications" for miscellaneous steel supports for sectional door openings and equipment.

D. Section 060530 "Miscellaneous Rough Carpentry" for wood framing and blocking for door opening.

E. Section 111200 "Parking Control Equipment" for parking control equipment interlocked to sectional doors.

F. Division 26 Electrical sections for raceways and boxes and wiring requirements for electrical service to door operator.

3.1 REFERENCES

A. ANSI/DASMA 108-2017 – Standard Method for Testing Sectional Garage Doors, Rolling Doors and Flexible Doors: Determination of Structural Performance Under Uniform Static Air Pressure Difference.

B. ASTM F2200 – Standard Specification for Automated Vehicular Gate Construction.

C. ASTM A229 - Standard Specification for Steel Wire, Quenched and Tempered for Mechanical Springs.

D. ASTM B209 – Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate.

E. UL 325 - ANSI/CAN/UL Standard for Door, Drapery, Gate, Louver, and Window Operators and Systems.
F. ASTM A 653 - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
G. ASTM A 924 - Standard Specification for General Requirements for Steel Sheet, Metallic-Coated by the Hot-Dip Process.
H. ASTM B 221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes.
I. NFPA 70 – National Electrical Code® (NEC)
J. NEMA ICS 1 - Industrial Control and Systems: General Requirements
K. NEMA ICS 2 - Industrial Control and Systems: Controllers, Contactors, and Overload Relays Rated Not More Than 2000 Volts AC or 750 Volts DC
L. NEMA ICS 6 - Industrial Control and Systems: Enclosures

4.1 DESIGN / PERFORMANCE REQUIREMENTS

A. Power Requirement options: [Specifier to choose one option]
1. 120 Volts, Single Phase, 60Hz, 20A
2. 230 Volts, Single Phase, 60Hz, 20A
3. 230 Volts, Three Phase, 60Hz, 20A
4. 460 Volts, Three Phase, 60Hz, 20A

B. Standard-duty doors shall be furnished with components capable of achieving cycle ratings up to 250,000 operations. Heavy-duty or oversized doors may not be capable of achieving this rating due to increased mass and operating loads; provide components with the maximum feasible cycle rating appropriate to the specific door configuration.

C. Sectional doors shall comply with performance requirements of this Section without failure due to defective manufacture, fabrication, installation, or other defects in construction.

D. Wind load Design: The gate assembly shall be designed and constructed to resist the design wind loads and deflection limits indicated on the Contract Documents**.**

5.1 SUBMITTALS

A. General: Submit in accordance with 01 33 00 – Submittal Procedures.

6.1 ACTION SUBMITTALS

A. Product Data:
1. Manufacturer’s standard construction details, materials, dimensions, profiles of door sections, and finishes.
2. Operating characteristics, electrical characteristics, rated capacities, and included accessories.

Specifier: Keep the “Shop Drawings” section when the product data does not fully show the required installation details.

B. Shop Drawings:
1. Plans, elevations, sections, and attachment details.
2. Opening dimensions, required tolerances, and installation clearances.
3. Connection details and field-assembly requirements.
4. Power and control wiring diagrams.

7.1 INFORMATIONAL SUBMITTALS

A. Sample Warranty: Submit manufacturer's standard warranty for review.

8.1 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data - Include operation instructions, recommended maintenance procedures, cleaning recommendations, and replacement parts information.

9.1 QUALITY ASSURANCE

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

B. Installer Qualifications: Authorized representative of the manufacturer with minimum five years documented experience.

C. Products Requiring Electrical Connection: Listed and classified by Underwriters Laboratories, Inc. acceptable to authority having jurisdiction as suitable for purpose specified.

D. Compliance:

1. Gate operator and control system shall comply with UL 325 – Standard for Door, Drapery, Gate, Louver, and Window Operators and Systems.
2. Gate construction shall comply with ASTM F2200 – Standard Specification for Automated Vehicular Gate Construction.
3. Electrical installation shall conform to NFPA 70 – National Electrical Code (NEC).
4. All applicable local building and electrical codes shall apply.

E. Single-Source Responsibility - Provide the complete gate system—including doors, panels, gate structure, operators, controls, safety devices, and accessories—from a single manufacturer. The primary manufacturer shall assume responsibility for the overall system performance, and integration. Secondary components shall be products approved or recommended by the primary manufacturer.

10.1 DELIVERY, STORAGE, AND HANDLING

A. Protect materials from exposure to moisture until ready for installation.

B. Store materials in a dry location

11.1 PROJECT CONDITIONS

A. Pre-Installation Conference: Convene a pre-installation conference just prior to commencement of field operations, to establish procedures to maintain optimum working conditions and to coordinate this work with related and adjacent work.

12.1 WARRANTY

A. Special Warranty: Manufacturer's standard written warranty, in which the manufacturer agrees to repair or replace sectional door components that fail in materials or workmanship within the specified warranty period.

1. Failures include, but are not limited to, the following:

a. Structural failures, including excessive deflection.
b. Faulty operation of hardware.
c. Deterioration of metals, finishes, or other materials beyond normal weathering and use, including rust-through.
d. Delamination of exterior or interior facing materials.

B. Warranty Period: Manufacturer shall provide a limited warranty covering all parts and components for a period of two (2) years from the date of Substantial Completion.

13.1 DELIVERY, STORAGE, AND HANDLING

A. Protect materials from exposure to moisture until ready for installation.

B. Store materials in a dry location.

14.1 PROJECT CONDITIONS

A. Pre-Installation Conference: Convene a pre-installation conference just prior to commencement of field operations, to establish procedures to maintain optimum working conditions and to coordinate this work with related and adjacent work.

PART 2 PRODUCTS

1.2 MANUFACTURER

A. Acceptable Manufacturer:

1. Davis Door Service Inc., 2021 S. Grand St. Seattle, WA 98144-4526
   Phone# 206-324-9101 • Fax# 206-324-9104 • Email: info@davisdoor.com
   Website: https://davisdoorproducts.com/

B. Substitutions: Not permitted.

2.2 SECTIONAL GATE CONSTRUCTION

A. DOOR SECTIONS

1. Aluminum Door Section Frame: Extruded-aluminum stile and rail members 2 by 2 by 1/8 inch, with end stiles 2 by 6 by 1/8 inch; members joined by welding full height of door section;
   a. Aluminum: ASTM B221 tubing 6063-T5; minimum thickness 0.065 inch for door section
   b. 2 inches deep, and as required to comply with requirements.
   c. Reinforce panel sections with a continuous horizontal tubular member to reduce deflection under load.
2. Aluminum Door Section Cladding: ASTM B209, with the following cladding: [Choose one from standard offering]:
   a. Solid Aluminum Sheet, .090” Thick, 3003-H14
   b. ¾ No.125 Flat Exp Alum Sheet, 1/8” Thick 5005-H34
   c. ½ Round 11/16 Stag Perf Alum,1/8” Thick, 3003-H14
   d. ¼” Impact Resistant Polycarbonate— clear or tinted as specified.

   [Specifier Note: Additional aluminum sheet patterns and perforation styles are available from McNICHOLS® upon request]

3.2 TRACKS, SUPPORTS, AND ACCESSORIES

A. Tracks: Manufacturer's standard, galvanized-steel track system of configuration indicated on Drawings, sized for door size and weight, designed for lift type indicated and clearances indicated on Drawings, provide required brackets, bracing, and reinforcement to ensure rigid support of ball-bearing roller guides for required door type, size, weight, and loading.

1. Galvanized Steel: ASTM A653/A653M, minimum G60 zinc coating.
2. Slope tracks at an angle from vertical or design tracks to ensure tight closure at jambs when door unit is closed.

3. Track Reinforcement and Supports: Galvanized-steel members to support track without sag, sway, and vibration during opening and closing of doors.
    a. For Vertical Track: Intermittent, jamb brackets attached to track and attached to wall.
    b. For Horizontal Track: Continuous reinforcing angle from curve in track to end of track, attached to track and supported at points by laterally braced attachments to overhead structural members.

[Specifier note: Acoustic Isolator is optional section]

B. Acoustic Isolators: Grommeted bridge-bearing neoprene bolt isolator and neoprene waffle pad mounted between track mounting angles and jamb.

4.2 HARDWARE

A. General: Heavy-duty, corrosion-resistant hardware, with galvanized, or other corrosion-resistant fasteners, to suit door type

B. Hinges: Heavy-duty, galvanized-steel hinges of not less than 0.079-inch-nominal coated thickness at each end stile and at each intermediate stile. Attach hinges to door sections through stiles and rails with bolts and lock nuts or lock washers and nuts.

C. Rollers: Heavy-duty rollers with steel ball-bearings, mounted with varying projections to suit slope of track. Extend roller shaft through both hinges where double hinges are required. Provide 3-inch-diameter roller tires for 3-inch-wide track and 2-inch-diameter roller tires for 2-inch-wide track.

5.2 COUNTERBALANCE MECHANISM

A. Torsion Spring: Counterbalance mechanism consisting of adjustable-tension torsion springs fabricated from steel-spring wire complying with ASTM A229/A229M, mounted on torsion shaft made of steel tube or solid steel.

B. Cable Drums and Shaft for Doors: Cast-aluminum or gray-iron casting cable drums mounted on torsion shaft and grooved to receive door-lifting cables as door is raised. Mount counterbalance mechanism with manufacturer's standard ball-bearing brackets at each end of torsion shaft.

C. Cables: Galvanized-steel, multi-strand, lifting cables with cable safety factor of at least 7 to 1.

D. Bracket: Provide anchor support bracket as required to connect stationary end of spring to the wall and to level the shaft and prevent sag.

6.2 ELECTRIC DOOR OPERATORS

A. General: Electric door operator assembly of size and capacity recommended and provided by door manufacturer for door and operation cycles requirement specified, with electric motor and factory-prewired motor controls, starter, gear-reduction unit, solenoid-operated brake, clutch, control stations, control devices, integral gearing for locking door, and accessories required for proper operation.
    1. Comply with NFPA 70.
    2. Provide control equipment conforming to NEMA ICS 1, ICS 2, and ICS 6. Control circuits shall comply with NFPA 70 requirements for Class 2 circuits and shall be limited to a maximum of 24 volts AC or DC.

3. Usage Classification: Electric operator and components capable of operating for not less than number of cycles per hour indicated for each door.

B. Door-Operator Type: Unit consisting of electric motor, gears, pulleys, belts, sprockets, chains, and controls needed to operate door and meet required usage classification.
   1. Trolley: Trolley operator mounted to ceiling above and to rear of door in raised position and directly connected to door with drawbar.
   2. Basis of Door Operator Design:
      a. Liftmaster HCTDCU – Standard doors under 12ft opening height.
      b. Liftmaster Gearhead Trolley or PowerMaster Model “GT” – Heavy doors
   3. Motor Size: Large enough to start, accelerate, and operate door in either direction from any position, at a speed not less than 8 in./sec. and not more than 12 in./sec., without exceeding nameplate ratings or service factor.
   4. Operating Controls, Controllers (Disconnect Switches), Wiring Devices, and Wiring: Manufacturer's standard.
   5. Emergency Operation Disconnect Device: Hand-operated disconnect mechanism for automatically engaging manual operator and releasing brake for emergency manual operation while disconnecting motor without affecting timing of limit switch. Manual mechanism door operation shall not exceed 25-lbs.
   6. Use adjustable motor-mounting bases for belt-driven operators.

C. Limit Switches: Adjustable switches interlocked with motor controls and set to automatically stop door at fully opened and fully closed positions.

D. Entrapment Protection Devices: Automatic safety sensor capable of protecting full width of door opening. Activation of device stops and reverses downward door travel. Provide a combination of the following devices, as required, to achieve full compliance with UL 325:
   1. Photoelectric Light Curtain: Manufacturer's standard system designed to detect an obstruction in door opening without contact between door and obstruction.
      a. Monitoring Type: Designed to interface with door operator control circuit to detect damage to or disconnection of sensing device.
   2. Electric Sensor Edge: Automatic safety sensor edge, located within astragal or weather stripping mounted to bottom section. Contact with sensor activates device. Connect to control circuit using manufacturer's standard take-up reel or self-coiling cable.
      a. Monitoring Type: Four-wire configured device designed to interface with door- operator control circuit to detect damage to or disconnection of sensor edge.

E. Control Station: Three-button control station in fixed location with momentary-contact push- button controls labeled "Open" and "Stop" and sustained- or constant-pressure, push-button control labeled "Close.”
   1. Interior-Mounted Units: Full-guarded, surface-mounted, heavy-duty type, with general- purpose NEMA ICS 6, Type 1 enclosure.

2. Exterior-Mounted Units: Full-guarded, standard-duty, surface-mounted, weatherproof type, NEMA ICS 6, Type 4 enclosure, key operated.

F. Audible and Visual Signals: Audible alarm and visual indicator lights in compliance with regulatory requirements for accessibility.

7.2 ALUMINUM FINISHES

[Specifier to choose one]

A. Mill Finish: Uncoated aluminum in its as-manufactured condition (extruded or rolled), with no supplemental surface treatment.

B. Powder-Coat Finish (Cardinal or Tiger): Factory-applied thermoset powder coating in architect-selected RAL color and sheen; applied per manufacturer's standard process.

C. High-Performance Paint Finish (Artisan Kynar): Factory-applied, fluoropolymer-based coating providing superior UV and corrosion resistance; color and sheen as selected by Architect.

PART 3 EXECUTION

1.3 PRE INSTALLATION SITE SURVEY

A. Do not begin installation until openings have been properly prepared.

B. Verify wall openings are ready to receive work and opening dimensions and tolerances are within specified limits.

C. Verify that electrical power is available, properly sized, and of the correct voltage, phase, and frequency as specified for the gate operator system.

D. If preparation is the responsibility of another installer, notify customer of unsatisfactory preparation before proceeding.

E. Verify Reinforcement (Rebar) Locations:

1. Prior to drilling, coring, or anchor installation, verify the location, depth, and spacing of reinforcing steel within concrete substrates.
2. Verification may be performed by review of structural drawings or by use of scanning methods such as ground penetrating radar (GPR) or rebar locators.
3. Scanning may be performed by the Installer or by others, depending on contract scope and project requirements.
4. Coordinate scanning responsibility with the Owner or General Contractor prior to commencement of work.
5. Report any conflicts, obstructions, or insufficient embedment conditions to the Engineer or Owner before proceeding.

2.3 PREPARATION

A. Clean surfaces thoroughly prior to installation.

B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result under the project conditions.

3.3 INSTALLATION

A. Install sectional doors and operating equipment complete with necessary hardware, anchors, inserts, hangers, and equipment supports in accordance with manufacturer's written instructions.

B. Tracks:

1. Fasten vertical track assembly to opening jambs and framing, spaced not more than 24 inches apart.

2. Hang horizontal track assembly from structural overhead framing with angles or channel hangers attached to framing by welding or bolting, or both. Provide sway bracing, diagonal bracing, and reinforcement as required for rigid installation of track and door-operating equipment.

C. Accessibility: Install sectional doors, switches, and controls along accessible routes in compliance with regulatory requirements for accessibility.

D. Power-Operated Doors: Install automatic garage doors openers according to UL 325.

4.3 FINAL CALIBRATION AND CLEAN-UP

A. Compliance Test for proper operation and adjust as necessary to provide proper operation without binding or distortion.

B. Adjust hardware and operating assemblies for smooth and quiet operation.

C. Clean gates with non-abrasive materials and methods recommended by manufacturer.

D. All damaged, marred, or improperly finished components shall be repaired or replaced prior to final acceptance.

5.3 FINAL INSPECTION AND ACCEPTANCE

A. Final Inspection- Upon completion of installation and final calibration, conduct a joint inspection with the customer or authorized representative to verify full and proper operation of all assemblies and components.

B. Documentation - Provide all required submittals and documentation, including:

1. Operation and maintenance manuals
2. As-built drawings reflecting final installation conditions
3. Warranty certificates and material test reports, if applicable

C. Training - Provide end-user training on gate operation, routine maintenance procedures, and basic troubleshooting. Confirm the operator’s understanding and demonstrate proper use.

D. Acceptance - Obtain written confirmation of acceptance from the customer upon successful demonstration of performance, completion of all required documentation, and correction of any punch list items.

END OF SECTION