SECTION 083613

OVERHEAD SECTIONAL DOORS

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**NOTE TO SPECIFIER**

*Use this Specification Section for Mail Processing Facilities.*

***This is a Type 2 Specification with primarily editable text; therefore, most of the text can be edited, but there is some required text which is noted within the Section with a “Note to Specifier.” Do not revise these paragraphs without an approved Deviation from USPS Headquarters, Facilities Program Management, through the USPS Project Manager.***

*For Design/Build projects, do not delete the Notes to Specifier in this Section so that they may be available to Design/Build entity when preparing the Construction Documents.*

*For the Design/Build entity, this specification is intended as a guide for the Architect/Engineer preparing the Construction Documents.*

*The MPF specifications may also be used for Design/Bid/Build projects. In either case, it is the responsibility of the design professional to edit the Specifications Sections as appropriate for the project.*

*Text shown in brackets must be modified as needed for project specific requirements.* *See the “Using the USPS Guide Specifications” document in Folder C for more information.*

*The last date that USPS revised this standard specification section occurs in two places, at the end of this section and in the Table of Contents. If the date in this section matches the date in the Table of Contents, then you are using the latest version. Do not delete or revise the “last revised” date at the end of the section during the development of the Project Manual.*

*The footer in this section should be edited to replace the text, “USPS MPF SPECIFICATION” with the project name, and the blank date in the center should be replaced with the submission date, for interim design reviews, or the issue date of the completed Project Manual.*

**This section is for overhead doors in Vehicle Maintenance Facilities only.**

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1. GENERAL
	1. SUMMARY
		1. Section includes:

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**NOTE TO SPECIFIER**

Adjust list below to suit project. Add other types of doors to list below.

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* + - 1. Manually operated and electrically operated sectional overhead doors with insulated steel-framed steel panels.
			2. Tracks configured for the following lift types:
				1. Standard.
		1. Related Documents: The Contract Documents, as defined in Section 011000, Summary of Work apply to the Work of this Section. Additional requirements and information necessary to complete the Work of this Section may be found in other Documents.
		2. Related Sections:
			1. Section 087100, Door Hardware: for lock cylinders and keying.
			2. Section 099100, Painting: for field-applied paint finish.
			3. Section 111300, Loading Dock Equipment: for interlock switch connection.
			4. Section 111304, Dock Lift (Scissors Type), for interlock switch connection.
			5. Section 260519, Low-Voltage Electrical Power Conductors and Cables: for electrical service and connections for powered operators, and accessories.
	1. REFERENCES
		1. ASTM A653 - Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy Coated (Galvanealed) By the Hot-Dip Process.
		2. ASTM E 84 - Standard Test Method for Surface Burning Characteristics of Building Materials.
	2. DEFINITIONS
		1. Operation Cycle: One complete cycle of a door begins with the door in the closed position. The door is then moved to the open position and back to the closed position.
	3. PERFORMANCE REQUIREMENTS
		1. Structural Performance: Provide sectional overhead doors capable of withstanding the effects of gravity loads and the following loads and stresses without evidencing permanent deformation of door components:

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**NOTE TO SPECIFIER**

Insert pressure applicable to project location.

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* + - 1. Wind Load: Uniform pressure (velocity pressure) of [20] lb./sq. ft., acting inward and outward.
		1. Operation-Cycle Requirements: Design sectional overhead door components and operator to operate for not less than 100,000 cycles.
	1. SUBMITTALS
		1. Product Data: For each type and size of sectional overhead door and accessory. Include details of construction relative to materials, dimensions of individual components, profiles, and finishes. Provide roughing-in diagrams, operating instructions, and maintenance information. Include the following:
			1. Setting drawings, templates, and installation instructions for built-in or embedded anchor devices.
			2. Summary of forces and loads on walls and jambs.
			3. Motors: Show nameplate data and ratings; characteristics; mounting arrangements; size and location of winding termination lugs, conduit entry, and grounding lug; and coatings.
		2. Shop Drawings: For special components and installations not dimensioned or detailed in manufacturer's data sheets.
			1. Wiring Diagrams: Detail wiring for power, signal, and control systems. Differentiate between manufacturer-installed and field-installed wiring and between components provided by door manufacturer and those provided by others.
		3. Samples for Initial Selection: Manufacturer's color charts showing the full range of colors available for units with factory-applied finishes.
		4. Samples for Verification: Of each type of exposed finish required, prepared on Samples of size indicated below and of same thickness and material indicated for Work. Where finishes involve normal color and texture variations, include Sample sets showing the full range of variations expected.
			1. Frame: 6-inch length.
			2. Panel: 6 inches square.
		5. Installer Certificates: Signed by manufacturer certifying that installers comply with specified requirements.
		6. Manufacturers' Certificates: Signed by manufacturers certifying that they comply with requirements specified in "Quality Assurance" Article. On request, submit evidence of manufacturing experience.
	2. QUALITY ASSURANCE
		1. Installer Qualifications: Engage an experienced installer who is an authorized representative of the sectional overhead door manufacturer for both installation and maintenance of units required for this Project.
		2. Manufacturer Qualifications: Engage a firm experienced in manufacturing sectional overhead doors similar to those indicated for this Project and with a record of successful in-service performance.
		3. Source Limitations: Obtain sectional overhead doors through one source from a single manufacturer.
			1. Obtain operators and controls from the sectional overhead door manufacturer.
		4. Product Options: Drawings indicate size, profiles, and dimensional requirements of sectional overhead doors and accessories and are based on the specific system indicated. Other manufacturers' systems with equal performance and dimensional characteristics may be considered. Refer to Division 1 Section "Substitutions."
		5. Listing and Labeling: Provide electrically operated fixtures specified in this Section that are listed and labeled.
			1. The Terms "Listed" and "Labeled": As defined in NFPA 70, Article 100.
1. PRODUCTS
	1. MANUFACTURERS
		1. Subject to compliance with project requirements, manufacturers offering Products which may be incorporated in the Work include the following:
			1. Clopay Building Products Co., Cincinnati, OH (800) 526-4301.
			2. Haas Door Co., Wauseon, OH (800) 877-0795.
			3. McKee Door, Inc.; Aurora, IL (800) 222-7426.
			4. Overhead Door Corporation, Farmer’s Branch, TX (800) 972-1730.
			5. Raynor Garage Doors, Dixon, IL (800) 472-9667.
			6. Wayne-Dalton Corp, Mt. Hope, OH, (800) 764-1457.
			7. Windsor Door; Little Rock, AR (800) 946-3767.
	2. STEEL SECTIONS
		1. Construct door sections from galvanized, structural-quality carbon-steel sheets complying with ASTM A653 (ASTM A653M), commercial quality, with a minimum yield strength of 33,000 psi (225 MPa) and a minimum G60 (Z180) zinc coating.
			1. Steel Sheet Thickness: 20 gauge for exterior and 26 gauge for interior sheets.
			2. Exterior Section Face: Flat.
		2. Fabricate door panels from a single sheet to provide sections not more than 24 inches high and nominally 2 inches deep. Roll horizontal meeting edges to a continuous, interlocking, keyed, rabbeted, shiplap, or tongue-in-groove weathertight seal, with a reinforcing flange return.
		3. Reinforce bottom section with a continuous channel or angle complying with bottom section profile and allowing installation of astragal.
		4. Reinforce sections with continuous horizontal and diagonal reinforcement, as required to stiffen door and for wind loading. Provide galvanized steel bars, struts, trusses or strip steel, formed to depth and bolted or welded in place.
		5. Provide reinforcement for hardware attachment.
		6. Insulation: Manufacturer's standard rigid cellular polystyrene or polyurethane-foam-type thermal insulation, foamed in place to completely fill inner core of section, pressure bonded to face sheets to prevent delamination under wind load and with maximum flame-spread and smoke-developed indices of 75 and 450, respectively, according to ASTM E 84. Enclose insulation completely, with no exposed insulation material evident.
			1. Steel Sheet Inside Face: Manufacturer’s standard thickness.
		7. Fabricate sections so finished door assembly is rigid and aligned, with tight hairline joints, and free of warp, twist, and deformation.
		8. Finish galvanized steel door sections as follows:
			1. General: Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
			2. Surface Preparation: Clean galvanized surfaces with nonpetroleum solvent so surfaces are free of oil and surface contaminants.
			3. Pretreat zinc-coated steel, after cleaning, with a conversion coating of type suited to organic coating applied over it.
			4. Apply manufacturer's standard primer and finish coats to interior and exterior door faces after forming, according to coating manufacturer's written instructions for application, thermosetting, and minimum dry film thickness.
				1. Color: White
	3. TRACKS, SUPPORTS, AND ACCESSORIES
		1. Tracks: Provide manufacturer's standard, galvanized steel track system, sized for door size and weight, designed for lift type indicated and clearances shown, and complying with ASTM A653 (ASTM A653M), for minimum G60 (Z180) zinc coating. Provide complete track assembly including brackets, bracing, and reinforcement for rigid support of ball-bearing roller guides for required door type and size. Slot vertical sections of track at 2 inches (50 mm) o.c. for door-drop safety device. Slope tracks at proper angle from vertical or otherwise design to ensure tight closure at jambs when door unit is closed. Weld or bolt to track supports.
		2. Weatherseals: Provide replaceable, adjustable, continuous, compressible weather-stripping gaskets of flexible vinyl, rubber, or neoprene fitted to bottom and at top of overhead door.
			1. Provide motor-operated doors with combination bottom weatherseal and sensor edge.
			2. In addition, provide continuous flexible seals at door jambs for a weathertight installation.

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**NOTE TO SPECIFIER**

\*\*Required: Overhead sectional doors at VMF vehicle bays are required to have vision panels for safety.

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* + 1. Windows: Provide windows of type and size indicated and in arrangement shown. Set glazing in vinyl, rubber, or neoprene glazing channel.
			1. Size: Manufacturer's standard panel for type of glazing indicated.
			2. Clear Polycarbonate Plastic: 6-mm clear, transparent, fire-retardant polycarbonate sheet manufactured by extrusion process, UV resistant.
	1. HARDWARE
		1. General: Provide heavy-duty, corrosion-resistant hardware, with hot-dip galvanized, stainless-steel, or other corrosion-resistant fasteners, to suit door type.
		2. Hinges: Provide heavy-duty galvanized steel hinges, of not less than 0.0747-inch-thick uncoated steel, at each end stile and at each intermediate stile, per manufacturer's written recommendations for door size. Attach hinges to door sections through stiles and rails with bolts and lock nuts or lock washers and nuts. Use rivets or self-tapping fasteners where access to nuts is not possible. Provide double-end hinges, where required, for doors exceeding 16 feet in width, unless otherwise recommended by door manufacturer.
		3. Rollers: Provide heavy-duty rollers, with steel ball bearings in case-hardened steel races, 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 track, 2-inch- diameter roller tires for 2-inch track, and as follows:
			1. Case-hardened steel tires.
		4. Push/Pull Handles: For push-up-operated or emergency-operated doors, provide galvanized steel lifting handles on each side of door.
		5. Fabricate locking device assembly with lock, spring-loaded dead bolt, operating handle, cam plate, and adjustable locking bar to engage through slots in tracks.
			1. Locking Bars: Both jamb sides, operable from inside only.
		6. Chain Lock Keeper: Suitable for padlock.
	2. COUNTERBALANCING MECHANISM
		1. Torsion Spring: Operation by torsion-spring counterbalance mechanism consisting of adjustable-tension torsion springs, fabricated from oil-tempered-steel wire mounted on a cross-header tube or steel shaft. Connect to door with galvanized aircraft-type lift cables with cable safety factor of at least 5 to 1. Provide springs calibrated for 100,000 cycles minimum.
		2. Cable Drums: Provide cast-aluminum or gray-iron casting cable drums grooved to receive cable. Mount counterbalance mechanism with manufacturer's standard ball-bearing brackets at each end of shaft. Provide 1 additional midpoint bracket for shafts up to 16 feet long and 2 additional brackets at one-third points to support shafts more than 16 feet long, unless closer spacing is recommended by door manufacturer.
		3. Cable Safety Device: Include a spring-loaded, steel or bronze cam mounted to bottom door roller assembly on each side, designed to automatically stop door if either cable breaks.
		4. Bracket: Provide anchor support bracket, as required to connect stationary end of spring to the wall, to level shaft and prevent sag.
		5. Provide a spring bumper at each horizontal track to cushion door at end of opening operation.
	3. MANUAL DOOR OPERATORS: STANDARD
		1. Push-up Operation: Provide lift handles and pull rope for raising and lowering doors, operating with not more than 25-lb. lift or pull.
	4. ELECTRIC DOOR OPERATORS FOR VEHICLE MAINTENANCE FACILITIY BAY DOORS

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**NOTE TO SPECIFIER**

\*\*Required: Do not modify the basis of design or the features listed below without an approved deviation.

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* + 1. General: Electric door operator assembly of size and capacity as specified and provided by door manufacturer for door and “operations cycles” requirement specified, with electric motor and factory-prewired motor controls, starter, grear-reduction unit, solenoid-operated brake, clutch, control stations, control devices, integral gearing for locking door, and accessories required for proper operation.

1. Basis-of-Design Products: The Overhead Door Company Model RSX Standard Duty

2. Comply with NFPA 70.

3. Control equipment complying with NEMA ICS 1, NEMA ICS 2, NEMA ICS 6; andNFPA 70.

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

C. Door-Operator Type: Unit consisting of electric motor, gears, pulleys, belts, sprockets, chains, and controls needed to operate door and meet required usage classification.

D. Motors: Reversible-type motor with controller (disconnect switch) for motor exposure indicated.

1. Electrical Characteristics:

a. Phase: Polyphase.

b. Volts: 208V or 480V; Coordinate for specific location.

c. Hertz: 60.

2. Motor Size: 3/4 HP.

3. Operating Controls, Controllers (Disconnect Switches), Wiring Devices, and Wiring: Manufacturer’s standard unless otherwise indicated.

4. Coordinate wiring requirements and electrical characteristics of motors and other electrical devices with building electrical system and each location where installed.

5. Use adjustable motor-mounting bases for belt-driven operators.

6. For standard locations provide open drip-proof construction; for wash bays provide NEMA 4/NEMA 4X construction.

E. Limit Switches: Equip motorized door with adjustable switches interlocked with motor controls and set to automatically stop door at fully opened and fully closed positions.

F. Obstruction Detection Device: External entrapment protection consisting of indicated automatic safety sensor capable of protecting full width of door opening. Activation of device immediately stops and reverses downward door travel.

1. Photoelectric Sensor: Manufacturer’s standard system designed to detect an obstruction in door opening without contact between door and obstruction.

a. Self-Monitoring Type: Designed to interface with door operator control circuit to detect damage to or disconnection of sensing device. When self-monitoring feature is activated, door closes only with sustained pressure on close button.

G. 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 enclosre. At wash bays provide NEMA 4/NEMA 4X operators.

H. Emergency Manual Operation: Equip electrically powered door with capability for emergency manual operation. Design manual mechanism so required force for door operation does not exceed 25 lbf (111 N).

1. EXECUTION
	1. EXAMINATION
		1. Examine wall and overhead areas, including opening framing and blocking, with Installer present, for compliance with requirements for installation tolerances, clearances, and other conditions affecting performance of Work of this Section.
			1. Proceed with installation only after unsatisfactory conditions have been corrected.
	2. INSTALLATION
		1. General: Install door, track, and operating equipment complete with necessary hardware, jamb and head mold strips, anchors, inserts, hangers, and equipment supports according to Shop Drawings, manufacturer's written instructions, and as specified.
		2. Fasten vertical track assembly to framing at not less than 24 inches o.c. Hang horizontal track from structural overhead framing with angle or channel hangers welded and bolt fastened in place. Provide sway bracing, diagonal bracing, and reinforcement as required for rigid installation of track and door-operating equipment.
	3. ADJUSTING
		1. Lubricate bearings and sliding parts; adjust doors to operate easily, free from warp, twist, or distortion and fitting weathertight for entire perimeter.
	4. DEMONSTRATION
		1. Startup Services: Engage a factory-authorized service representative to perform startup services and to train Owner's maintenance personnel as specified below:
			1. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.
			2. Train Owner's maintenance personnel on procedures and schedules related to startup and shutdown, troubleshooting, servicing, and preventive maintenance.
			3. Review data in the maintenance manuals. Refer to Division 1 Section "Contract Closeout."
			4. Schedule training with Owner with at least 7 days' advance notice.

END OF SECTION

USPS MPF Specification Last Revised: 10/1/2022