**RAYNOR – Sectional Overhead Doors**

**SECTION 08 36 13 - SECTIONAL OVERHEAD DOORS**

*“Specifier Notes” may be hidden or shown by using "Tools"/"Options"/"View"/"Hidden Text".*

1. GENERAL
	1. SECTION INCLUDES
		1. Commercial sectional doors.
		2. Electric Operators
	2. RELATED SECTIONS

\*\* NOTE TO SPECIFIER \*\* Delete any sections below not relevant to this project; add others as required.

* + 1. Section 05 50 00 - Metal Fabrications: Miscellaneous for steel supports.
		2. Section 06 10 00 - Rough Carpentry. Door opening jamb and head members
		3. Section 08 71 00 - Door Hardware: Hardware, locks, access panels.
		4. Section 09 90 00 - Painting: Field painting.
		5. Section 11 12 00 - Parking Control Equipment: Parking control equipment for remote door controls.
		6. Section 26 05 00 - Common Work Results for Electrical.
	1. REFERENCES

\*\* NOTE TO SPECIFIER \*\* Delete references from the list below that are not actually required by the text of the edited section.

* + 1. ASTM A 653/A 653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
		2. ASTM C 518 - Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus.
		3. ASTM E 283 - Standard Test Method for Determining the Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen.
		4. ANSI/DASMA 105 – American National Standard Institute Test Method for Thermal Transmittance and Air Infiltration of Garage Doors
		5. ASTM A 123 – Standard Specification for Zinc (hot-dipped galvanized) coatings on iron and steel products.
		6. ASTM A 229 - Steel wire, oil-tempered for mechanical springs.
		7. ASTM E 330 - Structural performance of exterior windows, curtain walls, and doors by uniform static air pressure difference.
		8. ASTM E 413 - Classification for Rating Sound Insulation
		9. ASTM E 90 - Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Element.
		10. ASTM A 924 - Standard Specification for General Requirements for Steel Sheet, Metallic-Coated by the Hot-Dip Process.
		11. ASTM B 221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes.
		12. UL 325 - Standard for Door, Drapery, Gate, Louver, and Window Operators and Systems Current Edition, Including All Revisions.
		13. ANSI/DASMA 108 - Standard Method for Testing Sectional Garage Doors, Rolling Doors and Flexible Doors: Determination of Structural Performance Under Uniform Static Air Pressure Difference
		14. ANSI/DASMA 102 - Specifications for Sectional Overhead-Type Doors
		15. ANSI/DASMA 115 - Standard Method for Testing Sectional Doors, Rolling Doors, and Flexible Doors: Determination of Structural Performance Under Missile Impact and Cyclic Wind Pressure
		16. FDA 21 CFR 177.1520 - Olefin polymers
	1. SUBMITTALS
		1. Submit under provisions of Section 01300.
		2. Product Data: Manufacturer's data sheets on each product to be used, including:
			1. Preparation instructions and recommendations.
			2. Storage and handling requirements and recommendations.
			3. Installation methods.
		3. Performance Standards: Provide test data validating the following:
			1. Door Section: Gloss retention, fade resistance, FDA compliance, cold crack performance, load to rebound, dent resistance impact.
			2. Drive Train: Spring cycle life, track, hinges, rollers, cable assembly, cable strength.
			3. Door Assembly: Thermal performance, deflection, wind load.
		4. Shop Drawings:
			1. Provide drawings indicating track details, head and jamb conditions, spring shafts, anchorage, accessories, finish colors, patterns and textures, operator mounts and other related information.
			2. Regulatory Requirements and Approvals: Provide shop drawings in compliance with local Authority having Jurisdiction (AHJ).
		5. Certifications:
			1. Submit manufacturer's certificate that products meet or exceed specified requirements.
			2. Submit installer qualifications.

\*\* NOTE TO SPECIFIER \*\* Delete selection samples if colors have already been selected.

* + 1. Selection Samples: For each finish product specified, two complete sets of color chips representing manufacturer's full range of available colors and patterns.
		2. Verification Samples: For each finish product specified, two samples, minimum size 6 inches (150 mm) square, representing actual product, color, and patterns.
	1. QUALITY ASSURANCE
		1. Installer Qualifications: Utilize an authorized installer of door manufacturer who has demonstrated experience on projects of similar size and complexity.
		2. Manufacturer Qualifications: Company with a minimum of five-year experience in producing the specified type of doors.
	2. DELIVERY, STORAGE, AND HANDLING
		1. Store products in manufacturer's unopened packaging until ready for installation.
	3. PROJECT CONDITIONS
		1. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's recommended limits.
	4. WARRANTY
		1. Provide manufacturer’s standard warranty against defects in material and workmanship, as further described with each model in Part 2 of this Section.
		2. Raynor warrants the electrical operator and component parts for two (2) years against defects in material and workmanship when purchased as operator only.
		3. Raynor warrants the electrical operator and component parts against defects in material and workmanship for three (3) years, on the operator only, when purchased with any model of Raynor commercial sectional door.
1. PRODUCTS
	1. MANUFACTURERS
		1. Acceptable Manufacturer: Raynor, which is located at: 1101 East River Rd. P. O. Box 448; Dixon, IL 61021-0448; Toll Free Tel: 800-4-RAYNOR; Tel: 815-288-1431; Fax: 888-598-4790; Email: architectsupport@raynor.com; Web: [www.raynor.com](http://www.raynor.com)

\*\* NOTE TO SPECIFIER \*\* Delete one of the following two paragraphs; coordinate with requirements of Division 1 section on product options and substitutions.

* + 1. Substitutions: Not permitted.
		2. Requests for substitutions will be considered in accordance with provisions of Section 01600.

\*\* NOTE TO SPECIFIER \*\* Revise paragraph below to suit project requirements. If a reader of this section could reasonably expect to find a product or component specified in this section, but it is actually specified elsewhere, then the related section number(s) should be listed in the paragraph below. Delete door product if not required.

**2.2 COMMERCIAL SECTIONAL RAISED PANEL DOOR**

* + 1. **Commercial BuildMark as manufactured by Raynor Garage Doors**:
			1. Doors:
				1. Operation:

\*\* NOTE TO SPECIFIER \*\* Delete door operation not required. There are restrictions on size of door for manual or hand chain operation.

Provide doors designed for manual operation.

Provide doors designed for hand chain operation.

Provide doors designed for electric motor operation.

* + - * 1. Jamb Construction:

\*\* NOTE TO SPECIFIER \*\* Delete jamb not required.

Steel jambs with self-tapping fasteners.

Wood jambs with lag screw fasteners.

Masonry jambs with anchor bolt fasteners.

* + - * 1. Structural Performance Requirements:

\*\* NOTE TO SPECIFIER \*\* Insert required wind load p.s.f.

Wind Loads: 10.0 psf design load/15.0 psf test load standard.

Wind Loads: Uniform pressure of: \_\_\_\_\_\_\_\_ psf.

* + - 1. Sections:
				1. **Commercial BuildMark**:

Section end stiles to be 18 gauge galvanized steel and center stiles to be 20 gauge galvanized steel. End stiles to be crimp-locked to the section skin. Center stiles to be glued and crimp-locked to section skin.

Material: Steel pan construction, 2 inches (51 mm) thick, roll formed from 25 gauge draw quality, hot-dipped galvanized (G40 exterior) steel complying with ASTM A 653. Exterior surface of sections shall feature embossed Colonial Raised Panels, Ranch Raised Panels, or Flush Woodgrain Surface. Sections shall have tongue-and-groove joints for weather-tight closure.

Finish: Exterior skin to have two coats of paint, one primer coat and one finish coat.

\*\* NOTE TO SPECIFIER \*\* Delete color not required.

Color: White polyester paint.

Color: Almond polyester paint.

Color: Sandstone polyester paint.

Color: Desert tan polyester paint.

Color: Brown polyester paint.

Color: Black polyester paint.

ColorWave Enamel paint finish, color as selected by Architect from Raynor’s ColorWave post paint process featuring 1500 colors of Sherwin Williams Polane Enamel paint.

Color: \_\_\_\_\_\_\_\_.

\*\* NOTE TO SPECIFIER \*\* Delete insulation if not required.

Insulation: Expanded polystyrene with R-value of 6.6 with white impact-resistant textured covers.

* + - * 1. Seals: Bottom of door to have flexible U-shaped vinyl seal retained in aluminum rail. Optional blade seal on top section to prevent airflow above header
				2. Trussing: Doors designed to withstand specified windload. Deflection of door in horizontal position to be maximum of 1/120th of door width.

\*\* NOTE TO SPECIFIER \*\* Some restrictions may apply based on door height. Actual window width may vary slightly based on door width. Delete if not required.

* + - 1. Windows: Locations to comply with door elevation drawings.

\*\* NOTE TO SPECIFIER \*\* Delete window not required.

* + - * 1. Colonial style 18 inches by 13 inches (457 mm by 330 mm) minimum window encased in an injection molded polypropylene frame.
				2. Ranch style 41 inches by 13 inches (1041 mm by 330 mm) window minimum encased in an injection molded polypropylene frame.

\*\* NOTE TO SPECIFIER \*\* Delete window not required.

* + - 1. Glazing: Windows to be provided with glazing units as follows:
				1. Single glass consisting of one pane of 1/8 inch (3.2 mm) thick DSB glass.
				2. Single glass consisting of one pane of 1/8 inch (3.2 mm) thick Tempered glass.
				3. Single glass consisting of one pane of 1/8 inch (3.2 mm) thick DSB obscure glass.
				4. Single glass consisting of one pane of 1/8 inch (3.2 mm) thick Tempered Obscure glass.
				5. Single glass consisting of 1/4" Polycarbonate glass in Aluminum window frame (Impact resistant; for wind load doors only)
				6. Single glass consisting of 1/4" Dark Tinted Polycarbonate glass in Aluminum window frame (Impact resistant; for wind load doors only)
				7. Single glass consisting of 1/4" Frost Polycarbonate glass in Aluminum window frame (Impact resistant; for wind load doors only)
			2. Track:
				1. Material: Hot-dipped galvanized steel (ASTM A 653), fully adjustable for adequate sealing of door to jamb or weatherseal.

\*\* NOTE TO SPECIFIER \*\* Delete configuration type not required.

* + - * 1. Configuration Type: Normal Headroom.
				2. Configuration Type: Low Headroom.
				3. Configuration Type: Vertical Lift.
				4. Configuration Type: Lift-Clearance.
				5. Configuration Type: Incline.
				6. Configuration Type: Contour.

\*\* NOTE TO SPECIFIER \*\* The only mounting available on 3-inch lift-clearance is Floor-to-Shaft Angle-Mount and Clip-Angle. Refer to manufacturer's literature for other restrictions. Delete track size, jamb type and mounting options not required.

* + - * 1. Track Size: 2 inches (51 mm).

Jamb Type: Wood only.

Mounting: Adjustable track brackets.

Jamb Type: Steel, wood, or masonry.

Mounting: Floor-to-header angles. 13 gauge (2.2 mm) minimum continuous angles from floor to door header. Angle Size: 2-5/16 x 4 inches (59 x 102 mm)

Mounting: Floor-to-shaft angles. 13 gauge (2.2 mm) minimum continuous angles from floor, past header, up to door shaft. Angle Size: 2-5/16 x 4 inches (59 x 102 mm).

Mounting: QuikClip. Clip-Angle brackets pre-assembled to 13 gauge (2.2 mm) minimum continuous angle from floor to door header and continuous angle from door header to door shaft. Angle Size: 2-5/16 x 1-1/4 inches (59 x 32 mm).

* + - * 1. Track Size: 3 inches (76 mm).

Jamb Type: Steel, wood, or masonry.

Mounting: Floor-to-header angles. 13 gauge (2.2 mm) minimum continuous angles from floor to door header. Angle Size: 3-1/2 x 5 inches (89 x 127 mm) on 3-inch track.

Mounting: Floor-to-shaft angles. 13 gauge (2.2 mm) minimum continuous angles from floor, past header, up to door shaft. Angle Size: 3-1/2 x 5 inches (89 x 127 mm) on 3-inch track.

Mounting: QuikClip. Clip-Angle brackets pre-assembled to 13 gauge (2.2 mm) minimum continuous angle from floor to door header and continuous angle from door header to door shaft. Angle Size: 3-1/2 x 1-1/4 inches (89 x 32 mm) on 3-inch track.

* + - * 1. Finish:

\*\* NOTE TO SPECIFIER \*\* Delete finish not required.

Galvanized.

ArmorBrite Powdercoat Finish: Color as selected by Architect

Color: \_\_\_\_\_\_\_\_\_\_\_\_.

* + - 1. Counterbalance:
				1. Counterbalance System: Provided with aircraft-type, galvanized steel lifting cables with minimum safety factor of 5. Torsion Springs consisting of heavy-duty oil-tempered wire torsion springs on a continuous ball-bearing cross-header shaft.

\*\* NOTE TO SPECIFIER \*\* Delete one of the following two paragraphs. For high cycle insert the required cycle life (15,000 - 200,000),

Spring Cycle Requirements: Standard 10,000 cycles.

Spring Cycle Requirements: High cycle: \_\_\_\_\_\_\_\_\_\_\_ cycles.

* + - 1. Hardware:
				1. Hinges and Brackets: Fabricated from galvanized steel.

\*\* NOTE TO SPECIFIER \*\* Delete track size not required.

* + - * 1. Track Rollers: 2 inches (50.8 mm) diameter consistent with track size, with hardened steel ball bearings.
				2. Track Rollers: 3 inches (76.2 mm) diameter consistent with track size, with hardened steel ball bearings.

\*\* NOTE TO SPECIFIER \*\* Door may be provided with perimeter seal for jambs. Delete if not required.

* + - * 1. Perimeter Seal: Provide complete weather stripping system to reduce air infiltration. Weather stripping shall be replaceable.

For bracket mounted doors provide climate seal or vinyl seal with aluminum retainer.

For angle mounted doors provide angle clip-on seal.

\*\* NOTE TO SPECIFIER \*\* Door may be provided with exterior or interior locking device. Retain or delete paragraph below to suit project.

* + - * 1. Furnish door system with locks: Exterior lock with five-pin tumbler cylinder, night latch and steel bar engaging track.
				2. Furnish door system with locks: Interior lock with dead bolt provided with hole to receive padlock provided by Owner.
			1. Commercial BuildMark, Commercial TradeMark Series Limited Warranty: Raynor warrants the door sections against defects in material and workmanship, and deterioration due to rust-through for ten years from date of delivery to the original purchaser. Window components are warranted against defects in material and workmanship for one year from date of delivery to the original purchaser. Raynor warrants all hardware and spring components against defects in material and workmanship for one year (or cycle life of the springs) from date of delivery to the original purchaser. Additional Limited Warranty requirements in accordance with manufacturer’s full standard limited warranty documentation.

\*\* NOTE TO SPECIFIER \*\* ControlHoist (solid state) operators. Delete if not required.

## **2.3 ELECTRIC OPERATORS**

* + 1. ControlHoist as manufactured by Raynor Garage Doors:
			1. Model:

\*\* NOTE TO SPECIFIER \*\* ControlHoist 2.0 Optima operators (solid state) feature a heavy-duty gear drive running in oil for high reliability and efficient operation. They are designed for larger sectional doors and higher cycle applications. Delete if not required.

* + - * 1. Raynor ControlHoist Optima:

Type: Jackshaft with manual chain hoist.

Type: Trolley.

\*\* NOTE TO SPECIFIER \*\* Delete rating not required.

Motor Horsepower Rating: Continuous 1/2 HP.

Motor Horsepower Rating: Continuous 3/4 HP.

Motor Horsepower Rating: Continuous 1 HP.

Motor Horsepower Rating: Continuous 1-1/2 HP.

Motor Horsepower Rating: Continuous 2 HP.

\*\* NOTE TO SPECIFIER \*\* Delete electrical not required.

Electrical Requirements: 115 volt single phase.

Electrical Requirements: 230 volt single phase.

Electrical Requirements: 208-230 volt three phase.

Electrical Requirements: 460 volt three phase.

Duty Cycle: 30 cycles/hour or 300 cycles/day.

Control Wiring: Solid state circuitry with provisions for connection of safety edge to reverse, external radio control hook-up and maximum run timer. Provisions for timers to close, monitored reversing devices, mid stop and lock bar sensor capability.

\*\* NOTE TO SPECIFIER \*\* Delete if custom wiring not required. For custom wiring contact manufacturer.

Provide three button momentary contact "open-stop", constant pressure on close (can be changed to momentary to close).

Custom wiring.

\*\* NOTE TO SPECIFIER \*\* Delete eNTRAPMENT PROTECTION NOT NEEDED. at least one form of monitored entrapment protection is required to allow momentary contact and radio control OPERATION.

Entrapment protection:

Wired Monitored electric reversing edge extending full width of door.

Wireless Monitored electric reversing edge extending full width of door.

NEMA 1 Monitored photo electric eyes mounted on jambs.

NEMA 4X Monitored photo electric eyes mounted on jambs.

\*\* NOTE TO SPECIFIER \*\* ControlHoist 2.0 Standard belt-drive operators are designed for medium- to high-cycle applications and for normal- to large-size sectional doors. Delete if not required.

* + - * 1. Raynor ControlHoist Standard:

\*\* NOTE TO SPECIFIER \*\* Delete types not required.

Type: Jackshaft.

Type: Jackshaft with manual chain hoist.

Type: Trolley.

\*\* NOTE TO SPECIFIER \*\* Delete rating not required.

Motor Horsepower Rating: Continuous 1/3 HP.

Motor Horsepower Rating: Continuous 1/2 HP.

Motor Horsepower Rating: Continuous 3/4 HP.

Electrical Requirements: 115 volt single phase.

Electrical Requirements: 230 volt single phase.

Electrical Requirements: 208-230 volt three phase.

Electrical Requirements: 460 volt three phase.

Duty Cycle: 30 cycles/hour or 300 cycles/day.

Control Wiring: Solid state circuitry with provisions for connection of safety edge to reverse, external radio control hook-up and maximum run timer. Provisions for timers to close, monitored reversing devices, mid stop and lock bar sensor capability.

Provide three button momentary contact "open-stop", constant pressure on close (can be changed to momentary to close).

\*\* NOTE TO SPECIFIER \*\* Delete if custom wiring not required. For custom wiring contact manufacturer.

Custom wiring.

\*\* NOTE TO SPECIFIER \*\* Delete eNTRAPMENT PROTECTION NOT NEEDED. at least one form of monitored entrapment protection is required to allow momentary contact and radio control OPERATION.

Entrapment protection:

Wired Monitored electric reversing edge extending full width of door.

Wireless Monitored electric reversing edge extending full width of door.

NEMA 1 Monitored photo electric eyes mounted on jambs.

NEMA 4X Monitored photo electric eyes mounted on jambs.

\*\* NOTE TO SPECIFIER \*\* ControlHoist 2.0 Basic belt drive operators are designed for operating sectional doors up to 14 feet high in light duty applications. Delete if not required.

* + - * 1. Raynor ControlHoist Basic:

\*\* NOTE TO SPECIFIER \*\* Delete types not required.

Type: Jackshaft.

Type: Jackshaft with manual chain hoist.

Type: Trolley.

Motor Horsepower Rating: Intermittent 1/2 HP.

Electrical Requirements: 115 volt single phase.

Duty Cycle: 14 cycles/hour.

Control Wiring: Solid state circuitry with provisions for connection of safety edge to reverse, external radio control hook-up and maximum run timer. Provisions for timers to close, monitored reversing devices, mid stop and lock bar sensor capability.

Provide three button momentary contact "open-stop", constant pressure on close (can be changed to momentary to close).

\*\* NOTE TO SPECIFIER \*\* Delete eNTRAPMENT PROTECTION NOT NEEDED. at least one form of monitored entrapment protection is required to allow momentary contact and radio control OPERATION.

Entrapment protection:

Wired Monitored electric reversing edge extending full width of door.

Wireless Monitored electric reversing edge extending full width of door.

NEMA 1 Monitored photo electric eyes mounted on jambs.

NEMA 4X Monitored photo electric eyes mounted on jambs.

1. EXECUTION
	1. EXAMINATION
		1. Do not begin installation until substrates have been properly prepared. Verify that site conditions are acceptable for installation of doors, operators, controls and accessories. Ensure that openings are square, flush and plumb.
		2. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.
	2. PREPARATION
		1. Clean surfaces thoroughly prior to installation.
		2. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
	3. INSTALLATION
		1. General: Install door, track and operating equipment complete with all necessary accessories and hardware according to shop drawings, manufacturer's instructions.
		2. Lubricate bearings and sliding parts, and adjust doors for proper operation, balance, clearance and similar requirements.
	4. PROTECTION
		1. Clean installed products in accordance with manufacturer's instructions prior to Owner's acceptance. Remove and legally dispose of construction debris from project site.
		2. Remove temporary coverings and protection of adjacent work areas. Repair or replace installed products damaged prior to or during installation.
		3. Lubricate bearings and sliding parts, assure weather tight fit around door perimeter and adjust doors for proper operation, balance, clearance and similar requirements. Protect installed products until completion of project.
		4. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION