SECTION 08 36 00

OVERHEAD DOORS - COMMERCIAL

Display hidden notes to specifier. (Don't know how? [Click Here](http://www.arcat.com/sd/display_hidden_notes.shtml))

*Copyright 2013 - 2017 ARCAT, Inc. - All rights reserved*

\*\* NOTE TO SPECIFIER \*\* Midland Garage Door Mfg. Co.; products.
.
This section is based on the products of Midland Garage Door Mfg. Co., which is located at:
675 12th Ave. N.W.
West Fargo, ND 58078-2539
Toll Free Tel: 800-437-4056
Tel: 701-282-8136
Fax: 701-282-8252
Email: [request info (bradm@midlandgaragedoor.com)](http://admin.arcat.com/users.pl?action=UserEmail&company=Midland+Garage+Door+Mfg.+Co.&coid=34208&rep=&fax=701-282-8252&message=RE:%20Spec%20Question%20(08360mid):%20%20&mf=)
Web: [www.midlandgaragedoor.com](http://www.midlandgaragedoor.com)
 [ [Click Here](http://www.arcat.com/arcatcos/cos34/arc34208.html) ] for additional information.
Since 1978 Midland Garage Door Mfg. Co. has been dedicated to manufacturing the highest quality steel commercial overhead door products. Midland has manufactured thousands of commercial overhead doors, many of which have been installed in demanding locations such as military installations, fire departments, police stations, service stations, coal mines, and other commercial and agricultural applications.
Midland's commercial overhead doors provide an outstanding value with a variety of styles and colors to choose from, as well as the durability and security provided by our rugged steel construction. Midland provides a heavy-duty torsion spring system as our standard option, assuring the safe and smooth operation of your overhead door. All Midland commercial overhead doors provide superior strength. The bottom weather seal (astragal) is an extra wide heavy-duty seal designed to stay flexible and provide the best possible protection against the elements. All of our track, rollers and hardware are heavy-duty and designed to last for years. When you choose a Midland commercial overhead door you can be confident that you have chosen the best overhead door that money can buy!

1. GENERAL
	1. SECTION INCLUDES

\*\* NOTE TO SPECIFIER \*\* Delete items below not required for project.

* + 1. Ribbed Overhead Doors.
		2. Insulated Overhead Doors.
	1. RELATED SECTIONS

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

* + 1. Section 03 30 00 - Cast-in-Place Concrete. Execution requirements for placement of anchors in concrete wall construction.
		2. Section 04 27 23 - Cavity Wall Unit Masonry. Execution requirements for placement of anchors in masonry wall construction.
		3. Section 05 50 00 - Metal Fabrications.
		4. Section 06 11 00 - Wood Framing.
		5. Section 07 90 00 - Joint Protection.
		6. Section 08 71 53 - Security Door Hardware.
		7. Section 08 71 13 - Automatic Door Operators
		8. Section 09 90 00 - Painting and Coating.
	1. REFERENCES

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

* + 1. ANSI/DASMA 102 - American National Standard Specifications for Sectional Overhead Type Doors.
		2. ASTM A 36 - Standard Specification for Carbon Structural Steel.
		3. ASTM A 123 - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.
		4. ASTM A 653 - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
		5. ASTM A 924 - Standard Specification for General Requirements for Steel Sheet, Metallic-Coated by the Hot-Dip Process.
		6. ASTM E 84 - Standard Test Method for Surface Burning Characteristics of Building Materials.
		7. ASTM E 283 - Standard Test Method for Determining Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen.
		8. UL 325/2010 - Safety standard for door, drapery, gate, louver, and window operators and systems.
	1. DESIGN / PERFORMANCE REQUIREMENTS

\*\* NOTE TO SPECIFIER \*\* Edit the following paragraph for power operators as required. Delete if not required.

* + 1. Wiring Connections: Requirements for electrical characteristics.
			1. 115 volts, single phase, 60 Hz.
			2. 230 volts, single phase, 60 Hz.
			3. 230 volts, three phase, 60 Hz.
			4. 460 volts, three phase, 60 Hz.
	1. SUBMITTALS
		1. Submit under provisions of Section 01 30 00 - Administrative Requirements.
		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. Shop Drawings: Indicate plans and elevations including opening dimensions and required tolerances, connection details, anchorage spacing, hardware locations, and installation details.

\*\* 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.
		3. Manufacturer's Certificates: Certify products meet or exceed specified requirements.
		4. Closeout Submittals: Provide manufacturer's maintenance instructions that include recommendations for periodic checking and adjustment and periodic cleaning and maintenance of all components.
	1. QUALITY ASSURANCE
		1. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section with minimum five years documented experience.
		2. Installer Qualifications: Authorized representative of the manufacturer with minimum five years documented experience.
		3. Products Requiring Electrical Connection: Listed and classified by Underwriters Laboratories, Inc. acceptable to authority having jurisdiction as suitable for purpose specified.
	2. DELIVERY, STORAGE, AND HANDLING
		1. Store products in manufacturer's unopened labeled packaging until ready for installation.
		2. Protect materials from exposure to moisture and sunlight until ready for installation.
		3. Store materials in a dry, ventilated weathertight location.
	3. SEQUENCING
		1. Ensure that locating templates and other information required for installation of products of this section are furnished to affected trades in time to prevent interruption of construction progress.
		2. Ensure that products of this section are supplied to affected trades in time to prevent interruption of construction progress.
	4. 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 absolute limits.
	5. WARRANTY

\*\* NOTE TO SPECIFIER \*\* Include the following warranty paragraph for sectional doors as applicable. Note that Midland warrants all components in a high cycle application for 1 year. Midland warrants the 3 inch Energy Saver (ES) sections used in harsh environments to the original purchaser for 1 year. No other section models are warranted when used in a harsh environment application. This paragraph includes extended warranties beyond one year. One year Warranties are typically covered under General Conditions of Contract.

* + 1. Warranty: Manufacturer's limited warranty for steel garage door sections used in commercial applications against rust through, paint finish cracking or peeling to the original purchaser for 10 years. All other components except springs are warranted for 2 years.
1. PRODUCTS
	1. MANUFACTURERS
		1. Acceptable Manufacturer: Midland Garage Door Mfg. Co., which is located at: 675 12th Ave. N.W.; West Fargo, ND 58078-2539; Toll Free Tel: 800-437-4056; Tel: 701-282-8136; Fax: 701-282-8252; Email: [request info (bradm@midlandgaragedoor.com)](http://admin.arcat.com/users.pl?action=UserEmail&company=Midland+Garage+Door+Mfg.+Co.&coid=34208&rep=&fax=701-282-8252&message=RE:%20Spec%20Question%20(08360mid):%20%20&mf=); Web: [www.midlandgaragedoor.com](http://www.midlandgaragedoor.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 01 60 00 - Product Requirements.
	1. RIBBED OVERHEAD DOORS

\*\* NOTE TO SPECIFIER \*\* Midland Garage Door Mfg. Co Model Number CS20 Steel Doors are available up to a maximum width of 40 feet 2 inches and a maximum height of 32 feet 0 inch. Edit as required to suit project requirements. Model Number CS24 Steel doors are available up to a maximum width of 26 feet 2 inches and maximum height of 32 feet 0 inch. Model Number CS26 are available up to a maximum width of 16 feet 2 inch and maximum height of 14 feet 0 inch. Edit as required to suit project requirements.

* + 1. Ribbed Steel Overhead Doors: Sectional steel commercial overhead doors as manufactured by Midland Garage Door Mfg. Co.
			1. Model:
				1. CS20: 20 gauge roll formed, hot dipped, galvanized G60 (minimum) steel with a yield strength of 33,000 psi, complying with ASTM A 653 and ASTM A 924
				2. CS24: 24 gauge roll formed, hot dipped, galvanized G60 (minimum) steel with a yield strength of 33,000 psi, complying with ASTM A 653 and ASTM A 924
				3. CS26: 26 gauge roll formed, hot dipped, galvanized G60 (minimum) steel with a yield strength of 33,000 psi, complying with ASTM A 653 and ASTM A 924
			2. Sections: Fabricated with tongue and groove meeting rails to form weather tight joints.
				1. Panel Thickness: 2 inches (51 mm).
				2. Exterior Surface: Embossed pebble-grained texture.

\*\* NOTE TO SPECIFIER \*\* Select the following paragraph for use with Model CS20 and CS24. Delete if not applicable.

* + - * 1. Center and end stiles are 16 gauge steel riveted and welded to sections. End stiles are channel shaped to 2 inches (51 mm) deep.

\*\* NOTE TO SPECIFIER \*\* Select the following paragraph for use with Model CS20 and CS26. Delete if not applicable.

* + - * 1. Center and end stiles are 18 gauge steel glued and toggle locked to the sections. End stiles are channel shaped to 2 inches (51 mm) deep

\*\* NOTE TO SPECIFIER \*\* Select one of the following optional window paragraphs if required. Delete if not applicable.

* + - 1. Window:
				1. Plain 24 inch by 5 inch ( 610 mm by 127 mm) size.
				2. Plain 24 inch by 12 inch ( 610 mm by 305 mm) size.
				3. Full Vision section comprised of aluminum alloy. Stiles and rails joined together with 1/4 inch (6.5 mm) rods. Maximum width of 20 feet 2 inches.

\*\* NOTE TO SPECIFIER \*\* Select one of the following full vision finish and glass types if full vision is required. Delete if not applicable.

Finish:

White powder coated.

Mill aluminum.

Glass type:

1/2 inch insulated glass.

1/8 inch non-insulated tempered glass.

1/4 inch non-insulated tempered glass.

1/2 inch insulated tempered glass.

* + - 1. Spring Counterbalance: Sized to weight of the door with oil tempered, helical wound torsion springs mounted on a ball bearing cross header shaft and engineered to comply with ANSI/DASMA 102. Galvanized aircraft type lifting cables with minimum safety factor of 8 to 1 and cast aluminum drums are standard.

\*\* NOTE TO SPECIFIER \*\* Select one of the following paragraphs and delete the ones not required. 10,000 cycles are standard.

Standard cycle spring: 10,000 cycles.

High cycle spring: 25,000 cycles.

High cycle spring: 50,000 cycles.

High cycle spring: 75,000 cycles.

High cycle spring: 100,000 cycles.

* + - 1. Insulation:

\*\* NOTE TO SPECIFIER \*\* Select one of the following optional insulation paragraph if required. Delete if not applicable.

* + - * 1. Provide polystyrene insulation with an insulation factor of 7.0 R-Value.
				2. Insulation: Provide polystyrene insulation with a 26 gauge steel backer, with and insulation factor of 7.0 R-Value.
			1. Hardware: Hinges and fixtures are G60 galvanized steel complying with ASTM A 36 and ASTM A 123. Rollers provided with full floating ball bearing with hardened steel races. Provide roller sizes adequate for design requirements and limitations.
			2. Track: Provide track as recommended by manufacturer to suit loading required and clearances available.

\*\* NOTE TO SPECIFIER \*\* Edit the following track size, type and mounting paragraphs as required and delete the ones not required.

* + - * 1. Size:

2 inch (51 mm).

3 inch (76 mm).

* + - * 1. Type:

Regular clearance

Low headroom.

Lift clearance

Full Vertical lift.

Incline.

* + - * 1. Mounting:

Bracket mounted using track brackets for use on 2 inch track with wood jambs.

Continuous angle mounted for use on wood jambs.

Continuous reverse angle mounted for use on steel jambs, sections to overlap jambs 1 inch on each side.

\*\* NOTE TO SPECIFIER \*\* Select one of the following Operation paragraphs and delete the ones not required. Manual pull rope is standard.

* + - 1. Manual Operation: Pull rope.
			2. Manual Operation: Chain hoist.
			3. Electric Motor Operation: Provide UL listed electric operator, size and type as recommended by manufacturer to move door in either direction at not less than 2/3 foot nor more than 1 foot per second. Operator shall meet UL325/2010 requirements for continuous monitoring of safety devices.
				1. Entrapment Protection: Required for momentary contact, includes radio control operation.

\*\* NOTE TO SPECIFIER \*\* Select one of the following protection paragraphs and delete those not required.

Photoelectric sensors monitored to meet UL 325/2010.

Pneumatic sensing edge up to 18 feet (5.5 m) wide. Constant contact only complying with UL 325/2010.

Electric sensing edge monitored to meet UL 325/2010.

* + - * 1. Operator Controls:

\*\* NOTE TO SPECIFIER \*\* Select one of the following control paragraphs and delete those not required.

Push-button operated control stations with open, close, and stop buttons.

Key operated control stations with open, close, and stop buttons.

Push-button and key operated control stations with open, close, and stop buttons.

\*\* NOTE TO SPECIFIER \*\* Select one of the following mounting paragraphs and delete the one not required.

Surface mounting.

Flush mounting.

\*\* NOTE TO SPECIFIER \*\* Select one of the following mounting location paragraphs and delete those not required.

Interior location.

Exterior location.

Both interior and exterior location.

\*\* NOTE TO SPECIFIER \*\* Select special operation features from the following paragraphs and delete those not required. Delete entirely if not required.

* + - * 1. Special Operation:

Radio control operation.

Pull switch.

Vehicle detector operation.

Card reader control.

Photocell operation.

Door timer operation.

Explosion and dust ignition proof control wiring.

* + - 1. Finish and Color: Baked-on polyester over epoxy primer.

\*\* NOTE TO SPECIFIER \*\* Select one of the following exterior finish and color paragraphs and delete the ones not required. Note that CS20 is available in White only and CS 26 is available in White and Brown only.

Exterior color, white.

Exterior color, brown.

Exterior color, sandstone

\*\* NOTE TO SPECIFIER \*\* The following paragraph is optional. Contact the manufacturer for additional information regarding the options available. Include the Design/Performance Requirements in Part 1 of this specification.

* + - 1. Windload Design: Provide to meet the Design/Performance requirements specified. Deflection of door in the horizontal position will not exceed 1/120 of the door width, please consult factory for unusual requirements.
			2. Lock:

\*\* NOTE TO SPECIFIER \*\* Select one of the following paragraphs and delete the ones not required. Interior mounted slide lock is standard.

* + - * 1. Interior mounted slide lock.
				2. Interior mounted slide lock with interlock switch for automatic operator.
				3. Keyed lock.
				4. Keyed lock with interlock switch for automatic operator.
			1. Weatherstripping:

\*\* NOTE TO SPECIFIER \*\* Select the seals required from the following paragraphs and delete those not required. Bottom seals are standard. Header seals and jamb seals are optional.

* + - * 1. Bottom weatherstrip U shape astragal fastened to the bottom of the door with an extruded aluminum holder.
				2. Flexible Header seal.
				3. Jamb seals.
	1. INSULATED OVERHEAD DOORS

\*\* NOTE TO SPECIFIER \*\* Midland Garage Door Mfg. Co Energy Saver 2 inch Overhead Doors are available up to a maximum width of 24 feet 2 inches and a maximum height of 32 feet 0 inch. Edit as required to suit project requirements.

* + 1. Energy Saver 2 inch Overhead Doors: Sectional steel commercial overhead doors as manufactured by Midland Garage Door Mfg. Co.
			1. Sections: Roll formed and pressure bonded to a polystyrene core with a PVC thermal break to prevent heat or cold conductivity.

\*\* NOTE TO SPECIFIER \*\* Select one of the following material paragraphs and delete the ones not required. Interior and exterior 25 gauge is standard.

* + - * 1. Material: Interior and exterior 25 gauge, hot dipped, galvanized G60 (minimum) steel with a yield strength of 33,000 psi, complying with ASTM A 653 and ASTM A 924.
				2. Material: Interior 25 gauge and exterior 20 gauge, hot dipped, galvanized G60 (minimum) steel with a yield strength of 33,000 psi, complying with ASTM A 653 and ASTM A 924.
				3. Material: Interior and exterior 20 gauge, hot dipped, galvanized G60 (minimum) steel with a yield strength of 33,000 psi, complying with ASTM A 653 and ASTM A 924.
				4. Insulation: Rigid polystyrene free of CFCs and HCFCs with a calculated R-Value of 9.25 and a U-Value of .10
				5. Panel Thickness: 2 inches (51 mm).
				6. Interior and Exterior Surface: Embossed pebble-grained texture.
				7. End Stiles: 16 gauge steel with thermal break.

\*\* NOTE TO SPECIFIER \*\* Select one of the following optional window paragraphs if required. Delete if not applicable.

* + - 1. Window:
				1. Plain 24 inch by 7 inch ( 610 mm by 178 mm) size with 1/2 inch (12.5 mm) Insulated glazing.
				2. Plain 24 inch by 12 inch ( 610 mm by 305 mm) size with 1/2 inch (12.5 mm) Insulated glazing.
				3. Full Vision section comprised of aluminum alloy. Stiles and rails joined together with 1/4 inch (6.5 mm) rods. Maximum width of 20 feet 2 inches.

\*\* NOTE TO SPECIFIER \*\* Select one of the following full vision finish and glass types if full vision is required. Delete if not applicable.

Finish:

White powder coated.

Mill aluminum.

Glass type:

1/2 inch insulated glass.

1/8 inch non-insulated tempered glass.

1/4 inch non-insulated tempered glass.

1/2 inch insulated tempered glass.

* + - 1. Spring Counterbalance: Sized to weight of the door with oil tempered, helical wound torsion springs mounted on a ball bearing cross header shaft and engineered to comply with ANSI/DASMA 102-1996. Galvanized aircraft type lifting cables with minimum safety factor of 8 to 1 and cast aluminum drums are standard.

\*\* NOTE TO SPECIFIER \*\* Select one of the following paragraphs and delete the ones not required. 10,000 cycles are standard.

Standard cycle spring: 10,000 cycles.

High cycle spring: 25,000 cycles.

High cycle spring: 50,000 cycles.

High cycle spring: 75,000 cycles.

High cycle spring: 100,000 cycles.

* + - 1. Hardware: Hinges and fixtures are G60 galvanized steel complying with ASTM A 36 and ASTM A 123. Rollers provided with full floating ball bearing with hardened steel races. Provide roller sizes adequate for design requirements and limitations.
			2. Track: Provide track as recommended by manufacturer to suit loading required and clearances available.

\*\* NOTE TO SPECIFIER \*\* Edit the following track size, type and mounting paragraphs as required and delete the ones not required.

* + - * 1. Size:

2 inch (51 mm).

3 inch (76 mm).

* + - * 1. Type:

Regular clearance

Low headroom.

Lift clearance

Full Vertical lift.

Incline.

* + - * 1. Mounting:

Bracket mounted using track brackets for use on 2 inch track with wood jambs.

Continuous angle mounted for use on wood jambs.

Continuous reverse angle mounted for use on steel jambs, sections to overlap jambs 1 inch on each side.

\*\* NOTE TO SPECIFIER \*\* Select one of the following Operation paragraphs and delete the ones not required. Manual pull rope is standard.

* + - 1. Manual Operation: Pull rope.
			2. Manual Operation: Chain hoist.
			3. Electric Motor Operation: Provide UL listed electric operator, size and type as recommended by manufacturer to move door in either direction at not less than 2/3 foot nor more than 1 foot per second. Operator shall meet UL325/2010 requirements for continuous monitoring of safety devices.
				1. Entrapment Protection: Required for momentary contact, includes radio control operation.

\*\* NOTE TO SPECIFIER \*\* Select one of the following protection paragraphs and delete those not required.

Photoelectric sensors monitored to meet UL 325/2010.

Pneumatic sensing edge up to 18 feet (5.5 m) wide. Constant contact only complying with UL 325/2010.

Electric sensing edge monitored to meet UL 325/2010.

* + - * 1. Operator Controls:

\*\* NOTE TO SPECIFIER \*\* Select one of the following control paragraphs and delete those not required.

Push-button operated control stations with open, close, and stop buttons.

Key operated control stations with open, close, and stop buttons.

Push-button and key operated control stations with open, close, and stop buttons.

\*\* NOTE TO SPECIFIER \*\* Select one of the following mounting paragraphs and delete the one not required.

Surface mounting.

Flush mounting.

\*\* NOTE TO SPECIFIER \*\* Select one of the following mounting location paragraphs and delete those not required.

Interior location.

Exterior location.

Both interior and exterior location.

\*\* NOTE TO SPECIFIER \*\* Select special operation features from the following paragraphs and delete those not required. Delete entirely if not required.

* + - * 1. Special Operation:

Radio control operation.

Pull switch.

Vehicle detector operation.

Card reader control.

Photocell operation.

Door timer operation.

Explosion and dust ignition proof control wiring.

* + - 1. Finish and Color: Baked-on polyester over epoxy primer.

\*\* NOTE TO SPECIFIER \*\* Select one of the following exterior finish and color paragraphs and delete the ones not required. Interior is available in White only.

Interior color, White.

Exterior color, F/CR Beige.

Exterior color, F/CR Brown.

Exterior color, F/CR Hunter Green.

Exterior color, White.

Exterior color, Almond.

Exterior color, Sandtone.

Exterior color, Tera-Bronze.

\*\* NOTE TO SPECIFIER \*\* The following paragraph is optional. Contact the manufacturer for additional information regarding the options available. Include the Design/Performance Requirements in Part 1 of this specification.

* + - 1. Windload Design: Provide to meet the Design/Performance requirements specified. Deflection of door in the horizontal position will not exceed 1/120 of the door width, please consult factory for unusual requirements
			2. Lock:

\*\* NOTE TO SPECIFIER \*\* Select one of the following paragraphs and delete the ones not required. Interior mounted slide lock is standard.

* + - * 1. Interior mounted slide lock.
				2. Interior mounted slide lock with interlock switch for automatic operator.
				3. Keyed lock.
				4. Keyed lock with interlock switch for automatic operator.
			1. Weatherstripping:

\*\* NOTE TO SPECIFIER \*\* Select the seals required from the following paragraphs and delete those not required. Bottom seal and head seals are standard. Header seals and jamb seals are optional.

* + - * 1. PVC strip between sections meeting section caps fitted inside every joint.
				2. Bottom weatherstrip U shape astragal fastened to the bottom of the door with an extruded aluminum holder.
				3. Flexible Header seal.
				4. Jamb seals.
		1. Energy Saver 3 inch Overhead Doors: Sectional steel commercial overhead doors as manufactured by Midland Garage Door Mfg. Co.
			1. Sections: Roll formed and pressure bonded to a rigid closed cell extruded polystyrene core with a PVC thermal break to prevent heat or cold conductivity.

\*\* NOTE TO SPECIFIER \*\* Select one of the following optional material paragraphs if required. Delete the one not applicable.

* + - * 1. Material: Interior and exterior 25 gauge, hot dipped, galvanized G60 (minimum) steel with a yield strength of 33,000 psi, complying with ASTM A 653 and ASTM A 924.
				2. Material: Interior 25 gauge and exterior 20 gauge, hot dipped, galvanized G60 (minimum) steel with a yield strength of 33,000 psi, complying with ASTM A 653 and ASTM A 924.
				3. Material: Interior and exterior 20 gauge, hot dipped, galvanized G60 (minimum) steel with a yield strength of 33,000 psi, complying with ASTM A 653 and ASTM A 924.
				4. Insulation: Rigid closed cell extruded polystyrene free of CFCs and HCFCs with a calculated R-Value of 17.05 and a U-Value of .06.
				5. Panel Thickness: 3 inches (76 mm).
				6. Interior and Exterior Surface: Embossed pebble-grained texture.
				7. End Stiles: 16 gauge steel with thermal break.

\*\* NOTE TO SPECIFIER \*\* Select one of the following optional window paragraphs if required. Delete if not applicable.

* + - 1. Window:
				1. Plain 24 inch by 7 inch (610 mm by 178 mm) size with 1/2 inch (12.5 mm) Insulated glazing.
				2. Plain 24 inch by 12 inch (610 mm by 305 mm) size with 1/2 inch (12.5 mm) Insulated glazing.
				3. Plain 44 inch by 15 inch (1118 mm by 381 mm) size with 1/2 inch (12.5 mm) Insulated glazing.
				4. Full Vision section comprised of aluminum alloy. Stiles and rails joined together with 1/4 inch (6.5 mm) rods. Maximum width of 20 feet 2 inches.

\*\* NOTE TO SPECIFIER \*\* Select one of the following full vision finish and glass types if full vision is required. Delete if not applicable.

Finish:

White powder coated.

Mill aluminum.

Glass type:

1/2 inch insulated glass.

1/8 inch non-insulated tempered glass.

1/4 inch non-insulated tempered glass.

1/2 inch insulated tempered glass.

* + - 1. Spring Counterbalance: Sized to weight of the door with oil tempered, helical wound torsion springs mounted on a ball bearing cross header shaft and engineered to comply with ANSI/DASMA 102-1996. Galvanized aircraft type lifting cables with minimum safety factor of 8 to 1 and cast aluminum drums are standard.

\*\* NOTE TO SPECIFIER \*\* Select one of the following paragraphs and delete the ones not required. 10,000 cycles are standard.

Standard cycle spring: 10,000 cycles.

High cycle spring: 25,000 cycles.

High cycle spring: 50,000 cycles.

High cycle spring: 75,000 cycles.

High cycle spring: 100,000 cycles.

* + - 1. Hardware: Hinges and fixtures are G60 galvanized steel complying with ASTM A 36 and ASTM A 123. Rollers provided with full floating ball bearing with hardened steel races. Provide roller sizes adequate for design requirements and limitations.
			2. Track: Provide track as recommended by manufacturer to suit loading required and clearances available.

\*\* NOTE TO SPECIFIER \*\* Edit the following track size, type and mounting paragraphs as required and delete the ones not required.

* + - * 1. Size:

2 inch (51 mm).

3 inch (76 mm).

* + - * 1. Type:

Regular clearance

Low headroom.

Lift clearance

Full Vertical lift.

Incline.

* + - * 1. Mounting:

Bracket mounted using track brackets for use on 2 inch track with wood jambs.

Continuous angle mounted for use on wood jambs.

Continuous reverse angle mounted for use on steel jambs, sections to overlap jambs 1 inch on each side.

\*\* NOTE TO SPECIFIER \*\* Select one of the following Operation paragraphs and delete the ones not required. Manual pull rope is standard.

* + - 1. Manual Operation: Pull rope.
			2. Manual Operation: Chain hoist.
			3. Electric Motor Operation: Provide UL listed electric operator, size and type as recommended by manufacturer to move door in either direction at not less than 2/3 foot nor more than 1 foot per second. Operator shall meet UL325/2010 requirements for continuous monitoring of safety devices.
				1. Entrapment Protection: Required for momentary contact, includes radio control operation.

\*\* NOTE TO SPECIFIER \*\* Select one of the following protection paragraphs and delete those not required.

Photoelectric sensors monitored to meet UL 325/2010.

Pneumatic sensing edge up to 18 feet (5.5 m) wide. Constant contact only complying with UL 325/2010.

Electric sensing edge monitored to meet UL 325/2010.

* + - * 1. Operator Controls:

\*\* NOTE TO SPECIFIER \*\* Select one of the following control paragraphs and delete those not required.

Push-button operated control stations with open, close, and stop buttons.

Key operated control stations with open, close, and stop buttons.

Push-button and key operated control stations with open, close, and stop buttons.

\*\* NOTE TO SPECIFIER \*\* Select one of the following mounting paragraphs and delete the one not required.

Surface mounting.

Flush mounting.

\*\* NOTE TO SPECIFIER \*\* Select one of the following mounting location paragraphs and delete those not required.

Interior location.

Exterior location.

Both interior and exterior location.

\*\* NOTE TO SPECIFIER \*\* Select special operation features from the following paragraphs and delete those not required. Delete entirely if not required.

* + - * 1. Special Operation:

Radio control operation.

Pull switch.

Vehicle detector operation.

Card reader control.

Photocell operation.

Door timer operation.

Explosion and dust ignition proof control wiring.

* + - 1. Finish and Color: Baked-on polyester over epoxy primer.

\*\* NOTE TO SPECIFIER \*\* Select one of the following exterior finish and color paragraphs and delete the ones not required. Interior is available in White only.

Interior color, White.

Exterior color, F/CR Beige.

Exterior color, F/CR Brown.

Exterior color, F/CR Hunter Green.

Exterior color, White.

Exterior color, Almond.

Exterior color, Sandtone.

Exterior color, Tera-Bronze.

\*\* NOTE TO SPECIFIER \*\* The following paragraph is optional. Contact the manufacturer for additional information regarding the options available. Include the Design/Performance Requirements in Part 1 of this specification.

* + - 1. Windload Design: Provide to meet the Design/Performance requirements specified. Deflection of door in the horizontal position will not exceed 1/120 of the door width, please consult factory for unusual requirements
			2. Lock:

\*\* NOTE TO SPECIFIER \*\* Select one of the following paragraphs and delete the ones not required. Interior mounted slide lock is standard.

* + - * 1. Interior mounted slide lock.
				2. Interior mounted slide lock with interlock switch for automatic operator.
				3. Keyed lock.
				4. Keyed lock with interlock switch for automatic operator.
				5. Mini warehouse lock.
			1. Weatherstripping:

\*\* NOTE TO SPECIFIER \*\* Select the seals required from the following paragraphs and delete those not required. Bottom seal and head seals are standard. Header seals and jamb seals are optional.

* + - * 1. PVC strip between sections meeting section caps fitted inside every joint.
				2. Bottom weatherstrip U shape astragal fastened to the bottom of the door with an extruded aluminum holder.
				3. Flexible Header seal.
				4. Jamb seals.
		1. Insulated 1-3/4 inch Overhead Doors: CU175 1-3/4 inch Polyurethane Sectional steel commercial overhead doors as manufactured by Midland Garage Door Mfg. Co.
			1. Sections: Roll formed and pressure bonded to a polystyrene core with a PVC thermal break to prevent heat or cold conductivity.
				1. Material: Interior 26 gauge and exterior 26 gauge, hot dipped, galvanized G60 (minimum) steel with a yield strength of 33,000 psi, complying with ASTM A 653 and ASTM A 924.
				2. Insulation: Foam in place urethane free of CFCs and HCFCs with a calculated R-Value of 16.03 and a U-Value of .067 and complies with ASTM E 84 flame-spread and smoke-developed.
				3. Panel Thickness: 1-3/4 inches (44 mm).
				4. Interior and Exterior Surface: Embossed pebble-grained texture.
				5. End Stiles: 16 gauge steel with thermal break.

\*\* NOTE TO SPECIFIER \*\* Select one of the following optional window paragraphs if required. Delete if not applicable.

* + - 1. Window:
				1. Plain 24 inch by 7 inch (610 mm by 178 mm) size with 1/2 inch (12.5 mm) Insulated glazing.
				2. Plain 24 inch by 12 inch (610 mm by 305 mm) size with 1/2 inch (12.5 mm) Insulated glazing.
			2. Spring Counterbalance: Sized to weight of the door with oil tempered, helical wound torsion springs mounted on a ball bearing cross header shaft and engineered to comply with ANSI/DASMA 102-1996. Galvanized aircraft type lifting cables with minimum safety factor of 8 to 1 and cast aluminum drums are standard.

\*\* NOTE TO SPECIFIER \*\* Select one of the following paragraphs and delete the ones not required. 10,000 cycles are standard.

Standard cycle spring: 10,000 cycles.

High cycle spring: 25,000 cycles.

High cycle spring: 50,000 cycles.

High cycle spring: 75,000 cycles.

High cycle spring: 100,000 cycles.

* + - 1. Hardware: Hinges and fixtures are G60 galvanized steel complying with ASTM A 36 and ASTM A 123. Rollers provided with full floating ball bearing with hardened steel races. Provide roller sizes adequate for design requirements and limitations.
			2. Track: Provide track as recommended by manufacturer to suit loading required and clearances available.

\*\* NOTE TO SPECIFIER \*\* Edit the following track size and type paragraphs as required and delete the ones not required.

* + - * 1. Size:

2 inch (51 mm).

3 inch (76 mm).

* + - * 1. Type:

Regular clearance

Low headroom.

Lift clearance

Full Vertical lift.

Incline lift.

* + - * 1. Mounting:

Bracket mounted using track brackets for use on 2" track with wood jambs.

Continuous angle mounted for use on wood jambs.

Continuous reverse angle mounted for use on steel jambs, sections to overlap jambs 1 inch on each side.

\*\* NOTE TO SPECIFIER \*\* Select one of the following Operation paragraphs and delete the ones not required. Manual pull rope is standard.

* + - 1. Manual Operation: Pull rope.
			2. Manual Operation: Chain hoist.
			3. Electric Motor Operation: Provide UL listed electric operator, size and type as recommended by manufacturer to move door in either direction at not less than 2/3 foot nor more than 1 foot per second. Operator shall meet UL325/2010 requirements for continuous monitoring of safety devices.
				1. Entrapment Protection: Required for momentary contact, includes radio control operation.

\*\* NOTE TO SPECIFIER \*\* Select one of the following protection paragraphs and delete those not required.

Photoelectric sensors monitored to meet UL 325/2010.

Pneumatic sensing edge up to 18 feet (5.5 m) wide. Constant contact only complying with UL 325/2010.

Electric sensing edge monitored to meet UL 325/2010.

* + - * 1. Operator Controls:

\*\* NOTE TO SPECIFIER \*\* Select one of the following control paragraphs and delete those not required.

Push-button operated control stations with open, close, and stop buttons.

Key operated control stations with open, close, and stop buttons.

Push-button and key operated control stations with open, close, and stop buttons.

\*\* NOTE TO SPECIFIER \*\* Select one of the following mounting paragraphs and delete the one not required.

Surface mounting.

Flush mounting.

\*\* NOTE TO SPECIFIER \*\* Select one of the following mounting location paragraphs and delete those not required.

Interior location.

Exterior location.

Both interior and exterior location.

\*\* NOTE TO SPECIFIER \*\* Select special operation features from the following paragraphs and delete those not required. Delete entirely if not required.

* + - * 1. Special Operation:

Radio control operation.

Pull switch.

Vehicle detector operation.

Card reader control.

Photocell operation.

Door timer operation.

Explosion and dust ignition proof control wiring.

* + - 1. Finish and Color: Baked-on polyester over epoxy primer.

Interior color, White.

Exterior color, White.

\*\* NOTE TO SPECIFIER \*\* Contact the manufacturer for additional information regarding the options available. Coordinate with the Design/Performance Requirements in Part 1 of this specification.

* + - 1. Windload Design: Doors designed to meet or exceed industry standards for wind loads (ANSI/ DASMA 102-1996), uniform pressure (velocity pressure) of 20 lbf/sq. ft. acting inward and outward. Deflection of door in the horizontal position will not exceed 1/120 of the door width.
			2. Air Infiltration: Construct doors with a PVC strip and cap between sections to resist air infiltration and provide a tight fit, complying with ASTM E 283, maximum rate: 0.08 cfm@15mph and 0.08 cfm@25mph.
			3. Lock:

\*\* NOTE TO SPECIFIER \*\* Select one of the following paragraphs and delete the ones not required. Interior mounted slide lock is standard.

* + - * 1. Interior mounted slide lock.
				2. Interior mounted slide lock with interlock switch for automatic operator.
				3. Keyed lock.
				4. Keyed lock with interlock switch for automatic operator.
				5. Mini warehouse lock.
			1. Weatherstripping:

\*\* NOTE TO SPECIFIER \*\* Select the seals required from the following paragraphs and delete those not required. Bottom seal and meeting section caps are standard. Header seals and jamb seals are optional.

* + - * 1. PVC strip between sections meeting section caps fitted inside every joint.
				2. Bottom weatherstrip U shape astragal fastened to the bottom of the door with an extruded aluminum holder.
				3. Flexible Header seal.
				4. Jamb seals.
1. EXECUTION
	1. EXAMINATION
		1. Do not begin installation until openings have been properly prepared.
		2. Verify wall openings are ready to receive work and opening dimensions and tolerances are within specified limits.
		3. Verify electric power is available and of correct characteristics.
		4. If 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. Install overhead doors and track in accordance with approved shop drawings and the manufacturer's printed instructions.
		2. Coordinate installation with adjacent work to ensure proper clearances and allow for maintenance.
		3. Anchor assembly to wall construction and building framing without distortion or stress.
		4. Securely brace door tracks suspended from structure. Secure tracks to structural members only.
		5. Fit and align door assembly including hardware.

\*\* NOTE TO SPECIFIER \*\* Select one of the following paragraph for power operated doors. Delete if not required.

* + 1. Coordinate installation of electrical service. Complete power and control wiring from disconnect to unit components.
	1. CLEANING AND ADJUSTING
		1. Adjust door assembly to smooth operation and in full contact with weatherstripping.
		2. Clean doors, frames and glass.
		3. Remove temporary labels and visible markings.
	2. PROTECTION
		1. Do not permit construction traffic through overhead door openings after adjustment and cleaning.
		2. Protect installed products until completion of project.
		3. Touch-up, damaged coatings and finishes and repair minor damage before Substantial Completion.

END OF SECTION