



SECTION 08370 (08 37 00)

GARAGE DOORS

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**** NOTE TO SPECIFIER ** C.H.I. Overhead Doors; Overhead Doors.**

This section is based on the products of C.H.I. Overhead Doors, which is located at:
1485 Sunrise Drive.
Arthur, IL 61911.
Tel: (800) 677-2650.
Fax: (800) 738-5006.
E-mail: aia@chiohd.com
Web: www.chiohd.com.
[Click Here] for more information

C.H.I. Overhead Doors, a NUCOR (NYSE: NUE) company, has been manufacturing overhead doors for over 40 years. Through our authorized dealer network across North America, you can access our entire product line including commercial and residential sectional doors, rolling service and fire doors or shutters, and high-performance doors. C.H.I. integrates premium-quality materials with superior designs, workmanship, and a strong focus on end user satisfaction. Dedicated to continuing the best customer service and dealer support in the industry, it is apparent why C.H.I. is referred to as "The Door to Quality". C.H.I. is headquartered in Arthur, IL with additional manufacturing in Terre Haute, IN. For more information visit chiohd.com.

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. ALUMINUM DOORS

1.2 RELATED SECTIONS

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

- A. Section 05 10 00 - Structural Metal Framing.
- B. Section 06 10 00 - Rough Carpentry.
- C. Section 09 90 00 - Painting and Coating.
- D. Section 26 05 00 - Common Work Results for Electrical.

1.3 REFERENCES

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

- A. America National Standards Institute (ANSI) / Door & Access Systems Manufacturers Association, International (DASMA):

1. DASMA Thermal Performance Verification Program.
 2. ANSI/DASMA 105 - Test Method For Thermal Transmittance And Air Infiltration Of Garage Doors.
 3. ANSI/DASMA 108 – Determination of Structural Performance Under Uniform Static Air Pressure Difference
 4. ANSI/DASMA 115 – Determination of Structural Performance Under Missile Impact and Cyclic Wind Pressure
 5. ANSI/DASMA 163 - R-Value and U-Factor As Applied To A Residential or Commercial Garage Door.
- B. ASTM International (ASTM):
1. ASTM A653/A653M - Standard Specification for Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
 2. ASTM B209 - Standard Specification for Aluminum-Alloy Sheet and Plate.
 3. ASTM B221 - Standard Specification for Aluminum-Alloy Extruded Bars, Rods, Wires, Shapes and Tubes.
 4. ASTM C518 - Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus.
 5. ASTM E283 - Standard Test Method for Determining Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen
 6. ASTM E330 – Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference.
 7. ASTM E1886 – Standard Test Method for Performance of Exterior Windows, Curtain Walls, Doors and Impact Protective Systems Impacted by Missile(s) and Exposed to Cyclic Pressure Differentials.
 8. ASTM E1996 – Standard Specification for Performance of Exterior Windows, Curtain Walls, Doors and Impact Protective Systems Impacted by Windborne Debris in Hurricanes.
- C. American Architects Manufacturers Association (AAMA):
1. AAMA 2604 – Voluntary Specification, Performance Requirements and Test Procedures for Pigmented Organic Coatings on Aluminum Extrusions and Panels (with Coil Coating Appendix).

1.4 SYSTEM DESCRIPTION

**** NOTE TO SPECIFIER ** Include the following paragraph for exterior doors.**

A. Design doors to withstand:

**** NOTE TO SPECIFIER ** Include the following paragraph for exterior doors.**

1. Positive and negative design wind loads in accordance with Building Code.
2. Positive and negative design wind loads of ___ PSF.

**** NOTE TO SPECIFIER ** Delete Windborne-Debris Impact Resistance if not required. Refer to Building Code.**

3. Windborne-Debris Impact Resistance: Provide impact -protective overhead coiling doors that pass ASTM E1886 missile -impact and cyclic -pressure tests according to ASTM E1996 for Wind Zone ___ for basic protection.

**** NOTE TO SPECIFIER ** Delete cycle life options not required. 10,000 cycles is standard.**

4. Cycle life of 10,000 cycles.
5. Cycle life of 25,000 cycles.
6. Cycle life of 50,000 cycles.
7. Cycle life of 100,000 cycles.
8. Cycle life of ___ cycles.

B. Door Opening and Closing:

**** NOTE TO SPECIFIER ** Delete operation options not required.**

1. Operation: Electric.
2. Operation: Manual.
3. Operation: Chain hoist.

C. Track and Operating Hardware:

**** NOTE TO SPECIFIER ** Delete the track type options not required.**

1. Standard lift type.
2. Vertical lift type.
3. High lift type.
4. Follow Roof/Incline pitch type.
5. Low headroom type

1.5 SUBMITTALS

A. Submit under provisions of Section 01 30 00 - Administrative Requirements.

B. Shop Drawings: Indicate opening dimensions and required tolerances, jamb connection details, anchorage spacing, hardware locations, installation details, and special conditions.

C. Product Data: Provide information on components, applications, hardware and accessories.

**** NOTE TO SPECIFIER ** Retain one or both paragraphs below. Retaining both paragraphs indicates "Two Stage Samples" process. Delete "Samples for Initial Selection" if colors have already been determined. Delete items not required.**

D. Samples for Initial Selection: Provide manufacturer's finish charts showing full range of colors and textures available for units with factory applied finishes.

E. Samples for Verification: Provide for each type of exposed finish on the following components in manufacturer's standard sizes:

1. Color Chip Sample.
2. Glass Chip Sample.

**** NOTE TO SPECIFIER ** Include the following for projects requiring LEED certification. Credits are available for the use of recycled materials and also for regional materials if the project is located within a 500-mile radius of the C.H.I. manufacturing facility in Arthur, IL.**

F. Sustainable Design Submittals:

1. Recycled products: Indicate percentage of recycled material used in the manufacturing of products and percentage classified as post-consumer.
2. Regional products: Indicate location of product manufacturer and distance from manufacturing facility to project site.

G. Closeout Submittals: Operation and maintenance data.

1.6 QUALITY ASSURANCE

A. Manufacturer Qualifications: Manufacturer shall provide an overhead door system capable of withstanding positive and negative wind loads as required by local building code for 10,000 cycles.

B. Installer Qualifications: Installer shall be authorized and qualified to install overhead door systems on the type and scope of project specified.

C. Source Limitations: Provide overhead sectional doors from one manufacturer for each type of door. Provide operators and other accessories from source acceptable to overhead door

manufacturer.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Store products in manufacturer's unopened packaging until ready for installation.
- B. Store and dispose of all materials in accordance with federal, state and local laws.

1.8 PROJECT CONDITIONS

- A. 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.

1.9 WARRANTY

- A. Provide an original of the manufacturer's limited warranty against manufacturing defect and product workmanship. See <https://www.chiohd.com/support/warranty> for full warranty details.
 - 1. Full-View Aluminum Doors
 - a. Aluminum Door Sections: Used in residential applications, under normal conditions, against defects in material and workmanship for as long as the original purchaser owns the home.
 - 1) Warranty Period: Limited Lifetime
 - b. Aluminum Finishes: Against cracking, checking, or peeling.
 - 1) Warranty Period: 6 years from date of manufacture.
 - c. Hardware: For defects in material or workmanship.
 - 1) Warranty Period: 6 years from date of manufacture.
 - d. Springs: For defects in materials or workmanship.
 - 1) Warranty Period: 3 years from date of manufacture.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Manufacturer: C.H.I. Overhead Doors, which is located at: 1485 Sunrise Dr.; Arthur, IL 61911; Toll Free Tel: 800-677-2650; Fax: 800-738-5006; Email: request info (aia@chiohd.com); Web: <http://www.chiohd.com>

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

- B. Substitutions: Not permitted.
- C. Requests for substitutions will be considered in accordance with provisions of Section 01 60 00 - Product Requirements.

**** NOTE TO SPECIFIER ** Delete article if not required. Then delete finish and glazing options not required.**

2.2 ALUMINUM DOORS

- A. Aluminum Full View Door:

**** NOTE TO SPECIFIER ** Delete model option not required.**

- 1. Model 3295. Non-insulated Aluminum Full View.
 - a. U-Factor: 0.92 with 1/2 inch (13 mm) insulated glass per ANSI/DASMA 105.
 - b. Air Filtration 0.79 per ANSI/DASMA 105, ASTM E283.
- 2. Additional Product Features
 - a. Door Size (WxH): Standard up to 24 ft 2 inches (7.37 m) x 16 ft 0 inches (4.88 m). Larger widths not available. Consult with C.H.I. up to 20 ft 0 inches (6.10m)

- tall.
- b. Material: Extruded 6063-T6 Aluminum
- c. Thickness: 2 inches (51 mm)
- d. Joints: Tongue and groove.
- e. STC rating of 27.
- f. Center Stiles: 2 inch (51 mm) face, thru bolted rails.

**** NOTE TO SPECIFIER ** Delete end stile option not required. 4 inch is standard up to 16 ft 2 inches (4.93 m). 8 inch is optional up to 16 ft 2 inches (4.39 m) and standard for over 16 ft 3 inches (4.95 m).**

- g. End Stiles: 4 inch (102 mm) face, thru bolted rails
- h. End Stiles: 8 inch (203 mm) face, thru bolted rails
- i. Intermediate Rails: 2 inch (51 mm) by full width of section.

**** NOTE TO SPECIFIER ** Delete bottom rail option not required. 4 inch is standard up to 16 ft 2 inches (4.93 m). 8 inch is optional up to 16 ft 2 inches (4.39 m) and standard for over 18 ft 3 inches (5.56 m). Between 16 ft 3 inches (4.95 m) and 18 ft 2 inches (5.54 m), rail based on glass selection.**

- j. Bottom Rail: 4 inch (102 mm) by full width of section.
- k. Bottom Rail: 8 inch (203 mm) by full width of section.

**** NOTE TO SPECIFIER ** Delete top rail option not required. 4 inch is standard up to 20 ft 2 inches (6.15 m). 8 inch is optional up to 20 ft 2 inches (6.15 m) and standard for over 20 ft 3 inches (6.17 m).**

- l. Top Rail: 4 inch (102 mm) by full width of section.
- m. Top Rail: 8 inch (203 mm) by full width of section
- n. Plank Sections: 18 inches (457 mm), 21 inches (533 mm) and 24 inches (610 mm) based on overall door height. Consult factory for custom height sections.

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

- o. Finish: Clear anodized.
- p. Finish: White powder coat.
- q. Finish: Black powder coat.
- r. Finish: Powder Coat RAL No. _____.

**** NOTE TO SPECIFIER ** Optional. Delete locking option if not required.**

- s. Locking: Inside slide lock.

**** NOTE TO SPECIFIER ** Optional. Delete Glazing options not required. If combination of aluminum panels and glazing desired, specify sections for glazing type.**

- t. Glazing: 1/8 inch (3 mm) DSB.
- u. Glazing: 1/8 inch (3 mm) tinted.
- v. Glazing: 1/8 inch (3 mm) frosted.
- w. Glazing: 1/8 inch (3 mm) polycarbonate.
- x. Glazing: 1/8 inch (3 mm) tempered.
- y. Glazing: 1/8 inch (3 mm) tempered tinted.
- z. Glazing: 1/8 inch (3 mm) tempered frosted.
- aa. Glazing: 1/4 inch (6 mm) tempered.
- bb. Glazing: 1/4 inch (6 mm) tempered tinted.
- cc. Glazing: 1/4 inch (6 mm) tempered frosted.
- dd. Glazing: 1/4 inch (6 mm) clear laminated.
- ee. Glazing: 1/4 inch (6 mm) white laminated.
- ff. Glazing: 1/2 inch (13 mm) insulated glass.
- gg. Glazing: 1/2 inch (13 mm) tinted insulated.
- hh. Glazing: 1/2 inch (13 mm) frosted insulated.
- ii. Glazing: 1/2 inch (13 mm) Low E insulated.
- jj. Glazing: 1/2 inch (13 mm) tempered insulated.
- kk. Glazing: 1/2 inch (13 mm) tempered Low E insulated.
- ll. Glazing: 1/2 inch (13 mm) tempered tinted insulated.
- mm. Glazing: 1/2 inch (13 mm) tempered frosted insulated.
- nn. Glazing: 3/8 inch (10 mm) triple wall poly insulated.
- oo. Glazing: 16-gauge 0.050 inch (1.27 mm) aluminum panel.
- pp. Glazing: 16-gauge 0.050 inch (1.27 mm) aluminum panel with 3 inch (76 mm)

- exhaust port.
- qq. Glazing: 16-gauge 0.050 inch (1.27 mm) aluminum panel with 4 inch (102 mm) exhaust port.
 - rr. Glazing: Insulated aluminum panel - 3/8 inch (9.5 mm) polystyrene insulation sandwiched between 16-gauge 0.050 inch (1.27 mm) aluminum panels.
 - ss. Glazing: Insulated aluminum panel with 3 inch (76 mm) exhaust port - 3/8 inch (9.5 mm) polystyrene insulation sandwiched between 16-gauge 0.050 inch (1.27 mm) aluminum panels with 3 inch (76 mm) exhaust port.
 - tt. Glazing: Insulated aluminum panel with 4 inch (102 mm) exhaust port - 3/8 inch (9.5 mm) polystyrene insulation sandwiched between 16-gauge 0.050 inch (1.27 mm) aluminum panels with 4 inch (102 mm) exhaust port.
 - uu. Glazing: Open for 1/8 inch (3 mm) field glazing.
 - vv. Glazing: Open for 1/4 inch (6 mm) field glazing.
 - ww. Glazing: Open for 1/2 inch (13 mm) field glazing.

**** NOTE TO SPECIFIER ** Delete weather seal options not required.**

- xx. Weather Seal: U-shaped bottom astragal with aluminum retainer (standard).
- yy. Weather Seal: Integrated bulb seal in between rails (standard).
- zz. Weather Seal: Top Seal
- aaa. Weather Seal: Header and Jambs. Flexible one-piece vinyl extrusion.

**** NOTE TO SPECIFIER ** Delete operation options not required.**

- bbb. Operation: Manual.
- ccc. Operation: Chain hoist. Not available for standard lift or low headroom track options.
- ddd. Operation: Electric.

**** NOTE TO SPECIFIER ** Delete jamb material option not required.**

- eee. Jamb Material: Wood.
- fff. Jamb Material: Steel – Sections will be 2 inches (51 mm) wider than opening.

**** NOTE TO SPECIFIER ** Delete track type options not required.**

- ggg. Track Type: Standard Lift, 15 inches (381 mm) radius standard. Consult factory for openings more than 300 square feet (27.9 square meters).
- hhh. Track Type: Vertical Lift. Consult factory for doors over 16 ft (4.877 mm) or openings more than 300 square feet (27.9 square meters).
- iii. Track Type: High Lift. Consult factory for more than 120 inches (3.05 m) or openings more than 300 square feet (27.9 square meters). Specify Lift Amount: _____ inches (____ mm).
- jjj. Track Type: Follow Roof Line / Incline. Available in pitch increments of 0.5 from 0.5/12 to 12/12. Consult factory if less than 15 inches (381 mm) of headroom, openings more than 300 square feet (27.9 square meters) or pitch greater than 6/12.
- kkk. Track Type: Low Head Room.

**** NOTE TO SPECIFIER ** Delete front mount options not required.**

- 1) Front Mount: 12 inches (305 mm) Radius, 2 inches Track Only.
- 2) Front Mount: 15 inches (381 mm) Radius.
- 3) Rear Mount: 12 inches (305 mm) Radius, 2 inches Track Only.
- 4) Rear Mount: 15 inches (381 mm) Radius.

**** NOTE TO SPECIFIER ** Delete track appearance options not required. Galvanized is standard.**

- lll. Track Appearance: Galvanized.
- mmm. Track Appearance – White Powder Coat.
- nnn. Track Appearance – RAL Powder Coat No. _____.
- ooo. Track Size: Track mounting and size is based on door size and weight. Lower track is adjustable for weathertight fit. Optional to upgrade to clip angle or continuous when not standard. Track will be minimum 16-gauge, 0.055 inch (1.39mm) galvanized steel. Gauge will increase based on design requirements. 2-inch (51 mm) track for 2 inch (51 mm) rollers or 3 inch (76 mm) track with 3

- inch (76 mm) rollers.
- ppp. Roller Assemblies: Galvanized steel adjustable roller holders with floating hardened steel bearing rollers, located at top and bottom of each side of each section. Size and type to be determined by the manufacturer based on door size and weight.

**** NOTE TO SPECIFIER ** Delete hinges option not required. 14 gauge is standard. 11-gauge is optional up to 24 ft 2 inches (7.37 m) and standard for doors over 24 ft 2 inches (7.37 m).**

- qqq. Hinges: 14-gauge, 0.070 inch (1.77 mm) galvanized steel.
- rrr. Hinges: 11-gauge, 0.114 inch (2.89 mm) galvanized steel. Heavy duty.
- sss. Spring Counterbalance: Helically-wound, oil-tempered torsion springs mounted on cross-header shaft supported by galvanized steel ball bearing end plates and center carrier brackets as required. Springs to be individually calibrated to each door. Spring shafts are hollow or solid based on door size and weight. Counterbalance transferred to doors via aircraft quality braided steel lift cables.
- ttt. Spring Cycle Life: 10,000 cycles standard. Consult factory for extended life cycles up to 100,000 cycles. There are limitations based on door size and weight.

2.3 COMPONENTS

**** NOTE TO SPECIFIER ** Track Section below applies to all sections except Residential Builder Doors.**

A. Track

**** NOTE TO SPECIFIER ** Delete track type options not required.**

1. Track Type: Standard Lift, 12 inches (305 mm) radius standard.
2. Track Type: Vertical Lift.
3. Track Type: High Lift.
4. Track Type: Follow Roof Line / Incline. Available in pitch increments of 0.5 from 0.5/12 to 12/12. Consult factory if less than 15 inches (381 mm) of headroom, openings more than 300 square feet (27.9 square meters) or pitch greater than 6/12.
5. Track Type: Low Head Room.

**** NOTE TO SPECIFIER ** Delete mount options not required.**

- a. Front Mount: 12 inches (305 mm) Radius, 2 inches (51 mm) Track Only.
- b. Front Mount: 15 inches (381 mm) Radius.
- c. Rear Mount: 12 inches (305 mm) Radius, 2 inches (51 mm) Track Only.
- d. Rear Mount: 15 inches (381 mm) Radius.

**** NOTE TO SPECIFIER ** Delete track appearance options not required. Galvanized is standard.**

6. Track Appearance – Galvanized.
7. Track Appearance – White Powder Coat.
8. Track Appearance – RAL Powder Coat No. _____.
9. Track Size: Track mounting and size is based on door size and weight. Lower track is adjustable for weathertight fit. Optional to upgrade to clip angle or continuous when not standard. Track will be minimum 16-gauge, 0.055 inch (1.39mm) galvanized steel. Gauge will increase based on design requirements. 2-inch (51 mm) track for 2 inch (51 mm) rollers or 3 inch (76 mm) track with 3 inch (76 mm) rollers.
10. Roller Assemblies: Galvanized steel adjustable roller holders with floating hardened steel bearing rollers, located at top and bottom of each side of each section. Size and type to be determined by the manufacturer based on door size and weight.
11. Spring Counterbalance: Helically-wound, oil-tempered torsion springs mounted on cross-header shaft supported by galvanized steel ball bearing end plates and center carrier brackets as required. Springs to be individually calibrated to each door. Spring shafts are hollow or solid based on door size and weight. Counterbalance transferred to doors via aircraft quality braided steel lift cables.
12. Spring Cycle Life: 10,000 cycles standard. Consult factory for extended life cycles up

to 100,000 cycles. There are limitations based on door size and weight.

B. Electric Operator:

1. Externally mounted on drive side of door.

**** NOTE TO SPECIFIER ** Delete power supply options not required.**

2. Power Supply: 115 Volts AC single phase.
3. Power Supply: 208/230 Volts AC single or three phase.
4. Power Supply: 460 Volts AC three phase.
5. Manually operable in case of power failure.

**** NOTE TO SPECIFIER ** Delete control station power option and control station options not required.**

6. Control Station Power: 24 VDC.
7. Control Station Power: 115 VAC.
8. Control Station: Keyed Switch.
9. Control Station: Two button (Open / Close) station.
10. Control Station: Three button (Open / Stop / Close) station.

**** NOTE TO SPECIFIER ** Delete paragraph if no safety device is specified for electrically controlled units or delete safety device options not required.**

C. Safety Reversing Device:

1. Safety Device: Photoelectric sensor; detect obstruction and reverse door without requiring door to contact obstruction.
2. Safety Device: Electric pneumatic edge; detect obstruction and reverse door upon contact with pneumatic hose.
3. Safety Device: Electric edge; detect obstruction and reverse door upon contact with electric strips in vinyl housing.
4. Safety Device: Electric edge; fail-safe, self-monitoring.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Do not begin installation until work areas have been properly prepared.
- B. If preparation is the responsibility of another installer, notify Architect of unsatisfactory conditions before proceeding.

3.2 INSTALLATION

- A. Install door assembly in accordance with manufacturer's instructions.
- B. Anchor to adjacent construction without distortion or stress.
- C. Securely brace door tracks suspended from structure. Secure tracks to structural members only.
- D. Fit and align door assembly including hardware, level and plumb, to provide smooth operation.

**** NOTE TO SPECIFIER ** Include the following paragraph if head and jamb weatherstripping is specified.**

- E. Position head and jamb weatherstripping to contact door sections when closed; secure in position.

**** NOTE TO SPECIFIER ** Include the following paragraph if electrically operated doors are specified.**

- F. Make wiring connections between power supply and operator and between operator and controls.

3.3 ADJUSTING

- A. Adjust to operate smoothly throughout full operating range.

3.4 PROTECTION

- A. Protect installed products until completion of project.
- B. Touch-up, repair or replace damaged products before substantial completion.

END OF SECTION