



PURCHASING DEPARTMENT

COLE COUNTY COMMISSION

1736 Southridge Dr. | Jefferson City, MO 65109
Tel 573-634-9168 | Fax 573-634-5666
jprenger@colecouny.org

To: All Interested Parties
From: Jennifer Prenger, Cole County Purchasing Agent
Date: April 4, 2016
Re: Addendum One to Cole County Bid No. 2016-18, Refurbishing Back Portion of Public Works Building & Replacing Garage and Walk-Through Doors

The following information hereby becomes part of the above-referenced Request for Bid and shall be fully considered in the preparation of your response.

1. *What is the required timeframe for this project?*
 - A. **This project is to be completed no later than August 31, 2016.**

2. *What sizes are the walk-out doors and what is the quantity?*
 - A. **A total of two walk-out doors will need to be replaced. The rear walk out door is a 2 foot 8 inch door, seven foot tall with a 24 inch by 38 inch window and a single knock out for a single door knob; the front bay door is a 3 foot by 7 foot door with a double knock out for a door knob and a dead bolt. Both doors are to be commercial steel with new metal jambs and thresholds and both are to include new door closures.**

3. *What kind of exterior paneling should be used?*
 - A. **Butler Stylwall II fluted wall system, panel dimensions to be 16” with interlocking joint. Panel shall be one piece from base to top of wall. Material shall be stucco embossed; panel material shall be prefinished in standard and Butler-Cote colors.**

Panels shall be sealed with a molded foam closer block that fits panel configuration at the bottom of the panel.

All exterior trims shall match exterior color.

Panels are to be insulated with WMP-VR insulation facing over 3” of blanket fiberglass insulation.

4. *What garage doors should be used?*
 - A. **Please see Attachment A for minimum specifications. The CHI brand is for reference only; equivalent alternates will be acceptable.**

Any listed manufacturer/model number(s) or a definite reference to a particular item or piece of equipment is intended to establish a minimally acceptable design, type, quality, functional capacity, and/or desired performance level. It is to be understood that any equivalent alternate which will perform adequately the duties imposed by the general design may be proposed and bid so long as sufficient details necessary to establish equivalency are included in the submission. Acceptance is subject to approval of the County which may request further information, sample(s) and/or a demonstration prior to bid award. Cole County shall be the sole judge of equivalency.

As an option, please quote the additional cost, per garage door, for the addition of one row of garage door windows.

5. *Are garage doors to include new openers?*

A. Yes. They must be commercial openers and all switch gear must be replaced

6. *Are the gutters and downspouts to be replaced?*

A. Yes. Gutters, downspouts shall be Butler wide contour gutter 5" x 8½" with external collector boxes for wide gutter; downspouts to be Butler's 5" conductor pipe color to match existing. All gutter, downspouts and base trim to be galvanized pre-painted steel with Butler-Cote finish to match existing.

7. *Are the exterior lights to be replaced?*

A. Yes, with Atlas LED Wall Light WLD64LED.

8. *What should be done with the "office" garage doors?*

A. Cover with panel and trim out.

The bid receipt date and time HAVE NOT BEEN CHANGED; submissions will be received until Friday, April 22 at 9:00 a.m. The deadline for questions is April 15, 2016.

I/We have received Addendum Number One to Bid No. 2016-18 and have fully considered the information provided in preparing a response.

Name of Company

Agent and Title

Authorized Signature

SECTION 08300
SECTIONAL AND COILING OVERHEAD DOORS
Display hidden notes to specifier. (Don't know how? [Click Here](#))

Copyright 2016 ARCAT, Inc. - All rights reserved

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Sectional Overhead Doors.

1.2 RELATED SECTIONS

- A. Section 05100 - Structural Metal Framing.
- B. Section 06100 - Rough Carpentry.
- C. Section 09900 - Paints and Coatings.
- D. Section 16050 - Basic Electrical Materials and Methods.

1.3 REFERENCES

- A. ASTM A480/A480M-04; 2004 - Standard Specification for Flat-Rolled Stainless and Heat-Resisting Steel Plate, Sheet, and Strip.
- B. ASTM A653/A653M-03; 2003 - Standard Specification for Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.

1.4 SUBMITTALS

- A. Submit under provisions of Section 01300.
- 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, application, hardware and accessories.
- D. Closeout Submittals:
 - 1. Operation and maintenance data.

1.5 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Manufacturer shall provide a coiling door system capable of withstanding positive and negative design loads as required by local building code for 25,000 cycles.
- B. Installer Qualifications: Installer shall be authorized and qualified to install overhead door systems on the type and scope of project specified.

1.6 PERFORMANCE REQUIREMENTS

- A. Design doors to withstand positive and negative wind loads as calculated in accordance with applicable building code.
 - 1. Design Wind Load: _____ lb/sf.
 - 2. Test Wind Load: 1.5 times design wind load.

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 absolute limits.

1.9 WARRANTY

- A. Provide an original of the manufacturer's limited warranty against manufacturing defects and product workmanship.
 - 1. Sectional Door Warranty: 10 Years.

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: 800-590-0559; Fax: (217) 543-4454; Email:aia@chiohd.com; Web:www.chiohd.com
- B. Requests for substitutions will be considered in accordance with provisions of Section 01600.

2.2 MATERIALS

- A. Galvanized Steel Sheet:
 - 1. Galvanized commercial steel, (CS type) per ASTM A653/A653M, G90 and G60 coating class.
- B. Glazing: As listed in individual door sections.

2.3 INSULATED SANDWICH STYLE SECTIONAL DOORS

- A. Door Sections:
 - 1. Type: Micro-grooved sandwich style.
 - 2. Material: Galvanized steel.
 - 3. Gauge: 26 gauge exterior and 27 gauge interior.
 - 4. Thickness: Nominal 2 inches.
 - 5. Hinge attachment strips: Run full height of section in all hinge lines.
 - 6. Rails: Tongue-and-groove.
 - 7. End caps: Wrap-around box style, 20 gauge galvanized steel, full height of section.
 - 8. Insulation: Polyurethane, foamed-in-place, 95% closed cell with section thermal break, top and bottom of section.
- B. Operation and Construction:
 - 1. Electric operation.
 - 2. Track and Operating Hardware: High lift.
 - 3. Tracks: 2 inches wide, roll-formed 16 gauge galvanized steel, gauge adjusted per design requirements for doors up to 10 feet high, 14 gauge for doors exceeding 10 feet high.
 - 4. Hinge and Roller Assemblies: Heavy duty hinges and adjustable roller holders of galvanized steel, with floating hardened steel bearing rollers, located at top and

- bottom of each panel, each side.
- 5. Spring Counterbalance:
 - a. Oil tempered torsion springs mounted on cross-header shaft supported by galvanized steel ball bearing end plates and center carrier brackets as required.
 - b. Counterbalance transferred to doors via aircraft quality braided steel lift cables.
 - c. Counterbalance torsion springs designed for minimum 25,000 cycles.
- 6. Weatherstripping:
 - a. Bottom: Vinyl weatherseal, full width of door.
 - b. Head and Jamb: Flexible one-piece vinyl extrusions.
- C. Vision Lite Configuration
 - 1. Vision Lites: 12 inches by 24 inches set with silicone sealant and screws.
 - 2. Glazing Type: Insulating glass.
- D. Electric Operator:
 - 1. Type: Jackshaft or trolley.
 - 2. Power Supply: 115 Volts AC, 1 phase.
 - 3. Emergency Operation: Manually operable in case of power failure.
 - 4. Control Station: Standard 24 Volt three button (Open / Stop / Close) station.
- E. Safety Reversing Edge:
 - 1. Photoelectric Sensor: Detect obstruction and reverse door without requiring door to contact obstruction.
- F. Finish:
 - 1. Galvanized Steel for Exterior Panel Surfaces: Baked-on enamel primer and polyester finish coat.
 - a. Color: To be selected from manufacturer's standards.
 - 2. Galvanized Steel for Interior Panel Surfaces: Baked-on enamel primer.

PART 3 EXECUTION

3.1 INSTALLATION

- A. Install assembly in accordance with manufacturer's instructions.
- B. Anchor to adjacent construction without distortion or stress.
- C. Fit and align assembly including hardware, plumb, level and square to ensure smooth operation.
- D. Make wiring connections between power supply and operator and between operator and controls.

3.2 ADJUSTING

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

3.3 DEMONSTRATION

- A. Demonstrate proper operation to Owner.

END OF SECTION

Copyright 2014 AIA MasterSpec Premium 06/14
PRODUCT MASTERSPEC LICENSED BY ARCOM TO C.H.I. OVERHEAD DOORS.

Copyright 2014 by The American Institute of Architects (AIA)

Exclusively published and distributed by Architectural Computer Services, Inc. (ARCOM) for the AIA

This Product MasterSpec Section is licensed by ARCOM to C.H.I. Overhead Doors ("Licensee").

This Product MasterSpec Section modifies the original MasterSpec text, and does not include the full content of the original MasterSpec Section.

Revisions made to the original MasterSpec text are made solely by the Licensee and are not endorsed by, or representative of the opinions of, ARCOM or The American Institute of Architects (AIA). Neither AIA nor ARCOM are liable in any way for such revisions or for the use of this Product MasterSpec Section by any end user. A qualified design professional should review and edit the document to suit project requirements.

For more information, contact C.H.I. Overhead Doors, 1485 Sunrise Drive, Arthur, IL 61911; Phone: (800) 677-2650; Fax: (800) 738-5006; Website: www.chiohd.com; Email: AIA@chiohd.com.

For information about MasterSpec contact ARCOM at (800) 424-5080 or visit www.MasterSpec.com.

SECTION 083613 - SECTIONAL DOORS

TIPS:

To view non-printing Editor's Notes that provide guidance for editing, click on Masterworks/Single-File Formatting/Toggle/Editor's Notes.

To read detailed research, technical information about products and materials, and coordination checklists, click on Masterworks/Supporting Information.

Revise this Section by deleting and inserting text to meet Project-specific requirements.

This Section uses the term "Architect." Change this term as necessary to match that used to identify the design professional as defined in the General and Supplementary Conditions.

Verify that Section titles referenced in this Section are correct for this Project's Specifications; Section titles may have changed.

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

Retain or delete this article in all Sections of Project Manual.

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

Copyright 2014 AIA MasterSpec Premium 06/14
PRODUCT MASTERSPEC LICENSED BY ARCOM TO C.H.I. OVERHEAD DOORS.

1.2 SUMMARY

- A. Section includes electrically operated sectional doors.
- B. Related Requirements:

Retain subparagraphs below to cross-reference requirements Contractor might expect to find in this Section but are specified in other Sections.

1. Section 055000 "Metal Fabrications" for miscellaneous steel supports.
2. [Section 099113 "Exterior Painting"] [and] [Section 099123 "Interior Painting"] for finish painting of factory-primed doors.
3. Section 111200 "Parking Control Equipment" for parking control equipment interlocked to sectional doors.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type and size of sectional door and accessory.
 1. Include construction details, material descriptions, dimensions of individual components, profile door sections, and finishes.

Retain subparagraph below for power-operated doors.

2. Include rated capacities, operating characteristics, electrical characteristics, and furnished accessories.

BIM objects are available from C.H.I. Overhead Doors at www.chiohd.com. You may also call the C.H.I. AIA hotline at (800) 590-0559 or email them at aia.chiohd.com.

- B. Shop Drawings: For each installation and for special components not dimensioned or detailed in manufacturer's product data.
 1. Include plans, elevations, sections, and mounting details.
 2. Include details of equipment assemblies. Indicate dimensions, required clearances, method of field assembly, components, and location and size of each field connection.
 3. Upon request, provide points of attachment and their corresponding static and dynamic loads imposed on structure.

Retain "Samples for Initial Selection" and "Samples for Verification" paragraphs below for two-stage Samples.

- C. Samples for Initial Selection: For units with factory-applied finishes.
 1. Include Samples of accessories involving color selection.
- D. Samples for Verification: Upon request for each type of exposed finish on the following components, in manufacturer's standard sizes:

Revise subparagraphs below to suit Project; delete items not required.

Copyright 2014 AIA MasterSpec Premium 06/14
PRODUCT MASTERSPEC LICENSED BY ARCOM TO C.H.I. OVERHEAD DOORS.

1. Flat door sections.
2. Frame for paneled door sections; of each width of stile and rail required.
3. Panel for raised-panel door sections; not smaller than required to show raised-panel profile.

1.4 INFORMATIONAL SUBMITTALS

Coordinate "Qualification Data" Paragraph below with qualification requirements in Section 014000 "Quality Requirements" and as may be supplemented in "Quality Assurance" Article.

- A. Qualification Data: For Installer.
- B. Sample Warranties: For special warranties.

1.5 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For sectional doors to include in maintenance manuals.

1.6 QUALITY ASSURANCE

- A. Installer Qualifications: An entity that employs installers and supervisors who are trained and approved by manufacturer for both installation and maintenance of units required for this Project.

1.7 WARRANTY

When warranties are required, verify with Owner's counsel that warranties stated in this article are not less than remedies available to Owner under prevailing local laws.

- A. Special Warranty: Manufacturer agrees to repair or replace components of sectional doors that fail in materials or workmanship within specified warranty period.
 1. Failures include, but are not limited to, the following:
 - a. Structural failures including, but not limited to, excessive deflection.
 - b. Faulty operation of hardware.
 - c. Deterioration of metals, metal finishes, and other materials beyond normal weathering and use; rust through.
 - d. Delamination of exterior or interior facing materials.

Verify available warranties and warranty periods.

2. Warranty Period: One year from date of Substantial Completion.

Retain "Special Finish Warranty" Paragraph below for factory-coated doors. Delete if doors are field finished.

Copyright 2014 AIA MasterSpec Premium 06/14
PRODUCT MASTERSPEC LICENSED BY ARCOM TO C.H.I. OVERHEAD DOORS.

- B. Special Finish Warranty: Manufacturer agrees to repair or replace components that show evidence of deterioration of factory-applied finishes within specified warranty period.

Verify available warranties and warranty periods; coordinate with finishes retained.

- 1. Warranty Period: 10 years from date of Substantial Completion.

PART 2 - PRODUCTS

See Editing Instruction No. 1 in the Evaluations for cautions about named manufacturers and products. For an explanation of options and Contractor's product selection procedures, see Section 016000 "Product Requirements."

2.1 MANUFACTURERS, GENERAL

- A. Source Limitations: Obtain sectional doors from single source from single manufacturer.

Retain subparagraph below or revise to suit Project.

- 1. Obtain operators and controls from sectional door manufacturer.

2.2 PERFORMANCE REQUIREMENTS

- A. General Performance: Sectional doors shall comply with performance requirements specified without failure due to defective manufacture, fabrication, installation, or other defects in construction and without requiring temporary installation of reinforcing components.

2.3 DOOR ASSEMBLY

Copy this article and re-edit for each sectional-door unit. Below is intended as a guide if Project requires several units of varying sizes, characteristics, and capacities. For each door assembly, retain required options in this article and their related requirements in other Part 2 articles. Consult manufacturers for recommendations and availability.

Insert drawing designation. Use these designations on Drawings to identify each product.

- A. Steel Sectional Door: Sectional door formed with hinged sections and fabricated according to DASMA 102 unless otherwise indicated.
 - 1. Basis-of-Design Product: Subject to compliance with requirements, provide C.H.I. Overhead Doors, Inc.; Model 3216 or a comparable product by one of the following:
 - a. <Insert manufacturer's name>.

Retain one option in "Operation Cycles" Paragraph below. First option is standard with some manufacturers. Third and fourth options are used for high-cycle operation, corrosive environments, and severe or abusive use. Consult manufacturer for recommendations.

Copyright 2014 AIA MasterSpec Premium 06/14
PRODUCT MASTERSPEC LICENSED BY ARCOM TO C.H.I. OVERHEAD DOORS.

- B. Operation Cycles: Door components and operators capable of operating for not less than 25,000. One operation cycle is complete when a door is opened from the closed position to the fully open position and returned to the closed position.

Retain "(Installed)R-Value" Paragraph below if required. Verify, with manufacturer, available R-value below for type of door assembly and insulation specified. Values usually do not include translucent or windowed sections. Higher numbers are usually values for a single door section; lower numbers are usually installed values of a test-specimen assembly or an entire door. See Evaluations.

- C. R-Value: 17.54.

Retain "Steel Sections" Paragraph below for steel doors.

- D. Steel Sections: Zinc-coated (galvanized) steel sheet with G60 (Z180) zinc coating.
1. Section Thickness: 2 inches (51 mm).
 2. Exterior-Face, Steel Sheet Thickness: 0.017-inch- (0.43-mm) nominal coated thickness.
 - a. Surface: Manufacturer's standard, grooved, wood-grain embossed.

Retain one of two options in "Insulation" Subparagraph below if insulated sections are required; coordinate with R-value if required.

3. Insulation: Foamed in place.

Retain one of two "Interior Facing Material" subparagraphs below or revise to suit Project. Retain first subparagraph if insulated sections are preformed metal panels with laminated insulation. Some manufacturers' standard interior facing materials may vary from, and are thinner than, options below. Verify, with manufacturer, material and thickness availability. Coordinate with code requirements and authorities having jurisdiction for thermal barriers protecting foamed plastics. For garage doors, the IBC requires a minimum thickness of aluminum, steel, or wood as a thermal barrier over foam-plastic insulation or testing according to DASMA 107. See Evaluations.

4. Interior Facing Material: Zinc-coated (galvanized) steel sheet with a nominal coated thickness of [0.015 inch (0.38 mm)].

Retain "Track Configuration" Paragraph below or indicate track configuration on Drawings.

- E. Track Configuration: High-lift track.

Retain second option in "Weatherseals" Paragraph below if required for motor-operated doors.

- F. Weatherseals: Fitted to bottom and top and around entire perimeter of door.

Verify, with manufacturer, availability and size of windows in "Windows" Paragraph below; revise to suit Project.

- G. Windows: Approximately 24 by 12 inches (610 by 305 mm), with square corners, and spaced apart the approximate distance as indicated on Drawings; in one row(s) at height indicated on Drawings; installed with glazing of the following type:

Generally retain "Insulating Glass" Subparagraph below for use in thermally insulated doors.

Copyright 2014 AIA MasterSpec Premium 06/14
PRODUCT MASTERSPEC LICENSED BY ARCOM TO C.H.I. OVERHEAD DOORS.

1. Insulating Glass: **Manufacturer's standard.**

Retain second option in "Roller-Tire Material" Paragraph below to prevent sparking in hazardous atmospheres.

H. Roller-Tire Material: **Case-hardened steel.**

Retain one of first two options in "Locking Devices" Paragraph below. Retain last option for chain-hoist-operated doors or emergency chain-hoist operation.

I. Counterbalance Type: **Torsion spring.**

Retain "Manual Door Operator" or "Electric Door Operator" Paragraph below.

J. Electric Door Operator:

Retain one of four options in "Usage Classification" Subparagraph below or revise to suit Project. Usage classification varies among manufacturers and for each operator design; it is a durability requirement separate from whole-door operation cycles. Consult manufacturer for specific recommendations.

1. Usage Classification: **Standard duty, up to 25 cycles per hour and up to 90 cycles per day.**

Consult manufacturer for recommendations on operator types. Trolley operators are suitable for standard lift doors or doors with 18 inches (457 mm) or less high lift. Jackshaft operators are suitable for doors with more than 18 inches (457 mm) of high lift, vertical lift, or significant roof pitch track.

2. Operator Type: **Jackshaft, side mounted.**

Retain "Safety" Subparagraph below if door is used as an automatic garage door; consider retaining for all power-operated doors. Option is requirement of UL 325; revise to suit Project. The IBC requires listing for automatic garage door openers.

3. Safety: **Listed according to UL 325 by a qualified testing agency for commercial or industrial use.**

Retain one of two options in "Motor Exposure" Subparagraph below or revise to suit Project. Second option applies to locations such as car washes. Operating environment, including hazardous conditions, may require other motor types and enclosure modifications.

4. Motor Exposure: **Interior, clean, and dry.**

5. Emergency Manual Operation: **Push-up type.**

6. Obstruction-Detection Device: **Automatic photoelectric sensor.**

7. Control Station: **Interior-side mounted, Surface mounted.**

K. Door Finish:

Retain one of first three subparagraphs below, which include advertised materials and finishes; available materials and finishes vary among manufacturers. If retaining more than one, indicate location of each on Drawings or by inserts.

"Powder-Coat Finish" Subparagraph below is suitable for steel or aluminum.

1. Factory Baked Enamel Finish: **Manufacturer's standard color.**

Copyright 2014 AIA MasterSpec Premium 06/14
PRODUCT MASTERSPEC LICENSED BY ARCOM TO C.H.I. OVERHEAD DOORS.

Retain "Finish of Interior Facing Material" Subparagraph below for steel sections.

2. Finish of Interior Facing Material: Manufacturer's standard color.

2.4 MATERIALS, GENERAL

Retain this article for motorized operator.

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

2.5 STEEL DOOR SECTIONS

Retain requirements in this article to suit Project. If retaining multiple requirements for different doors and to identify optional requirements for a single door, revise requirements below and insert options as needed in "Door Assembly" Article.

- A. Exterior Section Faces and Frames: Zinc-coated (galvanized), cold-rolled, commercial steel (CS) sheet, complying with ASTM A 653/A 653M, with indicated zinc coating and thickness.

Section heights vary among manufacturers and within each door to accommodate door heights in 3-inch (76-mm) or other increments.

1. Fabricate section faces from single sheets to provide sections not more than 24 inches (610 mm) high and of indicated thickness. Roll horizontal meeting edges to a continuous, interlocking tongue-and-groove weather-resistant seal, with a reinforcing flange return.

Retain subparagraph below for insulated doors.

2. For urethane insulated doors, provide sections with continuous thermal-break construction, separating the exterior and interior faces of door.
- B. Section Ends and Intermediate Stiles: Enclose open ends of sections with channel end stiles formed from galvanized-steel sheet not less than 0.034-inch- (0.086-mm-) nominal coated thickness and welded to door section. Space stiles not more than 48 inches (1219 mm) apart.

Retain option in first paragraph below if requiring an astragal.

- C. Reinforce bottom section with a continuous channel or angle conforming to bottom-section profile[and allowing installation of astragal].

Retain option in first paragraph below for doors with vision lites; consult manufacturer for recommendations.

- D. Reinforce sections with continuous horizontal and diagonal reinforcement, as required to stiffen door and for wind loading. Provide galvanized-steel struts, formed to depth and bolted or welded in place. Ensure that reinforcement does not obstruct vision lites.
- E. Provide reinforcement for hardware attachment.

Copyright 2014 AIA MasterSpec Premium 06/14
PRODUCT MASTERSPEC LICENSED BY ARCOM TO C.H.I. OVERHEAD DOORS.

Retain one or both of first two paragraphs below if required. Coordinate with manufacturer's options and with applicable type(s) of insulation and fabrication.

- F. Foamed-in-Place Thermal Insulation: Insulate interior of steel sections with door manufacturer's standard CFC-free polyurethane insulation, foamed in place to completely fill interior of section and pressure bonded to face sheets to prevent delamination under wind load, and with maximum flame-spread and smoke-developed indexes of 75 and 450, respectively, according to ASTM E 84. Enclose insulation completely within steel sections and the interior facing material, with no exposed insulation.

Retain one of two "Interior Facing Material" paragraphs below or revise to suit Project. Retain first subparagraph if insulated sections are preformed metal panels with foamed-in-place insulation. Coordinate with code requirements and authorities having jurisdiction, for thermal barriers protecting foamed plastics. For garage doors, the IBC requires a minimum thickness of aluminum, steel, or wood as a thermal barrier over foam-plastic insulation or testing according to DASMA 107. See Evaluations.

- G. Interior Facing Material: Zinc-coated (galvanized), cold-rolled, commercial steel (CS) sheet, complying with ASTM A 653/A 653M, with indicated thickness.

Revise "Interior Facing Material" Paragraph below for material and thickness requirement of materials other than steel sheet. Requirements below are based on the IBC.

- H. Interior Facing Material: 0.015 inch (0.38 mm) steel sheet.
- I. Fabricate sections so finished door assembly is rigid and aligned, with tight hairline joints and free of warp, twist, and deformation.

2.6 TRACKS, SUPPORTS, AND ACCESSORIES

Retain requirements in this article and insert other specialty items to suit Project. If retaining multiple requirements for different doors and to identify optional requirements for a single door, revise requirements below and insert options as needed in "Door Assembly" Article.

- A. Tracks: Manufacturer's standard, galvanized-steel track system of configuration indicated, sized for door size and weight, designed for lift type indicated and clearances indicated on Drawings. Provide complete system including brackets, bracing, and reinforcement to ensure rigid support of ball-bearing roller guides for required door type, size, weight, and loading.
 - 1. Galvanized Steel: ASTM A 653/A 653M, minimum G40 (Z120) zinc coating.
 - 2. Slope tracks at an angle from vertical or design tracks to ensure tight closure at jambs when door unit is closed.
 - 3. Track Reinforcement and Supports: Galvanized-steel members to support track without sag, sway, and vibration during opening and closing of doors.
 - a. For Vertical Track: Continuous reinforcing angle attached to jamb and connected to track with offset clips.
 - b. For Horizontal Track: Continuous reinforcing angle from curve in track to end of track, attached to track and supported at points by laterally braced attachments to overhead structural members.

Copyright 2014 AIA

MasterSpec Premium

06/14

PRODUCT MASTERSPEC LICENSED BY ARCOM TO C.H.I. OVERHEAD DOORS.

- ~~C.B.~~ Weatherseals: Replaceable, adjustable, continuous, compressible weather-stripping gaskets of flexible vinyl, rubber, or neoprene fitted to bottom and top of sectional door unless otherwise indicated.

Formatted: Bullets and Numbering

Retain "Windows" Paragraph below for windows other than full-vision sections.

- C. Windows: Manufacturer's standard window units of type, size, and in arrangement indicated. Set glazing in UV stable molded plastic frames for metal-framed doors. Provide removable stops of same material as door-section frames.

2.7 HARDWARE

Retain requirements in this article to suit Project. If retaining multiple requirements for different doors and to identify optional requirements for a single door, revise requirements below and insert options as needed in "Door Assembly" Article.

- A. General: Heavy-duty, corrosion-resistant hardware, with corrosion-resistant fasteners, to suit door type.
- B. Hinges: Heavy-duty, galvanized-steel hinges of not less than 0.079-inch- (2.01-mm-) nominal coated thickness at each end stile and at each intermediate stile, according to manufacturer's written recommendations for door size. Attach hinges to door sections through stiles and rails with self-tapping fasteners. Provide double-end hinges where required, for doors more than 16 feet (4.88 m) wide unless otherwise recommended by door manufacturer.
- C. Rollers: 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- (76-mm-) diameter roller tires for 3-inch- (76-mm-) wide track and 2-inch- (51-mm-) diameter roller tires for 2-inch- (51-mm-) wide track.

Retain "Push/Pull Handles" Paragraph below for push-up or emergency push-up operation.

- D. Push/Pull Handles: Equip each push-up operated or emergency-operated door with galvanized-steel lifting handles on inside of door.

2.8 COUNTERBALANCE MECHANISM

Retain requirements in this article to suit Project. If retaining multiple requirements for different doors and to identify optional requirements for a single door, revise requirements below and insert options as needed in "Door Assembly" Article.

- A. Torsion Spring: Counterbalance mechanism consisting of adjustable-tension torsion springs fabricated from steel-spring wire complying with ASTM A 229/A 229M, mounted on torsion shaft made of steel tube or solid steel. Provide springs designed for number of operation cycles indicated.

Retain "Cable Drums and Shaft for Doors" Paragraph below for all doors.

Copyright 2014 AIA

MasterSpec Premium

06/14

PRODUCT MASTERSPEC LICENSED BY ARCOM TO C.H.I. OVERHEAD DOORS.

- B. Cable Drums and Shaft for Doors: Cast-aluminum or gray-iron casting cable drums mounted on torsion shaft and grooved to receive door-lifting cables as door is raised. Mount counterbalance mechanism with manufacturer's standard ball-bearing brackets at each end of torsion shaft. Provide one additional midpoint bracket for shafts up to 16 feet (4.88 m) long and two additional brackets at one-third points to support shafts more than 16 feet (4.88 m) long unless closer spacing is recommended by door manufacturer.
- C. Cables: Galvanized-steel, multistrand, lifting cables with cable safety factor of at least 5 to 1.
- D. Bracket: Provide anchor support bracket as required to connect stationary end of spring to the wall and to level the shaft and prevent sag.
- E. Bumper: Provide spring bumper at each horizontal track to cushion door at end of opening operation.

2.9 ELECTRIC DOOR OPERATORS

Retain this article for electric door operators, including emergency manual operation. Coordinate with Project's electrical engineer for interface of electric door operators with electrical systems.

Retain requirements in this article to suit Project. If retaining multiple requirements for different doors and to identify optional requirements for a single door, revise requirements below and insert options as needed in "Door Assembly" Article.

- A. General: Electric door operator assembly of size and capacity recommended and provided by door manufacturer for door and "operation cycles" requirement specified, with electric motor and factory-prewired motor controls, starter, gear-reduction unit, solenoid-operated brake, clutch, control stations, control devices, integral gearing for locking door, and accessories required for proper operation.
 - 1. Comply with NFPA 70.
 - 2. Control equipment complying with NEMA ICS 1, NEMA ICS 2, and NEMA ICS 6; with NFPA 70, Class 2 control circuit, maximum 24-V ac or dc.

Durability requirement in "Usage Classification" Paragraph below is separate from "operation cycles," which apply to whole door system and are specified in "Door Assembly" Article.

- B. Usage Classification: Electric operator and components 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.

Retain one or both subparagraphs below or revise to suit Project. Selection depends on size and weight of door, type of operation, and track configuration. Delete all subparagraphs if operator locations are indicated on Drawings. See Evaluations.

Trolley operators are suitable for standard lift doors or doors with 18 inches (457 mm) or less high lift. Jackshaft operators are suitable for doors with more than 18 inches (457 mm) of high lift, vertical lift, or

Copyright 2014 AIA MasterSpec Premium 06/14
PRODUCT MASTERSPEC LICENSED BY ARCOM TO C.H.I. OVERHEAD DOORS.

significant roof pitch track. Backroom and minimal headroom are required for mounting type in "Trolley" Subparagraph below.

Side room is required for mounting type in "Jackshaft, Side Mounted" Subparagraph below.

1. Jackshaft, Side Mounted: Jackshaft operator mounted on the inside front wall on right or left side of door and connected to torsion shaft with an adjustable coupling or drive chain.

Retain option in "Motors" Paragraph below unless external controller is indicated on Drawings. Coordinate with Project's electrical engineer.

D. Motors: Reversible-type motor for motor exposure indicated.

1. Electrical Characteristics:

Retain one of two options in "Phase" Subparagraph below based on required motor size. Verify motor performance and availability with door manufacturer and coordinate electrical characteristics with Project's electrical engineer. See Evaluations.

- a. Phase: Single phase.
- b. Volts: 115.
- c. Hertz: 60.

Speed in "Motor Size" Subparagraph below is for standard-speed doors. Consult manufacturer and revise for higher-speed operation.

2. Motor Size: Minimum size as indicated. If not indicated, large enough to start, accelerate, and operate door in either direction from any position, at a speed not less than 8 in./sec. (203 mm/s) and not more than 12 in./sec. (305 mm/s), without exceeding nameplate ratings or service factor.

Revise "Operating Controls, Controllers, Wiring Devices, and Wiring" Subparagraph below if required; coordinate requirements with Project's electrical engineer. Verify which electrical devices, connections, and wiring, if any, are furnished or installed by other than sectional-door manufacturer; these devices must comply with requirements for electrical devices and connections specified elsewhere.

3. Operating Controls, Controllers, 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.

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.

Retain "Obstruction Detection Device" Paragraph below if required or revise to suit Project.

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.

Retain "Photoelectric Sensor" or "Electric Sensor Edge" Subparagraph below, or both, to suit Project.