SECTION 08360

OVERHEAD DOORS

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PART 1 GENERAL

1.1 SECTION INCLUDES

A. Steel sectional overhead door (Model 664)
B. Electric Door Operators

1.2 RELATED SECTIONS

A. 03 30 00 - Cast-In-Place Concrete.
B. 04 20 00 - Unit Masonry Assemblies.
C. 05 50 00 - Metal Fabrications.
D. 06 10 00 - Rough Carpentry.
E. 07 90 00 - Joint Seals.
F. 08 71 00 - Door Hardware and locks.
G. 09 90 00 - Paints and Coatings.
H. 11 15 00 - Parking Control Equipment: Remote door control.
I. 16 05 00 - Electrical service and connections for powered operators

1.3 REFERENCES

A. ASTM B 653/653M
B. ASTM B 209/209M
C. ASTM B 221/221M
D. AAMA 2604
E. DASMA TDS-163
F. ANSI/DASMA 102

1.4 SUBMITTALS

A. Submit under provisions of Section 01 30 00 - Administrative Requirements.
B. 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.
    4. Operation and maintenance data.
    5. Nameplate data and ratings for motors.
C. Shop Drawings: Include opening dimensions and required tolerances, connection details, anchorage spacing, hardware locations, and installation details.
D. Selection Samples: Upon request furnish color samples or 2’ X 2’ section sample.

1.5 WIND PERFORMANCE REQUIREMENTS

A. Design doors to withstand positive and negative wind loads as calculated in accordance with applicable building code and detailed in structural documents.

1.6 QUALITY ASSURANCE

A. Manufacturer Qualifications: Minimum ten years of documented experience.
B. Installer Qualifications: Minimum five years of documented experience, and authorized by the door manufacturer.

1.7 WARRANTY

A. Manufacturers Limited Warranty steel sectional overhead doors:
   1. Standard finish warranty against cracking, checking, or peeling for 10 years. Custom color option Color Blast Finish limited warranty period for 5 years; Parts and Hardware for 1 year. Extended 8-Year Hardware Warranty option.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Acceptable Manufacturer: Clopay Corporation: 8585 Duke Blvd.; Mason, OH 45040; https://www.clopaydoor.com
B. Substitutions: Not permitted.
C. Requests for substitutions will be considered in accordance with provisions of Section 01 60 00 - Product Requirements.

2.2 RAISED PANEL STEEL DOORS, NON-INSULATED

A. Door Construction:
   1. Panels: Steel embossed woodgrain raised panel steel door.
   2. Steel Skin: Formed from roll formed commercial or drawing quality steel sheet, hot-dip galvanized per ASTM A 924/A 924M and ASTM A 653/A 653M, pre-painted with primer and baked-on polyester topcoat.
   3. Section Joint: Sections to form a weather-tight tongue and groove joint.
   4. Reinforcing: Galvanized and primed steel reinforcement located under each hinge location, pre-punched for hinge attachment.
   5. Handle: 3 inches (76 mm) horizontal galvanized steel step plate / lift handle shall be located on bottom section.
B. Heavy Duty Door: Clopay Model 664.
   1. Style: Raised panel steel doors, non-insulated.
   2. Exterior Skin Thickness: Minimum 24 gauge 0.022 inch (0.56 mm) exterior.
   3. Interior Finish of Exterior Skin: White.
   4. Stiles: Steel prepainted end stiles, minimum 18 gauge (0.049 inch) (1.25 mm) thick, up to 16 feet - 2 inches (4.9 m) wide. Over 16 feet - 2 inches (4.9 m) provide double end stile composed of one 18 gauge (.049 inch) (1.25 mm) minimum plus one 20 gauge (.035 inch) (.89 mm) minimum center stile.
   5. Windows: None.
   6. Window: PVC windows measuring 12 inches by 19-1/2 inches (305 mm by 495 mm):
      a. Glazing: 1/8 inch (3 mm) DSB sheet glass.
      b. Glazing: 1/8 inch (3 mm) clear acrylic sheet.
      c. Glazing: 1/8 inch (3 mm) obscure sheet glass.
   7. Finish: Raised panel wood grain exterior design, pre-finished exterior with 1-mil, three coat baked-on polyester topcoat over primer on a phosphate coating. as follows:
      a. White.
      b. Almond.
      c. Desert Tan.
      d. Sandtone.
      e. Brown.
      f. Clopay ColorBlast®, a two part paint system utilizing Sherwin

Williams® Solar reflective Polane Paint system. Sherwin Williams® color number SW _____

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8. Locking:
   a. Provide a four point cylinder lock with L-handle and a single lock bar.
   b. No lock
9. Door Drop Safety Device: Provide brackets designed to stop the fall of the door should lift cables fail.
10. Weatherstripping: Provide complete perimeter seals.
11. Hinge and Roller Assemblies: Hinges and brackets shall be 14 gauge (.070 inch), (1.78 mm) minimum galvanized steel. Ten-ball bearing steel rollers to be full-floating ball bearing in case hardened steel races and mounted to fit the taper of the track.
12. Tracks:
    a. Provide track configuration to maximize headroom available per plans.
    b. 2 inches (50 mm) track designed for 2” diameter rollers. Vertical tracks minimum 0.061 inch (1.55 mm) galvanized steel. Horizontal tracks minimum 0.075 inch (1.91 mm) galvanized steel
    c. 3 inches (75 mm) track designed for 3” diameter rollers. Vertical and horizontal tracks minimum 0.096 inch (2.43 mm) galvanized steel.
13. Spring Counterbalance: Torsion type, low stress, helically wound, oil-tempered spring on a galvanized steel tube or solid steel shaft. Die cast aluminum. Pre-formed galvanized steel aircraft cable to provide a minimum of a 7:1 safety factor.
    a. Standard Cycle Spring: 10,000 cycle.
    b. High Cycle Spring: 25,000 cycles.
    c. High Cycle Spring: 50,000 cycles.
    d. High Cycle Spring: 100,000 cycles.
    e. Maximum cycles on a single shaft line.
14. Manual Operation
    a. ControlGard® SD direct drive chain hoist with integral brake mechanism that will immediately stop upward or downward travel and maintain the door in a stationary position when the hand chain is released by the user.
       i. 2.8:1 primary reduction in 1" bore
       ii. 2.8:1 primary reduction in 1-1/4" bore
       iii. 3.7:1 primary reduction in 1" bore
       iv. 3.7:1 primary reduction in 1-1/4" bore
    b. Pull rope.

2.3 ELECTRIC DOOR OPERATORS

A. General: Provide electric door operator provided by door manufacturer for door with operational life specified complete with electric motor and factory pre-wired motor controls, starter, gear-reduction unit, clutch, remote-control stations, control devices, integral gearing for locking door, and accessories required for proper operation. Comply with NFPA 70.
   1. Solenoid-operated brake.

B. Disconnect Device: Provide hand-operated disconnect or mechanism for emergency manual operation while disconnecting motor, without affecting timing of limit switch. Mount disconnect and operator so they are accessible from floor level. Include interlock device to automatically prevent motor from operating when emergency operator is engaged.

C. Design operator so motor may be removed without disturbing limit switch adjustment and without affecting emergency auxiliary operator.

D. Provide control equipment complying with NEMA ICS1, NEMA ICS 2, and NEMA

ICS 6, with NFPA 70 Class 2 control circuit, maximum 24-V, AC or DC.

E. Electric Motors: Provide high-starting torque, reversible, continuous-duty, Class A insulated, electric motor, complying with NEMA MG 1, with overload protection, sized to start, accelerate, and operate door in either direction, from any position, at not less than 2/3 fps (0.2 m/s) and not more than 1 fps (.03m/s), without exceeding nameplate ratings or considering service factor.
   1. Type: Mechanical.
   2. Type: Solid State.
   3. Type: Jackshaft.
   4. Type: Trolley.
   5. HP:
      a. 1/3 hp (246 W).
      b. 1/2 hp (373 W).
      c. 3/4hp (559 W).
      d. 1 hp (746 W).
   6. Power Characteristics:
      a. 115 V.
      b. 220 V.
      c. 460 V.
      d. 1 phase.
      e. 3 phase.
   7. Service Factor:
      a. NEMA MG 1.
      b. NEMA 4 watertight.
      c. NEMA 9 waterproof.
      d. NEMA 10 oil resistant.
      e. NEMA 12 explosion resistant.
   8. Coordinate wiring requirements and electrical characteristics of motors with building electrical system.

F. Remote Control Station: Provide momentary contact, 3-button control station with push - button controls labeled "Open", "Close" and "Stop".

G. Remote Control Station: Provide continuous contact, 3-button control station with push - button controls labeled "Open", "Close" and "Stop".

H. Provide interior units, fully guarded, surface mounted, heavy-duty type, with general-purpose NEMA ICS 6 enclosure in one of the following types:
   1. Enclosure Type: Type 1.
   2. Enclosure Type: Type 4.
   3. Enclosure Type: Type 12.

I. Obstruction Detection Device: Provide each motorized door with indicated external automatic safety sensor able to protect full width of door opening. Activation of sensor immediately stops and reverses downward door travel.
   1. Sensor Edge: Provide each motorized door with an automatic safety sensing edge, located within astragal or weather stripping mounted to bottom bar. Contact with sensor immediately stops and reverses downward door travel. Connect to control circuit using manufacturer's standard take-up reel or self-coiling cord. Sensing edge shall be operated by:
      a. Electric.
      b. Pneumatic.
      c. Electric Fail safe.
      d. Pneumatic Fail safe.
   2. Photo-electric control: Provide each motorized door with a photo-electric device that will stop and reverse the downward door travel if the light beam is broken or blocked. Device shall be:
      a. NEMA Type 1.
      b. NEMA Type 4.

J. Limit Switches: Provide adjustable switches, interlocked with motor controls and set

to automatically stop door at fully opened and fully closed positions.

K. Radio Controls: Provide 3 button radio transmitter to provide remote open, close, stop functionality.
   1. Provide external antenna and coaxial wiring to receiver to enhance radio control reception.

L. Provide auxiliary chain hoist: for emergency manual operation while disconnecting motor, without affecting timing of limit switch. Mount disconnect and operator so they are accessible from floor level. Include interlock device to automatically prevent motor from operating when emergency operator is engaged.

PART 3 EXECUTION

3.1 EXAMINATION

A. Examine wall and overhead areas, including opening framing and blocking, with installer present, for compliance with requirements for installation tolerances, clearances, and other conditions affecting performance of Work in this Section.
   1. Proceed with installation only after unsatisfactory conditions have been corrected.

B. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.2 PREPARATION

A. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

3.3 INSTALLATION

A. Install overhead doors and track in accordance with approved shop drawings and the manufacturer's printed instructions.

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