



## SECTION 083323 UPWARD COILING DOORS

### PART 1 GENERAL

#### 1.01 SECTION INCLUDES

- A. Upward coiling service doors.
- B. High-performance springless upward coiling service doors.
- C. Upward coiling security shutters.
- D. Upward coiling sheet doors.

#### 1.02 RELATED REQUIREMENTS

- A. Section << **079200 - Joint Sealants**>>: Sealing joints between frames and adjacent construction.
- B. Section << **083313 - Coiling Counter Doors**>>: Additional types of overhead coiling doors.
- C. Section << **087100 - Door Hardware**>>: Cylinder cores and keys.
- D. Section << **260583 - Wiring Connections**>>: Power to disconnect.

#### 1.03 REFERENCE STANDARDS

- A. ASHRAE Std 90.1 I-P - Energy Standard for Buildings Except Low-Rise Residential Buildings; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- B. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2023.
- C. ASTM E90 - Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements; 2023.
- D. ASTM E330/E330M - Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference; 2014 (Reapproved 2021).
- E. FBC TAS 201 - Impact Test Procedures; Testing Application Standard; 1994.
- F. FBC TAS 202 - Criteria for Testing Impact and Non-Impact Resistant Building Envelope Components Using Uniform Static Air Pressure; Testing Application Standard; 1994.
- G. ICC (IECC)-2018 - International Energy Conservation Code; 2018.
- H. UL (DIR) - Online Certifications Directory; Current Edition.

#### 1.04 SUBMITTALS

- A. Product Data: Submit manufacturer's standard literature showing materials and details of construction and finish.<< **Include data on electrical operation.**; or **None - N/A**>>

- B. Shop Drawings: Indicate rough and actual opening dimensions, anchorage methods, hardware locations, and installation details.
- C. Manufacturer's Instructions: Indicate installation sequence and installation, adjustment, and alignment procedures.
- D. Manufacturer's qualification statement.
- E. Installer's qualification statement.
- F. Operation and Maintenance Data: Indicate modes of operation, lubrication requirements and frequency, and periodic adjustments required.
- G. Specimen warranty.

### **1.05 QUALITY ASSURANCE**

- A. Manufacturer Qualifications: Company specializing in performing work of this section with minimum of << **5 years; or \_\_\_\_\_ years**>> of<< **documented; \_\_\_\_\_; or None - N/A**>> experience in fabrication and installation of security closures.
- B. Installer Qualifications: Company specializing in performing work of this section with minimum of << **3 years; or \_\_\_\_\_ years**>> of<< **documented; \_\_\_\_\_; or None - N/A**>> experience and approved by manufacturer.
- C. Products Requiring Electrical Connection: Listed and classified by << **UL (DIR); TUV; testing firm acceptable to authorities having jurisdiction; or \_\_\_\_\_**>> as suitable for purpose specified.

### **1.06 DELIVERY, STORAGE, AND HANDLING**

- A. Store products in manufacturer's unopened packaging until ready for installation.
- B. Protect materials from exposure to moisture.
- C. Store materials in dry, warm, ventilated, weathertight location.

### **1.07 WARRANTY**

- A. Manufacturer Door-Only Warranty: Provide manufacturer warranty for door assembly for duration indicated under individual doors. Complete forms in <<**Owner**>>'s name and register with manufacturer.
- B. Manufacturer Door and Operator Warranty: Provide manufacturer's limited warranty for door and operator system free from material and workmanship defects for duration and cycles indicated under individual doors; counterbalance spring and finish not covered by warranty.

## **PART 2 PRODUCTS**

### **2.01 MANUFACTURER**

- A. Wayne Dalton; www.wayne-dalton.com; 1 (800) 827-3667.
- B. Substitutions: Not permitted.

### **2.02 UPWARD COILING SERVICE DOORS**

- A. Wayne Dalton; Model 926 Rolling Service Door.
  - 1. Slats: Interlocking, roll-formed, galvanized steel slats.

2. Width: << \_\_\_\_\_ >>.
  
3. Height: << \_\_\_\_\_ >>.
4. Mounting: << **Surface-mounted on side indicated on drawings; or Between jamb**>>.
5. Opening Speed: Door to operate at variable speed up to << **8 inches (203 mm)**>> per second.
6. Closing Speed: Door to operate at variable speed up to << **12 inches (305 mm)**>> per second.
7. Operation Cycles: Capable of operating for minimum 20,000 cycles. One operation cycle is complete when door is opened from closed position to fully open position and returned to closed position.
8. Available Warranty:
  - a. Door Only: Two years.
  - b. Door and Operator Warranty: Three years or 20,000 cycles, whichever comes first.
9. Wind Load: Design door assembly to withstand ultimate static pressure load of << **20 psf (0.96 kPa)**>>.
10. Curtain Material: << **26-gauge, 0.217-inch (0.55 mm)**>> galvanized steel. Staking lock system locks end of each slat from lateral movement.
  - a. Slat Profile: No.17, << **2-inch (51 mm)**>> flat crown profile.
  - b. Finish: Standard polyester base coat.
    - 1) Color: White.
11. Bottom Bar: Steel.
  - a. Profile: Double angle.
  - b. Finish: << **Hot-dip galvanized; Mill finish; Galvanized, primed black; Bronze anodized; or PowderGuard Premium powder coat; \_\_\_\_\_ color**>>.
12. Locking Options to Include: << **None; Slide lock; Cylinder; or Best cylinder**>>.
  - a. Lock Locations:
  - b. Lock Access: Coil side.
13. Weatherstripping and Seals:
  - a. Bottom Seal Astragal: << **Required; or Not required**>>.
  - b. Lintel Brush Seal: << **Required; or Not required**>>.
14. Side Guides, Channels: Constructed of steel with members fully bolted together.
  - a. Finish: << **Galvanized; or Powder coated; \_\_\_\_\_ color**>>.
15. Brackets: Steel to support counterbalance and curtain.
  - a. Finish: << **Galvanized; or Powder coated; \_\_\_\_\_ color**>>.
16. Counterbalance: Helical torsion spring type, housed in steel tube or pipe barrel and supporting curtain with deflection limited to << **0.03 inch per foot (1:400 mm/sec)**>> of span. Adjustable spring tension required.
17. Hood: << **Not required; or 24-gauge, 0.0278-inch galvanized steel (0.63 mm galvanized steel)**>>.
  - a. Finish: << **Match curtain; Standard polyester base coat; white color; Standard polyester base coat; brown color; or PowderGuard Premium powder coat; \_\_\_\_\_ color**>>.

18. Manual Operation: << **Push-up**; Chain hoist; Bracket-mounted crank; or Wall-mounted crank>>.
  19. Motor Operation: << **Not required**; or **Provide UL-listed electric operator; size as recommended by manufacturer to move door in either direction at minimum 8 inches (203 mm), maximum 1 foot (305 mm) per second**>>.
    - a. Manual Override: << **Hoist**; Hoist and jackshaft release; or Jackshaft release>>.
    - b. Timer to Close: << **Not required**; or Automatic closing controlled by adjustable hold-open time delay>>.
    - c. Operation Supply Voltage: << **115/208/230V 1-phase 60Hz**; 208/230/460V 3-phase 60Hz; **575V 3-phase 60Hz**; 220V 1-phase 50Hz; 220V 3-phase 50Hz; or **400V 3-phase 50Hz**>>.
    - d. Signaling Device: << **Horn and strobe combination**; or Traffic warning light>>.
    - e. Actuation Device: Provide << **push button**; **key switch**; **pull cord**; **loop detector**; **motion detector**; **treadle switch**; and **radio control**>>.
    - f. Motor Mounting: << **Wall-mounted**; or Front of hood>>, << **right-hand side**; or **left-hand side**>>.
    - g. Motor Enclosure: << **Not required**; **NEMA 4-12 watertight and oiltight**; **NEMA 4X corrosion-resistant**; **Totally enclosed, fan-cooled motor**; or **Totally enclosed, non-ventilated**>>.
    - h. Obstruction Safety Detection: Constant contact button only.
    - i. Obstruction Safety Detection:
      - 1) Primary, Monitored:
        - (a) Photo Eyes: << **Reflective photo-eyes**; Thru-beam photo-eyes; or **NEMA 4X photo-eyes**>>.
        - (b) Light Curtain: << **3 feet (0.9 m)**; **6 feet (1.8 m)**; or \_\_\_\_\_ feet ( \_\_\_\_\_ m)>>.
        - (c) Safety Edge: << **2-wire reversing safety edge**; **Wireless reversing safety edge**; or \_\_\_\_\_>>.
      - 2) Secondary, Non-Monitored:
        - (a) Photo Eyes: << **Reflective photo-eyes**; Thru-beam photo-eyes; or \_\_\_\_\_>>.
        - (b) Light Curtain: << **3 feet (0.9 m)**; **6 feet (1.8 m)**; or \_\_\_\_\_ feet ( \_\_\_\_\_ m)>>.
        - (c) Safety Edge: << **2-wire reversing safety edge**; or \_\_\_\_\_>>.
- B. Wayne Dalton; Model 900 Rolling Service Door.
1. Slats: Interlocking, roll-formed, metal slats.
  2. Width: << \_\_\_\_\_>>.
  3. Height: << \_\_\_\_\_>>.
  4. Mounting: << **Surface-mounted on side indicated on drawings**; or **Between jamb**>>.
  5. Opening Speed: Door to operate at variable speed up to << **6 to 12 inches (152 to 305 mm)**>> per second.
  6. Closing Speed: Door to operate at variable speed up to << **6 to 12 inches (152 to 305 mm)**>> per second.

7. Operation Cycles: Capable of operating for minimum << **20,000; 50,000; 100,000; or 200,000**>> cycles. One operation cycle is complete when door is opened from closed position to fully open position and returned to closed position.
8. Available Warranty:
  - a. Door Only: Two years.
  - b. Door and Operator Warranty: Three years or 20,000 cycles, whichever comes first.
9. Wind Load: Design door assembly to withstand ultimate static pressure load of << **20 psf (0.96 kPa); 31 psf (1.48 kPa); 26 psf (1.25 kPa); 36 psf (1.72 kPa); 41 psf (1.96 kPa); 50 psf (2.39 kPa); 57 to 130 psf (2.73 to 6.22 kPa); 65 psf (3.11 kPa); or 68.9 psf (3.29 kPa)**>>.
10. Curtain Material: Galvanized steel. Staking lock system locks end of each slat from lateral movement.
  - a. Slat Profile: << **No.2, 2-inch (51 mm) curved profile; No.17, 2-inch (51 mm) flat profile; F-265; or FE-265**>>.
  - b. Fenestrated Slats: << **Not required; Secur-Vent perforated slat; 5/8 by 3 inches (16 by 76 mm); 1 by 10 inches (25 by 254 mm); 5/8 by 3 inches (16 by 76 mm) with Plexiglass covers; or 1 by 10 inches (25 by 254 mm) with Plexiglass covers**>>.
  - c. Finish:
    - 1) Standard polyester base coat; << **gray; beige; white; or brown**>> color.
    - 2) G-90 (Z275) galvanized<< **; primed gray; or None - N/A**>>.
11. Bottom Bar: Steel.
  - a. Profile: Double angle.
  - b. Finish: << **Galvanized, primed black; Black anodized; Bronze anodized; Hot-dip galvanized; PowderGuard Premium powder coat; PowderGuard Textured powder coat; PowderGuard Zinc powder coat; Stainless No.4 satin; or Stainless No.2B mill**>>.
12. Locking Options to Include: << **None; Slide lock; Cylinder; or Best cylinder**>>.
  - a. Lock Locations: << **Both jambs; Left only; or Right only**>>.
  - b. Lock Access: << **Coil side; or Opposite coil side**>>.
13. Weatherstripping and Seals:
  - a. Bottom Seal Astragal: << **Required; or Not required**>>.
  - b. Guide Surface Weatherstrip: << **Angled brush seal; Vinyl seal; or Not required**>>.

- c. Lintel Brush Seal: << **Interior; Exterior; Interior and exterior; or Not required**>>.
- d. Interior Hood Baffle: << **Required; or Not required**>>.
- 14. Side Guides, Channels: Constructed of << **steel; 304 stainless steel; or aluminum**>> with members fully bolted together.
  - a. Finish: << **Mill finish; Clear anodized; Bronze anodized; Black anodized; Powder coat; Stainless No.4 satin; Hot-dip galvanized; Galvanized, primed black; PowderGuard Textured powder coat; PowderGuard Zinc powder coat; or Stainless No.2B mill**>>.
    - 1) Color: << **Match curtain; Black; or \_\_\_\_\_**>>.
- 15. Brackets: << **Steel; or 304 stainless steel**>> to support counterbalance and curtain.
  - a. Finish: << **Hot-dip galvanized; Galvanized, primed black; Stainless No.4 satin; Powder coat; PowderGuard Premium powder coat; \_\_\_\_\_ color; PowderGuard Textured powder coat; \_\_\_\_\_ color; or PowderGuard Zinc powder coat; \_\_\_\_\_ color**>>.
    - 1) Color: << **Match curtain; or \_\_\_\_\_**>>.
- 16. Counterbalance: Helical torsion spring type, housed in steel tube or pipe barrel and supporting curtain with deflection limited to << **0.03 inch per foot (1:400 mm/sec)**>> of span. Adjustable spring tension required.
- 17. Hood: << **Not required; 24 gauge, 0.028 inch stainless steel (0.63 mm stainless steel); 24 gauge, 0.028 inch galvanized steel (0.63 mm galvanized steel); 22 gauge, 0.025 inch B&S aluminum (0.64 mm B&S aluminum); or \_\_\_\_\_ gauge, \_\_\_\_\_ inch (\_\_\_\_\_ mm)**>>.
  - a. Finish: << **Galvanized, primed to match curtain; Hot-dip galvanized; Clear anodized; Standard polyester base coat; gray color; Bronze anodized; Standard polyester base coat; tan color; Mill finish; Standard polyester base coat; white color; Powder coat; \_\_\_\_\_ color; Standard polyester base coat; brown color; Stainless No. 4 satin; Gray-primed galvanized G90 (Z275); Black anodized; or PowderGuard Premium powder coat; \_\_\_\_\_ color**>>.
- 18. Manual Operation: << **Push-up; Chain hoist; Bracket-mounted crank; or Wall-mounted crank**>>.
- 19. Motor Operation: << **Not required; or Provide UL-listed electric operator; size as recommended by manufacturer to move door in either direction at minimum 8 inches (203 mm), maximum 1 foot (305 mm) per second**>>.
  - a. Manual Override: << **Hoist; Hoist and jackshaft release; or Jackshaft release**>>.
  - b. Timer to Close: << **Not required; or Automatic closing controlled by adjustable hold-open time delay**>>.
  - c. Operation Supply Voltage: << **115/208/230V 1-phase 60Hz; 208/230/460V 3 phase 60Hz; 575V 3-phase 60Hz; 220V 1-phase 50Hz; 220V 3-phase 50Hz; or 400V 3-phase 50Hz**>>.
  - d. Signaling Device: << **Horn and strobe combination; or Traffic warning light**>>.
  - e. Actuation Device: Provide << **push button; key switch; pull cord; loop detector; motion detector; treadle switch; and radio control**>>.
  - f. Motor Mounting: << **Wall-mounted; or Front of hood**>>, << **right-hand side; or left-hand side**>>.
  - g. Motor Enclosure: << **Not required; NEMA 4-12 watertight and oiltight; NEMA 4X corrosion-resistant; Totally enclosed, fan-cooled motor; or Totally enclosed, non-ventilated**>>.
  - h. Obstruction Safety Detection: Constant contact button only.
  - i. Obstruction Safety Detection:

- 1) Primary, Monitored:
    - (a) Photo Eyes: << **Reflective photo-eyes; Thru-beam photo-eyes; or NEMA 4X photo-eyes**>>.
    - (b) Light Curtain: << **3 feet (0.91 m); 6 feet (1.83 m); or \_\_\_\_\_ feet (\_\_\_\_\_ m)**>>.
    - (c) Safety Edge: << **2-wire reversing safety edge; Wireless reversing safety edge; or \_\_\_\_\_**>>.
  - 2) Secondary, Non-Monitored:
    - (a) Photo Eyes: << **Reflective photo-eyes; Thru-beam photo-eyes; or \_\_\_\_\_**>>.
    - (b) Light Curtain: << **3 feet (0.9 m); 6 feet (1.8 m); or \_\_\_\_\_ feet (\_\_\_\_\_ m)**>>.
    - (c) Safety Edge: << **2-wire reversing safety edge; or \_\_\_\_\_**>>.
- C. Wayne Dalton; Model 800 Rolling Service Door.
1. Slats: Interlocking, roll-formed, metal slats.
  
  2. Width: << \_\_\_\_\_>>.
  
  3. Height: << \_\_\_\_\_>>.
  4. Mounting: << **Surface-mounted on side indicated on drawings; or Between jamb**>>.
  5. Opening Speed: Door to operate at variable speed up to << **6 to 12 inches (152 to 305 mm)**>> per second.
  6. Closing Speed: Door to operate at variable speed up to << **6 to 12 inches (152 to 305 mm)**>> per second.
  7. Operation Cycles: Capable of operating for minimum << **20,000; 50,000; 100,000; or 200,000**>> cycles. One operation cycle is complete when door is opened from closed position to fully open position and returned to closed position.
  8. Available Warranty:
    - a. Door Only: Two years.
    - b. Door and Operator Warranty: Three years or 20,000 cycles, whichever comes first.
  
  9. Wind Load: Design door assembly to withstand ultimate static pressure load of << **20 psf (0.96 kPa); 31 psf (1.48 kPa); 37 psf (1.77 kPa); 44 psf (2.11 kPa); 47 psf (2.25 kPa); 50 psf (2.39 kPa); 53 psf (2.54 kPa); 55 psf (2.63 kPa); or 56 psf (2.68 kPa)**>> in accordance with << **ASTM E330/E330M**>>.
  10. Wind Load: Not required.
  
  11. Impact Rating: Available with certification for large missile impact resistance (<< **FBC TAS 201**>> and << **FBC TAS 202**>>), with design pressure of << \_\_\_\_\_ psf (\_\_\_\_\_ Pa)>> at << \_\_\_\_\_ feet (\_\_\_\_\_ mm)>> wide. << **This design is approved by the Florida Building Commission, FL # \_\_\_\_\_ ; This design is approved by Miami Dade NOA.; or None - N/A**>>

12. Curtain Material: << **Galvanized steel; Aluminum; or Stainless steel**>>. Staking lock system locks end of each slat from lateral movement.
- a. Galvanized Steel: << **18 gauge, 0.0516 inch (1.31 mm); 20 gauge, 0.0396 inch (1.01 mm); 22 gauge, 0.0336 inch (0.86 mm); or \_\_\_\_\_ gauge, \_\_\_\_\_ inch (\_\_\_\_\_ mm)**>>.
- 1) Finish: << **Galvanized, primed white; Galvanized, primed gray; Galvanized, primed beige; Galvanized, primed brown; Galvanized G90 (Z275); Galvanized G90 (Z275), primed gray; or Powder coat; \_\_\_\_\_ color**>>.
- b. Aluminum: << **0.050 inch (1.27 mm); or \_\_\_\_\_ inch (\_\_\_\_\_ mm)**>>.
- 1) Finish: << **Mill finish; Clear anodized; Bronze anodized; or Powder coat; \_\_\_\_\_ color**>>.
- c. Stainless Steel: << **20 gauge, 0.0359 inch (0.91 mm); or \_\_\_\_\_ gauge, \_\_\_\_\_ inch (\_\_\_\_\_ mm)**>>.
- 1) Finish: << **No.2B mill; or No.4 satin**>>.
- d. Slat Profile: << **No.4, 3-inch (76 mm) curved slat; No.14, 3-inch (76 mm) flat slat; F-265; or FE-265**>>.
- e. Fenestrated Slats: << **Not required; Secur-Vent perforated slats; 3/4 by 5 inch (19 by 127 mm) holes; 5/8 by 3 inches (16 by 76 mm); 3/4 by 5 inch (19 by 127 mm) holes with Plexiglas covers; or 1 by 10 inches (25 by 254 mm)**>>.
13. Bottom Bar: << **6063-T6 aluminum; Galvanized steel; or 304 Stainless steel**>>.
- a. Profile: Double angle.
- b. Finish: << **Mill finish; Clear anodized; Bronze anodized; Black anodized; Hot-dip galvanized; Powder coat; Stainless No.4 satin; PowderGuard Textured powder coat; PowderGuard Zinc powder coat; or Stainless No.2B mill**>>.
- 1) Color: << **Match curtain; Black; or \_\_\_\_\_**>>.
14. Locking Options to Include: << **None; Slide lock; Thumbturn; Cylinder; or Best cylinder**>>.
- a. Lock Locations: << **Both jambs; Left only; or Right only**>>.
- b. Lock Access: << **Coil side; or Opposite coil side**>>.
15. Weatherstripping and Seals:

- a. Bottom Seal Astragal: << **Required**; or Not required>>.
  - b. Guide Surface Weatherstrip: << **Angled brush seal**; Vinyl seal; or Not required>>.
  - c. Lintel Brush Seal: << **Interior**; Exterior; Interior and exterior; or Not required>>.
  - d. Interior Hood Baffle: << **Required**; or Not required>>.
16. Side Guides, Channels: Constructed of << **steel**; 304 stainless steel; or aluminum>> with members fully bolted together.
- a. Finish: << **Galvanized, primed black**; Hot-dip galvanized; Mill finish; Clear anodized; Black anodized; Bronze anodized; Powder coat; Stainless No.4 satin; PowderGuard Textured powder coat; PowderGuard Zinc powder coat; or Stainless No.2B mill>>.
    - 1) Color: << **Match curtain**; **Black**; or \_\_\_\_>>.
17. Brackets: << **Steel**; or 304 Stainless steel>> to support counterbalance and curtain.
- a. Finish: << **Galvanized, primed black**; Hot-dip galvanized; **Mill finish**; Clear anodized; Black anodized; Bronze anodized; Powder coat; Stainless No.4 satin; **Stainless No.2B mill**; PowderGuard Textured powder coat; or **PowerGuard Zinc powder coat**>>.
    - 1) Color: << **Match curtain**; or \_\_\_\_>>.
18. Counterbalance: Helical torsion spring type, housed in steel tube or pipe barrel and supporting curtain with deflection limited to << **0.03 inch per foot (1:400 mm/sec)**>> of span. Adjustable spring tension required.
19. Hood: << **Not required**; 24 gauge, 0.028 inch stainless steel (0.63 mm stainless steel); 24 gauge, 0.028 inch galvanized steel (0.63 mm galvanized steel); 22 gauge, 0.025 inch B&S aluminum (0.64 mm B&S aluminum); or \_\_\_\_ gauge, \_\_\_\_ inch (\_\_\_\_ mm)>>.
- a. Finish: << **Galvanized, primed to match curtain**; Hot-dip galvanized; Clear anodized; Bronze anodized; Mill finish; Powder coat; \_\_\_\_ color; or **Stainless No.4 satin**>>.
20. Manual Operation: << **Push-up**; Chain hoist; Bracket-mounted crank; or **Wall-mounted crank**>>.
21. Motor Operation: << **Not required**; or **Provide UL-listed electric operator; size as recommended by manufacturer to move door in either direction at minimum 8 inches (203 mm), maximum 1 foot (305 mm) per second**>>.
- a. Manual Override: << **Hoist**; Hoist and jackshaft release; or Jackshaft release>>.
  - b. Timer to Close: << **Not required**; or Automatic closing controlled by adjustable hold-open time delay>>.
  - c. Operation Supply Voltage: << **115/208/230V 1-phase 60Hz**; 208/230/460V 3 phase 60Hz; 575V 3-phase 60Hz; 220V 1-phase 50Hz; 220V 3-phase 50Hz; or 400V 3-phase 50Hz>>.
  - d. Signaling Device: << **Horn and strobe combination**; or Traffic warning light>>.
  - e. Actuation Device: Provide << **push button**; **key switch**; **pull cord**; **loop detector**; **motion detector**; **treadle switch**; and **radio control**>>.
  - f. Motor Mounting: << **Wall-mounted**; or **Front of hood**>>, << **right-hand side**; or **left-hand side**>>.

- g. Motor Enclosure: << **Not required; NEMA 4-12 watertight and oiltight; NEMA 4X corrosion-resistant; Totally enclosed, fan-cooled motor; or Totally enclosed, non-ventilated**>>.
- h. Obstruction Safety Detection: Constant contact button only.
- i. Obstruction Safety Detection:
  - 1) Primary, Monitored:
    - (a) Photo Eyes: << **Reflective photo-eyes; Thru-beam photo-eyes; or NEMA 4X photo-eyes**>>.
    - (b) Light Curtain: << **3 feet (0.91 m); 6 feet (1.83 m); or \_\_\_\_\_ feet (\_\_\_\_\_ m)**>>.
    - (c) Safety Edge: << **2-wire reversing safety edge; Wireless reversing safety edge; or \_\_\_\_\_**>>.
  - 2) Secondary, Non-Monitored:
    - (a) Photo Eyes: << **Reflective photo-eyes; Thru-beam photo-eyes; or \_\_\_\_\_**>>.
    - (b) Light Curtain: << **3 feet (0.9 m); 6 feet (1.8 m); or \_\_\_\_\_ feet (\_\_\_\_\_ m)**>>.
    - (c) Safety Edge: << **2-wire reversing safety edge; or \_\_\_\_\_**>>.

D. Wayne Dalton; Model 800 HC Springless High Cycle Rolling Service Door.

- 1. Slats: Interlocking, roll-formed, metal slats.
  
- 2. Width: << \_\_\_\_\_>>.
  
- 3. Height: << \_\_\_\_\_>>.
- 4. Mounting: Surface mounted on side indicated on drawings.
- 5. Opening Speed: Door to operate at variable speed up to << **8 to 12 inches (203 to 305 mm)**>> per second.
- 6. Closing Speed: Door to operate at variable speed up to << **8 to 12 inches (203 to 305 mm)**>> per second.
- 7. Operation Cycles: Capable of operating for minimum 500,000 cycles. One operation cycle is complete when door is opened from closed position to fully open position and returned to closed position.
- 8. Available Warranty:
  - a. Limited Warranty: Three years or 500,000 cycles, whichever comes first.
  
- 9. Wind Load: Design door assembly to withstand ultimate static pressure load of << **20 psf (0.96 kPa); 31 psf (1.48 kPa); 37 psf (1.77 kPa); 44 psf (2.11 kPa); 47 psf (2.25 kPa); 50 psf (2.39 kPa); 53 psf (2.54 kPa); 55 psf (2.63 kPa); or 56 psf (2.68 kPa)**>> in accordance with <<ASTM E330/E330M>>.
- 10. Wind Load: Not required.

11. Impact Rating: Available with certification for large missile impact resistance (<<**FBC TAS 201**>> and <<**FBC TAS 202**>>), with design pressure of <<        psf (        Pa)>> at <<        feet (        mm)>> wide.<< **This design is approved by the Florida Building Commission, FL # \_\_\_\_\_ ; This design is approved by Miami Dade NOA.; or None - N/A**>>
12. Impact Rating: Not required.
13. Curtain Material: << **Galvanized steel; Aluminum; or Stainless steel**>>. Staking lock system locks end of each slat from lateral movement.
  - a. Galvanized Steel: << **18 gauge, 0.0516 inch (1.31 mm); 20 gauge, 0.0396 inch (1.01 mm); 22 gauge, 0.0336 inch (0.86 mm); or \_\_\_\_\_ gauge, \_\_\_\_\_ inch (\_\_\_\_\_ mm)**>>.
    - 1) Finish: << **Galvanized, primed white; Galvanized, primed gray; Galvanized, primed beige; Galvanized, primed brown; Galvanized G90 (Z275); Galvanized G90 (Z275), primed gray; or Powder coat; \_\_\_\_\_ color**>>.
  - b. Aluminum: << **0.040 inch (1.02 mm); or \_\_\_\_\_ inch (\_\_\_\_\_ mm)**>>.
    - 1) Finish: << **Mill finish; Clear anodized; Black anodized; Bronze anodized; or Powder coat; \_\_\_\_\_ color**>>.
  - c. Stainless Steel: << **20 gauge, 0.0359 inch (0.91 mm); 22 gauge, 0.0299 inch (0.76 mm); or \_\_\_\_\_ gauge, \_\_\_\_\_ inch (\_\_\_\_\_ mm)**>>.
    - 1) Finish: << **No.2B mill; or No.4 satin**>>.
  - d. Slat Profile: No.14, << **3-inch (76 mm)**>> tall flat slat.
  - e. Fenestrated Slats: << **Not required; Secur-Vent perforated slats; 3/4 by 5 inch (19 by 127 mm) holes; or 3/4 by 5 inch (19 by 127 mm) holes with Plexiglas covers**>>.
14. Bottom Bar: << **6063-T6 aluminum; Galvanized steel; or 304 Stainless steel**>>.
  - a. Profile: Double angle.
  - b. Finish: << **Mill finish; Clear anodized; Bronze anodized; Hot-dip galvanized; Powder coat; or Stainless No.4 satin**>>.
    - 1) Color: << **Match curtain; or \_\_\_\_\_**>>.
15. Weatherstripping and Seals:
  - a. Bottom Seal Astragal: Included.
  - b. Interior Guide Seal: << **Required; or Not required**>>.
  - c. Exterior Guide Seal: << **Required; or Not required**>>.

- d. Lintel Brush Seal: << **Required; or Not required**>>.
  - 16. Side Guides, Channels: Constructed of << **steel; 304 stainless steel; or aluminum**>> with members fully bolted together.
    - a. Finish: << **Hot-dip galvanized; Galvanized, primed black; Powder coat; PowderGuard Textured powder coat; Stainless No.4 satin; or PowderGuard Zinc powder coat**>>.
      - 1) Color: << **Match curtain; Black; or \_\_\_\_\_**>>.
  - 17. Brackets: Steel to support counterbalance and curtain.
    - a. Finish: << **Hot-dip galvanized; Galvanized, primed black; Powder coat; or PowderGuard Textured powder coat**>>.
      - 1) Color: << **Match curtain; Black; or \_\_\_\_\_**>>.
  - 18. Door Roll: Directly driven, springless roll constructed of steel tube with integral shafts, keyed on drive end and supported by self-aligning, greasable, sealed bearings. Counterbalance device not required.
  - 19. Hood: << **Not required; 24 gauge, 0.028 inch stainless steel (0.63 mm stainless steel); 24 gauge, 0.028 inch galvanized steel (0.63 mm galvanized steel); 22 gauge, 0.025 inch B&S aluminum (0.64 mm B&S aluminum); or \_\_\_\_\_ gauge, \_\_\_\_\_ inch (\_\_\_\_\_ mm)**>>.
    - a. Finish: << **Galvanized, primed to match curtain; Hot-dip galvanized; Clear anodized; Bronze anodized; Mill finish; Powder coat; \_\_\_\_\_ color; or Stainless No.4 satin**>>.
  - 20. Motor Operation: Direct drive, integrated gear motor and brake assembly; size as recommended by manufacturer to move door in either direction at minimum << **8 inches (203 mm)**>>, maximum << **1 foot (305 mm)**>> per second. Operator and drive assembly is factory preassembled and provided with wiring harnesses needed direct from factory.
    - a. Manual Override: Hoist.
    - b. Timer to Close: Time-delay self-close timer and non-resettable cycle counter.
    - c. Operation Supply Voltage: << **208V 1-phase 60Hz; 208V 3-phase 60Hz; 230V 3-phase 60Hz; 575V 3-phase 60Hz; 220 to 240V 1-phase 50Hz; or 440 to 480V 3-phase 50Hz**>>.
    - d. Signaling Device: << **Horn and strobe combination; or Traffic warning light**>>.
    - e. Actuation Device: Provide << **push button; key switch; pull cord; loop detector; motion detector; treadle switch; and radio control**>>.
    - f. Motor Mounting: Shaft mount.
    - g. Obstruction Safety Detection:
      - 1) Primary, Monitored:
        - (a) Photo Eyes: << **Reflective photo-eyes; Thru-beam photo-eyes; Dual photo-eyes; or \_\_\_\_\_**>>.
        - (b) Safety Edge: << **2-wire reversing safety edge; or \_\_\_\_\_**>>.
      - 2) Secondary, Non-Monitored:
        - (a) Photo Eyes: << **Reflective photo-eyes; Thru-beam photo-eyes; Dual photo-eyes; or \_\_\_\_\_**>>.
        - (b) Safety Edge: << **2-wire reversing safety edge; or \_\_\_\_\_**>>.
- E. Wayne Dalton; Model 800 ADV.
- 1. Slats: Interlocking, roll-formed, metal slats.
  - 2. Width: << \_\_\_\_\_>>.

3. Height: << \_\_\_\_\_ >>.
4. Mounting: Surface mounted on side indicated on drawings.
5. Opening Speed: Door to operate at variable speed up to << **24 inches (610 mm)**>> per second.
6. Closing Speed: Door to operate at variable speed up to << **12 inches (305 mm)**>> per second.
7. Operation Cycles: Capable of operating for minimum one million cycles. One operation cycle is complete when door is opened from closed position to fully open position and returned to closed position.
8. Available Warranty:
  - a. Limited Warranty: Five years or one million cycles, whichever comes first.
  
9. Wind Load: Design door assembly to withstand ultimate static pressure load of << **20 psf (0.96 kPa); 31 psf (1.48 kPa); 37 psf (1.77 kPa); 44 psf (2.11 kPa); 47 psf (2.25 kPa); 50 psf (2.39 kPa); 53 psf (2.54 kPa); 55 psf (2.63 kPa); or 56 psf (2.68 kPa)**>> in accordance with <<**ASTM E330/E330M**>>.
10. Wind Load: Not required.
  
11. Impact Rating: Available with certification for large missile impact resistance (<<**FBC TAS 201**>> and <<**FBC TAS 202**>>), with design pressure of << \_\_\_\_\_ psf ( \_\_\_\_\_ Pa)>> at << \_\_\_\_\_ feet ( \_\_\_\_\_ mm)>> wide.<< **This design is approved by the Florida Building Commission;** **This design is approved by Miami Dade NOA;** or **None - N/A**>> << **FL # \_\_\_\_\_; TDI # \_\_\_\_\_; or None - N/A**>>.
12. Impact Rating: Not required.
13. Curtain Material: << **Galvanized steel; or Aluminum**>>. Staking lock system locks end of each slat from lateral movement.
  - a. Galvanized Steel: << **22 gauge, 0.037 inch (0.853 mm); or \_\_\_\_\_ gauge, \_\_\_\_\_ inch ( \_\_\_\_\_ mm)**>>.
    - 1) Finish: Hardened powder coat; << **white; tan; gray; or \_\_\_\_\_**>> color.
  - b. Aluminum: << **0.040 inch (1.02 mm); or \_\_\_\_\_ inch ( \_\_\_\_\_ mm)**>>.
    - 1) Finish: << **Mill finish; Clear anodized; Black anodized; Bronze anodized; or Hardened powder coat; \_\_\_\_\_ color**>>.
  - c. Slat Profile: No.14, << **3-inch (76 mm)**>> tall flat slat.
  - d. Fenestrated Slats: << **Not required; 3/4 by 5 inch (19 by 127 mm) holes; or 3/4 by 5 inch (19 by 127 mm) holes with Plexiglas covers**>>.
14. Bottom Bar: << **6063-T6 aluminum; Galvanized steel; or 304 Stainless steel**>>.
  - a. Profile: Double angle.

- b. Finish: << **Mill finish; Clear anodized; Bronze anodized; Hot-dip galvanized; Powder coat; or Stainless No.4 satin**>>.
  - 1) Color: << **Match curtain; Black; or \_\_\_\_\_**>>.
- 15. Weatherstripping and Seals:
  - a. Bottom Sensing Edge Seal: Included.
  - b. Interior Guide Seal: << **Required; or Not required**>>.
  - c. Exterior Guide Seal: << **Required; or Not required**>>.
  - d. Lintel Brush Seal: << **Required; or Not required**>>.
- 16. Side Guides, Channels: Constructed of << **steel; or 304 stainless steel**>> with members fully bolted together.
  - a. Finish: << **Hot-dip galvanized; Galvanized, primed black; Powder coat; or Stainless No.4 satin**>>.
    - 1) Color: << **Match curtain; Black; or \_\_\_\_\_**>>.
- 17. Brackets: Steel to support counterbalance and curtain.
  - a. Finish: << **Hot-dip galvanized; Galvanized, primed black; or Powder coat**>>.
    - 1) Color: << **Match curtain; or \_\_\_\_\_**>>.
- 18. Door Roll: Directly driven, springless roll constructed of steel tube with integral shafts, keyed on drive end and supported by self-aligning, greasable, sealed bearings. Counterbalance device not required.
- 19. Hood: << **Not required; 24 gauge, 0.024 inch stainless steel (0.61 mm stainless steel); 24 gauge, 0.028 inch galvanized steel (0.63 mm galvanized steel); 22 gauge, 0.025 inch B&S aluminum (0.64 mm B&S aluminum); or \_\_\_\_\_ gauge, \_\_\_\_\_ inch (\_\_\_\_\_ mm)**>>.
  - a. Finish: << **Galvanized, primed to match curtain; Hot-dip galvanized; Clear anodized; Bronze anodized; Mill finish; Powder coat; \_\_\_\_\_ color; or Stainless No.4 satin**>>.
- 20. Motor Operation: Direct drive, integrated gear motor and brake assembly; size as recommended by manufacturer to move door in either direction at minimum << **8 inches (203 mm)**>>, maximum << **1 foot (305 mm)**>> per second. Operator and drive assembly is factory preassembled and provided with wiring harnesses needed direct from factory.
  - a. Manual Override: Hoist.
  - b. Timer to Close: Time-delay self-close timer and non-resettable cycle counter.
  - c. Operation Supply Voltage: << **208V 1-phase 60Hz; 208V 3-phase 60Hz; 575V 3-phase 60Hz; 220V 1-phase 50Hz; 230V 3-phase 50Hz; or 460V 3-phase 50Hz**>>.
  - d. Signaling Device: << **Horn and strobe combination; or Traffic warning light**>>.
  - e. Actuation Device: Provide << **push button; key switch; pull cord; loop detector; motion detector; treadle switch; and radio control**>>.
  - f. Motor Mounting: Shaft mount.
- g. Obstruction Safety Detection:
  - 1) Primary, Monitored: Wireless reversing safety edge.
  - 2) Secondary, Non-Monitored: << **Reflective photo-eyes; Dual reflective photo-eyes; Thru-beam photo-eyes; or Dual thru-beam photo-eyes**>>.
- h. Control Panel: Provide electronic variable frequency drive controller with microprocessor self-diagnostics. LCD readout indicates door action, alarm conditions, and fault conditions. Enclosure is NEMA 4X-rated. Control system is UL-certified. Junction box is IP67-rated.

- F. Wayne Dalton; Model 800C Insulated Rolling Service Door.
1. Slats: Insulated, interlocking, roll-formed, metal slats.
  
  2. Width: << \_\_\_\_\_ >>.
  
  3. Height: << \_\_\_\_\_ >>.
  4. Mounting: << **Surface-mounted on side indicated on drawings; or Between jamb**>>.
  5. Opening Speed: Door to operate at variable speed up to << **6 to 12 inches (152 to 305 mm)**>> per second.
  6. Closing Speed: Door to operate at variable speed up to << **6 to 12 inches (152 to 305 mm)**>> per second.
  7. Operation Cycles: Capable of operating for minimum << **20,000; 50,000; 100,000; or 200,000**>> cycles. One operation cycle is complete when door is opened from closed position to fully open position and returned to closed position.
  8. Available Warranty:
    - a. Door Only: Two years.
    - b. Door and Operator Warranty: Three years or 20,000 cycles, whichever comes first.
  
  9. Wind Load: Design door assembly to withstand ultimate static pressure load of << **20 psf (0.96 kPa); 31 psf (1.48 kPa); 37 psf (1.77 kPa); 44 psf (2.11 kPa); 47 psf (2.25 kPa); 50 psf (2.39 kPa); 53 psf (2.54 kPa); 55 psf (2.63 kPa); or 56 psf (2.68 kPa)**>> in accordance with << **ASTM E330/E330M**>>.
  10. Wind Load: Not required.
  
  11. Impact Rating: Available with certification for large missile impact resistance (<< **FBC TAS 201**>> and << **FBC TAS 202**>>), with design pressure of << \_\_\_\_\_ psf ( \_\_\_\_\_ Pa)>> at << \_\_\_\_\_ feet ( \_\_\_\_\_ mm)>> wide. << **This design is approved by the Florida Building Commission, FL # \_\_\_\_\_ ; This design is approved by Miami Dade NOA.; Texas Department of Insurance.; or None - N/A**>>
  12. Impact Rating: Not required.
  13. Curtain Material: Staking lock system locks end of each slat from lateral movement.
    - a. Front Slat:
      - 1) Galvanized Steel: << **18 gauge, 0.0516 inch (1.31 mm); 20 gauge, 0.0396 inch (1.01 mm); 22 gauge, 0.0336 inch (0.86 mm); 24 gauge, 0.0278 inch (0.63 mm); or \_\_\_\_\_ gauge, \_\_\_\_\_ inch ( \_\_\_\_\_ mm)**>>.
      - 2) Aluminum: << **0.040 inch (1.02 mm); or \_\_\_\_\_ inch ( \_\_\_\_\_ mm)**>>.
      - 3) Stainless Steel: << **18 gauge, 0.05 inch (1.27 mm); 20 gauge, 0.0359 inch (0.91 mm); 22 gauge, 0.0299 inch (0.76 mm); or \_\_\_\_\_ gauge, \_\_\_\_\_ inch ( \_\_\_\_\_ mm)**>>.
    - b. Back Slat:
      - 1) Galvanized Steel: << **24 gauge, 0.0278 inch (0.63 mm); 22 gauge, 0.0336 inch (0.86 mm); or \_\_\_\_\_ gauge, \_\_\_\_\_ inch ( \_\_\_\_\_ mm)**>>.
      - 2) Aluminum: << **0.024 inch (0.6 mm); 0.040 inch (1.02 mm); or \_\_\_\_\_ inch ( \_\_\_\_\_ mm)**>>.

- 3) Stainless Steel: << **24 gauge, 0.239 inch (0.61 mm)**; or \_\_\_\_\_ gauge, \_\_\_\_\_ inch (\_\_\_\_\_ mm)>>.
- c. Slat Profile: No.34, << **3-inch (76 mm)**>> tall flat slat.
- d. Slat R-Value: << **R-value (RSI-value): 7.7 (1.35)**>>.
- e. Installed System Sound Rating: STC-21 in accordance with <<**ASTM E90**>>.
- f. Air Infiltration: Meets <<**ASHRAE Std 90.1 I-P**>> and <<**ICC (IECC)-2018**>> C402.4.3 air leakage of fenestration, maximum 1.00 cfm/sq ft.
- g. Vision Lites: << **Not required; 3/4 by 5 inches (19 by 127 mm) with Plexiglas covers; or 1 by 10 inches (25 by 254 mm) with Plexiglas covers**>>.
- h. Galvanized Steel Finish: << **Primed white; Primed gray; Primed beige; Primed brown; G90 (Z275); G90 (Z275), primed gray; or Powder coat; \_\_\_\_\_ color**>>.
- i. Aluminum Finish: << **Mill finish; Clear anodized; Bronze anodized; Black anodized; or Powder coat; \_\_\_\_\_ color**>>.
- j. Stainless Steel Finish: << **No.2B mill; or No.4 satin**>>.
14. Bottom Bar: << **6063-T6 aluminum; Galvanized steel; or 304 Stainless steel**>>.
- a. Profile: Double angle.
- b. Finish: << **Mill finish; Clear anodized; Bronze anodized; Hot-dip galvanized; Galvanized, primed black; Powder coat; or Stainless No.4 satin**>>.
- 1) Color: << **Match curtain; Black; or \_\_\_\_\_**>>.
15. Locking Options to Include: << **None; Slide lock; Thumbturn; Cylinder; or Best cylinder**>>.
- a. Lock Locations: << **Both jambs; Left only; or Right only**>>.
- b. Lock Access: << **Coil side; or Opposite coil side**>>.
16. Weatherstripping and Seals:
- a. Bottom Seal Astragal: Included.
- b. Exterior Guide Seal: << **Required; or Not required**>>.
- c. Interior Guide Seal: << **Required; or Not required**>>.
- d. Internal Hood Seal: Included.
- e. Lintel Brush Seal: << **Required; or Not required**>>.
- f. Air Infiltration: Meets <<**ASHRAE Std 90.1 I-P**>> and <<**ICC (IECC)-2018**>> C402.4.3 air leakage of fenestration, maximum 1.00 cfm/sq ft.
- 1) Air infiltration perimeter seal package includes guide cover, guide cap, dual brush exterior guide seal, << **4-inch (101.6 mm)**>> finned lintel brush seal, and vinyl bottom seal.
17. Side Guides, Channels: Constructed of << **steel; 304 stainless steel; or aluminum**>> with members fully bolted together.
- a. Finish: << **Galvanized, primed black; Hot-dip galvanized; Mill finish; Clear anodized; Bronze anodized; Powder coat; or Stainless No.4 satin**>>.
- 1) Color: << **Match curtain; Black; or \_\_\_\_\_**>>.
18. Brackets: << **Steel; or 304 Stainless steel**>> to support counterbalance and curtain.
- a. Finish: << **Galvanized, primed black; Hot-dip galvanized; Powder coat; or Stainless No.4 satin**>>.
- 1) Color: << **Match curtain; or \_\_\_\_\_**>>.

19. Counterbalance: Helical torsion spring type, housed in steel tube or pipe barrel and supporting curtain with deflection limited to << **0.03 inch per foot (1:400 mm/sec)**>> of span. Adjustable spring tension required.
20. Hood: << **Not required; 24 gauge, 0.024 inch stainless steel (0.61 mm stainless steel); 24 gauge, 0.028 inch galvanized steel (0.63 mm galvanized steel); 22 gauge, 0.025 inch B&S aluminum (0.64 mm B&S aluminum); or \_\_\_\_\_ gauge, \_\_\_\_\_ inch (\_\_\_\_\_ mm)**>>.
  - a. Finish: << **Galvanized, primed to match curtain; Hot-dip galvanized; Clear anodized; Bronze anodized; Mill finish; Powder coat; \_\_\_\_\_ color; or Stainless No. 4 satin**>>.
21. Manual Operation: << **Chain hoist; or Crank**>>.
22. Motor Operation: << **Not required; or Provide UL-listed electric operator; size as recommended by manufacturer to move door in either direction at minimum 8 inches (203 mm), maximum 1 foot (305 mm) per second**>>.
  - a. Manual Override: << **Hoist; Hoist and jackshaft release; or Jackshaft release**>>.
  - b. Timer to Close: << **Not required; or Automatic closing controlled by adjustable hold-open time delay**>>.
  - c. Operation Supply Voltage: << **115/208/230V 1 phase 60Hz; 208/230/460V 3 phase 60Hz; 575V 3 phase 60Hz; 220V 1 phase 50Hz; 220V 3 phase 50Hz; or 400V 3 phase 50Hz**>>.
  - d. Signaling Device: << **Horn and strobe combination; or Traffic warning light**>>.
  - e. Actuation Device: Provide << **push button; key switch; pull cord; loop detector; motion detector; treadle switch; and radio control**>>.
  - f. Motor Mounting: << **Wall-mounted; or Front of hood**>>, << **right-hand side; or left-hand side**>>.
  - g. Motor Enclosure: << **Not required; NEMA 4-12 watertight and oiltight; NEMA 4X corrosion-resistant; Totally enclosed, fan-cooled motor; or Totally enclosed, non-ventilated**>>.
  - h. Obstruction Safety Detection: Constant contact button only.
  - i. Obstruction Safety Detection:
    - 1) Primary, Monitored: << **Reflective photo-eyes; Thru-beam photo-eyes; NEMA 4X photo-eyes; 2-wire reversing safety edge; Wireless reversing safety edge; 3-foot (0.9 m) light curtain; or 6-foot (1.8 m) light curtain**>>.
    - 2) Secondary, Non-Monitored: << **Reflective photo-eyes; Thru-beam photo-eyes; 2-wire reversing safety edge; 3-foot (0.9 m) light curtain; or 6-foot (1.8 m) light curtain**>>.

G. Wayne Dalton; Model 800C HC Service Door.

1. Slats: Insulated, interlocking, roll-formed, metal slats.
2. Width: << \_\_\_\_\_>>.
3. Height: << \_\_\_\_\_>>.

4. Mounting: Surface mounted on side indicated on drawings.
5. Opening Speed: Door to operate at variable speed up to << **8 to 12 inches (203 to 305 mm)**>> per second.
6. Closing Speed: Door to operate at variable speed up to << **8 to 12 inches (203 to 305 mm)**>> per second.
7. Operation Cycles: Capable of operating for minimum 500,000 cycles. One operation cycle is complete when door is opened from closed position to fully open position and returned to closed position.
8. Available Warranty:
  - a. Limited Warranty: Three years or 500,000 cycles, whichever comes first.
  
9. Wind Load: Design door assembly to withstand ultimate static pressure load of << **20 psf (0.96 kPa); 31 psf (1.48 kPa); 37 psf (1.77 kPa); 44 psf (2.11 kPa); 47 psf (2.25 kPa); 50 psf (2.39 kPa); 53 psf (2.54 kPa); 55 psf (2.63 kPa); or 56 psf (2.68 kPa)**>> in accordance with <<ASTM E330/E330M>>.
10. Wind Load: Not required.
  
11. Impact Rating: Available with certification for large missile impact resistance (<<FBC TAS 201>> and <<FBC TAS 202>>), with design pressure of << \_\_\_\_\_ psf ( \_\_\_\_\_ Pa)>> at << \_\_\_\_\_ feet ( \_\_\_\_\_ mm)>> wide.<< **This design is approved by the Florida Building Commission, FL # \_\_\_\_\_ ; This design is approved by Miami Dade NOA; or None - N/A**>>
12. Curtain Material:
  - a. Galvanized Steel: << **18 gauge, 0.0516 inch (1.31 mm); 20 gauge, 0.0396 inch (1.01 mm); 22 gauge, 0.0336 inch (0.86 mm); 24 gauge, 0.0278 inch (0.63 mm); or \_\_\_\_\_ gauge, \_\_\_\_\_ inch ( \_\_\_\_\_ mm)**>>.
    - 1) Finish: << **Galvanized, primed white; Galvanized, primed gray; Galvanized, primed beige; Galvanized, primed brown; Galvanized G90 (Z275); Galvanized G90 (Z275), primed gray; or Powder coat; \_\_\_\_\_ color**>>.
  - b. Aluminum: << **0.040 inch (1.02 mm); or \_\_\_\_\_ inch ( \_\_\_\_\_ mm)**>>.
    - 1) Finish: << **Mill finish; Clear anodized; Bronze anodized; or Powder coat; \_\_\_\_\_ color**>>.
  - c. Stainless Steel: << **18 gauge, 0.0478 inch (1.27 mm); 20 gauge, 0.0359 inch (0.91 mm); 22 gauge, 0.0299 inch (0.76 mm); or \_\_\_\_\_ gauge, \_\_\_\_\_ inch ( \_\_\_\_\_ mm)**>>.
    - 1) Finish: << **No.2B mill; or No.4 satin**>>.
  - d. Slat Profile: No.34, << **3-inch (76 mm)**>> tall flat slat.
  - e. Slat R-Value: << **R-value (RSI-value): 7.7 (1.35)**>>.
  - f. Installed System Sound Rating: STC-21 in accordance with <<ASTM E90>>.

- g. Vision Lites: << **Not required; 3/4 by 5 inches (19 by 127 mm) with Plexiglas covers; or 1 by 10 inches (25 by 254 mm) with Plexiglas covers**>>.
13. Bottom Bar: << **6063-T6 aluminum; Galvanized steel; or 304 Stainless steel**>>.
- a. Profile: Double angle.
  - b. Finish: << **Mill finish; Clear anodized; Bronze anodized; Hot-dip galvanized; Galvanized, primed black; Powder coat; or Stainless No.4 satin**>>.
    - 1) Color: << **Match curtain; Black; or \_\_\_\_\_**>>.
14. Weatherstripping and Seals:
- a. Bottom Seal Astragal: Included.
  - b. Exterior Guide Seal: << **Required; or Not required**>>.
  - c. Interior Guide Seal: << **Required; or Not required**>>.
  - d. Internal Hood Seal: Included.
  - e. Lintel Brush Seal: << **Required; or Not required**>>.
15. Side Guides, Channels: Constructed of << **steel; or 304 stainless steel**>> with members fully bolted together.
- a. Finish: << **Hot-dip galvanized; Galvanized, primed black; PowderGuard Premium powder coat; Stainless No.4 satin; PowderGuard Textured powder coat; Powder coat; or PowderGuard Zinc powder coat**>>.
    - 1) Color: << **Match curtain; \_\_\_\_\_; or Black**>>.
16. Brackets: Steel to support counterbalance and curtain.
- a. Finish: << **Hot-dip galvanized; Galvanized, primed black; or Powder coat**>>.
    - 1) Color: << **Match curtain; or \_\_\_\_\_**>>.
17. Door Roll: Directly driven, springless roll constructed of steel tube with integral shafts, keyed on drive end and supported by self-aligning, greasable, sealed bearings. Counterbalance device not required.
18. Hood: << **Not required; 24 gauge, 0.024 inch stainless steel (0.61 mm stainless steel); 24 gauge, 0.028 inch galvanized steel (0.63 mm galvanized steel); 22 gauge, 0.025 inch B&S aluminum (0.64 mm B&S aluminum); or \_\_\_\_\_ gauge, \_\_\_\_\_ inch (\_\_\_\_\_ mm)**>>.
- a. Finish: << **Galvanized, primed to match curtain; Hot-dip galvanized; Clear anodized; Bronze anodized; Mill finish; Powder coat; \_\_\_\_\_ color; or Stainless No.4 satin**>>.
19. Motor Operation: Direct drive, integrated gear motor and brake assembly; size as recommended by manufacturer to move door in either direction at minimum << **8 inches (203 mm)**>>, maximum << **1 foot (305 mm)**>> per second. Operator and drive assembly is factory preassembled and provided with wiring harnesses needed direct from factory.
- a. Manual Override: Hoist.
  - b. Timer to Close: Time-delay self-close timer and non-resettable cycle counter.
  - c. Operation Supply Voltage: << **208V 1-phase 60Hz; 208V 3-phase 60Hz; 230V 3-phase 60Hz; 575V 3-phase 60Hz; 220-240V 1 phase 50Hz; or 440-480V 3 phase 50Hz**>>.
  - d. Signaling Device: << **Horn and strobe combination; or Traffic warning light**>>.
  - e. Actuation Device: Provide << **push button; key switch; pull cord; loop detector; motion detector; treadle switch; and radio control**>>.
  - f. Motor Mounting: Shaft mount.
  - g. Obstruction Safety Detection:
    - 1) Primary, Monitored: << **Reflective photo-eyes; Thru-beam photo-eyes; Dual photo-eyes; or 2-wire reversing safety edge**>>.

- 2) Secondary, Non-Monitored: << **Reflective photo-eyes; Thru-beam photo-eyes; Dual photo-eyes; or 2-wire reversing safety edge**>>.
  - h. Control Panel: Electronic controller with microprocessor self-diagnostics. Digital readout indicates door action, alarm conditions, and fault conditions. Enclosure is IP54-rated, NEMA 3 equivalent.
- H. Wayne Dalton; Model 800C ADV Service Door.
1. Slats: Interlocking, roll-formed, galvanized steel slats.
  2. Width: << \_\_\_\_\_>>.
  3. Height: << \_\_\_\_\_>>.
  4. Mounting: Surface mounted on side indicated on drawings.
  5. Opening Speed: Door to operate at variable speed up to << **24 inches (610 mm)**>> per second.
  6. Closing Speed: Door to operate at variable speed up to << **12 inches (305 mm)**>> per second.
  7. Operation Cycles: Capable of operating for minimum one million cycles. One operation cycle is complete when door is opened from closed position to fully open position and returned to closed position.
  8. Available Warranty:
    - a. Limited Warranty: Five years or one million cycles, whichever comes first.
  9. Wind Load: Design door assembly to withstand ultimate static pressure load of << **20 psf (0.96 kPa); 31 psf (1.48 kPa); 37 psf (1.77 kPa); 44 psf (2.11 kPa); 47 psf (2.25 kPa); 50 psf (2.39 kPa); 53 psf (2.54 kPa); 55 psf (2.63 kPa); or 56 psf (2.68 kPa)**>> in accordance with <<ASTM E330/E330M>>.
  10. Wind Load: Not required.
  11. Impact Rating: Available with certification for large missile impact resistance (<<**FBC TAS 201**>> and <<**FBC TAS 202**>>), with design pressure of << \_\_\_\_\_ psf ( \_\_\_\_\_ Pa)>> at << \_\_\_\_\_ feet ( \_\_\_\_\_ mm)>> wide.<< **This design is approved by the Florida Building Commission, FL # \_\_\_\_\_ ; This design is approved by Miami Dade NOA.; or None - N/A**>>
  12. Curtain Material: << **Galvanized steel; Aluminum; or Stainless steel**>>. Staking lock system locks end of each slat from lateral movement.
    - a. Galvanized Steel: << **18 gauge, 0.0516 inch (1.31 mm); 20 gauge, 0.0396 inch (1.01 mm); 22 gauge, 0.0336 inch (0.86 mm); 24 gauge, 0.0278 inch (0.63 mm); or \_\_\_\_\_ gauge, \_\_\_\_\_ inch ( \_\_\_\_\_ mm)**>>.

- 1) Finish: << **Galvanized, primed white**; Galvanized, primed gray; Galvanized, primed beige; Galvanized, primed brown; Galvanized G90 (Z275); Galvanized G90 (Z275), primed gray; or Powder coat; \_\_\_\_\_ color>>.
  - b. Aluminum: << **0.040 inch (1.02 mm)**; or \_\_\_\_\_ inch (\_\_\_\_\_ mm)>>.
- 
- 1) Finish: << **Mill finish**; Clear anodized; Bronze anodized; or Powder coat; \_\_\_\_\_ color>>.
  - c. Stainless Steel: << **20 gauge, 0.0359 inch (0.91 mm)**; 22 gauge, 0.0299 inch (0.76 mm); or \_\_\_\_\_ gauge, \_\_\_\_\_ inch (\_\_\_\_\_ mm)>>.
    - 1) Finish: << **No.2B mill**; or No.4 satin>>.
  - d. Slat Profile: No.34, << **3-inch (76 mm)**>> tall flat slat.
  - e. Slat R-Value: << **R-value (RSI-value): 7.7 (1.35)**>>.
  - f. Installed System Sound Rating: STC-21 in accordance with <<ASTM E90>>.
  - g. Vision Lites: << **Not required**; or 3/4 by 5 inches (19 by 127 mm) with Plexiglas covers>>.
13. Bottom Bar: << **6063-T6 aluminum**; Galvanized steel; or 304 stainless steel>>.
- a. Profile: Double angle.
  - b. Finish: << **Mill finish**; Clear anodized; Bronze anodized; Hot-dip galvanized; Galvanized, primed black; Powder coat; or Stainless No.4 satin>>.
    - 1) Color: << **Match curtain**; or \_\_\_\_\_>>.
14. Weatherstripping and Seals:
- a. Bottom Sensing Edge Seal: Included.
  - b. Exterior Guide Seal: << **Required**; or Not required>>.
  - c. Interior Guide Seal: << **Required**; or Not required>>.
  - d. Internal Hood Seal: Included.
  - e. Lintel Brush Seal: << **Required**; or Not required>>.
15. Side Guides, Channels: Constructed of << **steel**; or 304 stainless steel>> with members fully bolted together.
- a. Finish: << **Hot-dip galvanized**; Galvanized, primed black; Stainless No.4 satin; or Powder coat>>.
    - 1) Color: << **Match curtain**; or \_\_\_\_\_>>.
16. Brackets: Steel to support counterbalance and curtain.
- a. Finish: << **Hot-dip galvanized**; Galvanized, primed black; or Powder coat>>.
    - 1) Color: << **Match curtain**; or \_\_\_\_\_>>.
17. Door Roll: Directly driven, springless roll constructed of steel tube with integral shafts, keyed on drive end and supported by self-aligning, greasable, sealed bearings. Counterbalance device not required.
18. Hood: << **Not required**; 24 gauge, 0.024 inch stainless steel (0.61 mm stainless steel); 24 gauge, 0.028 inch galvanized steel (0.63 mm galvanized steel); 22 gauge, 0.025 inch B&S aluminum (0.64 mm B&S aluminum); or \_\_\_\_\_ gauge, \_\_\_\_\_ inch (\_\_\_\_\_ mm)>>.

- a. Finish: << **Galvanized, primed to match curtain; Hot-dip galvanized; Clear anodized; Bronze anodized; Mill finish; Powder coat; \_\_\_\_\_ color; or Stainless No.4 satin**>>.
- 19. Motor Operation: Direct drive, integrated gear motor and brake assembly; size as recommended by manufacturer to move door in either direction at minimum << **8 inches (203 mm)**>>, maximum << **1 foot (305 mm)**>> per second. Operator and drive assembly is factory preassembled and provided with wiring harnesses needed direct from factory.
  - a. Manual Override: Hoist.
  - b. Timer to Close: Time-delay self-close timer and non-resettable cycle counter.
  - c. Operation Supply Voltage: << **208V 1-phase 60Hz; 208V 3-phase 60Hz; 575V 3-phase 60Hz; 220V 1-phase 50Hz; 230V 3-phase 50Hz; or 460V 3-phase 50Hz**>>.
  - d. Signaling Device: << **Horn and strobe combination; or Traffic warning light**>>.
  - e. Actuation Device: Provide << **push button; key switch; pull cord; loop detector; motion detector; treadle switch; and radio control**>>.
  - f. Motor Mounting: Shaft mount.
- g. Obstruction Safety Detection:
  - 1) Primary, Monitored: Wireless reversing safety edge.
  - 2) Secondary, Non-Monitored: << **Reflective photo-eyes; Dual reflective photo-eyes; Thru-beam photo-eyes; or Dual thru-beam photo-eyes**>>.
- h. Control Panel: Provide electronic variable frequency drive controller with microprocessor self-diagnostics. LCD readout indicates door action, alarm conditions, and fault conditions. Enclosure is NEMA 4X-rated. Control system is UL-certified. Junction box is IP67-rated.

### 2.03 UPWARD COILING SECURITY SHUTTERS

- A. Wayne Dalton; Model 523 Security Shutter.
  - 1. Slats: Interlocking, extruded aluminum slats.
  - 2. Width: << \_\_\_\_\_>>.
  - 3. Height: << \_\_\_\_\_>>.
  - 4. Mounting: << **Surface-mounted on side indicated on drawings; or Between jamb**>>.
  - 5. Opening Speed: Door to operate at variable speed up to << **8 inches (203 mm)**>> per second.
  - 6. Closing Speed: Door to operate at variable speed up to << **12 inches (305 mm)**>> per second.
  - 7. Curtain Material: << **0.050-inch (1.27 mm)**>> thick aluminum.
    - a. Fenestrated Slats: << **Not required; Open fenestration; 1-by-1-inch (25.4 by 25.4 mm) uniformly spaced openings over full curtain; Partially open fenestration; 1-by-1-inch (25.4 by 25.4 mm) uniformly spaced openings. Height of fenestrated curtain segment as indicated on drawings; Perforated slats; full curtain; or Perforated slats; partial curtain. Height of perforated curtain segment as indicated on drawings**>>.

- b. Aluminum Finish: << **White; Almond; Silver powder coat to match look of clear anodized aluminum; Bronze powder coat to match look of bronze anodized; or Powder coat; \_\_\_\_\_ color**>>.
- 8. Bottom Bar: 6063-T6 aluminum.
  - a. Profile: << **Compact extruded; or Extruded tube**>>.
  - b. Finish: Match curtain.
- 9. Locking Options to Include: << **None; Slide lock; Cylinder; or Best cylinder**>>.
  - a. Lock Locations: << **Both jambs; Left only; Right only; or Center**>>.
  - b. Lock Access: << **Coil side; Opposite coil side; or Both sides**>>.
  - c. Interlock micro switch on locking doors with tube motor operation.
- 10. Weatherstripping and Seals:
  - a. Bottom Seal Astragal: Required.
- 11. Side Guides, Channels: Constructed of aluminum extruded channels with continuous PVC wear strips.
  - a. Finish: Match curtain.
- 12. Brackets: Galvanized steel to support counterbalance, curtain, and hood.
  - a. Finish: Match curtain.
- 13. Counterbalance: Helical torsion spring type, housed in steel tube or pipe barrel and supporting curtain with deflection limited to << **0.03 inch per foot (1:400 mm/sec)**>> of span. Adjustable spring tension required.
- 14. Hood: Aluminum. Box sized to match manufacturer's recommendation based on door height. Provide with intermediate support brackets as required on drawings.
  - a. Finish: << **Match curtain; or Powder coat; \_\_\_\_\_ color**>>.
- 15. Manual Operation: << **Push-up; or Crank**>>.
- 16. Motor Operation: Provide UL-listed electric tube motor; size as recommended by manufacturer to move door in either direction at minimum << **8 inches (203 mm)**>>, maximum << **1 foot (305 mm)**>> per second.
  - a. Manual Override: << **Not required; or Crank**>>.
  - b. Operation Supply Voltage: << **110V; or 240V**>>.
  - c. Actuation: Double throw, hard-wired wall switch.
  - d. Motor Mounting: Within counterbalance tube.

## 2.04 UPWARD COILING SHEET DOORS

- A. Wayne Dalton; Model 770SS Sheet Door.

- 1. Width: << \_\_\_\_\_>>.
- 2. Height: << \_\_\_\_\_>>.
- 3. Mounting: Surface mounted on side indicated on drawings.

4. Opening Speed: Door to operate at variable speed up to << **8 inches (203 mm)**>> per second.
  5. Closing Speed: Door to operate at variable speed up to << **12 inches (305 mm)**>> per second.
  6. Operation Cycles: Capable of operating for minimum 10,000 cycles. One operation cycle is complete when door is opened from closed position to fully open position and returned to closed position.
  7. Curtain: Roll-formed, << **26 gauge, 0.217 inch (0.55 mm)**>>, << **G30 (Z90)**>> galvanized steel sheet in accordance with << **ASTM A653/A653M**>>, SS Grade 80. Sections interlocked and permanently seamed together to form continuous curtain. Provided with PVC edge strip stapled on edge of exterior side to minimize steel-to-steel contact, enhance door operation, and minimize curtain nesting and scratching.
    - a. Finish: Rust-inhibitive roll coating process, including << **0.2 mil (0.0051 mm)**>> baked-on prime paint and << **0.6 mil (0.015 mm)**>> baked-on polyester top coat.
      - 1) Color: << **White; Glossy White; Silhouette Gray; Buckskin; Desert Tan; Garnet Red; Walnut Brown; Polar Blue; Royal Blue; Teal; Dark Teal; Forest Green; Bronze; or Matte black**>>.
  8. Bottom Bar: Extruded aluminum reinforced with << **1-1/2-by-1-1/2-inch (38 by 38 mm)**>> roll-formed steel angle and provided with flexible PVC bulb-type astragal to ensure consistent seal along floor. Extrusion designed to interlock with door curtain.
    - a. Bottom Bar Stops: << **12-gauge, 0.108-inch (2.75 mm)**>> galvanized steel with quick-connect design allowing curtain insertion into universal guide and lock into place with one fastener.
    - b. Finish: Mill finish.
  9. Locking Options to Include: << **None; Slide lock; or Slide lock that accepts cylinder or padlock**>>.
    - a. Lock Locations: << **Both jambs; Left only; or Right only**>> in bottom bar.
    - b. Lock Access: << **Coil side; or Opposite coil side**>>.
    - c. Optional Dual Exterior Slide Bolt Curtain Locks: << **Required; or Not required**>>.
  10. Weatherstripping and Seals:
    - a. Bottom Seal Astragal: Included.
  11. Guides: << **1-5/8 inches (41 mm)**>> wide, roll-formed, << **18-gauge, 0.0478-inch (1.21 mm)**>> steel guides with UHMW polypropylene rub strips on each edge. Through-hole design allows easy access from front for fastener attachment to concrete, wood, steel, or masonry jambs. Prepunched to accept quick-connect attachment of headplate and bottom bar stops.
    - a. Finish: Galvanized.
  12. Headplates: << **14-gauge, 0.0747-inch (1.90 mm)**>> steel with steel roller bearings to prevent steel-to-steel contact for improved door operations and extended door shaft life. Quick-connect design for quick assembly to guides.
    - a. Finish: Galvanized.
  13. Counterbalance: Assembly includes stepped design steel rings to ensure tight and uniform curtain wrap, << **3-3/8-inch (86 mm)**>> inside diameter springs, and << **1-5/16-inch (35 mm)**>> diameter shaft with << **0.065-inch (1.65 mm)**>> wall thickness to minimize door deflection.
  14. Manual Operation: Push-up.
- B. Wayne Dalton; Model 780CD sheet door.

1. Width: << \_\_\_\_\_>>.

2. Height: << \_\_\_\_\_ >>.
3. Mounting: Surface mounted on side indicated on drawings.
4. Opening Speed: Door to operate at variable speed up to << **8 inches (203 mm)**>> per second.
5. Closing Speed: Door to operate at variable speed up to << **12 inches (305 mm)**>> per second.
6. Operation Cycles: Capable of operating for minimum 10,000 cycles. One operation cycle is complete when door is opened from closed position to fully open position and returned to closed position.
7. Curtain: << **26-gauge, 0.217-inch (0.55 mm)**>> galvanized steel sheets.
  - a. Finish: Standard polyester base coat; << **white; glossy white; silhouette gray; buckskin; desert tan; garnet red; walnut brown; polar blue; royal blue; teal; dark teal; forest green; bronze; or matte black**>> color.
8. Bottom Bar: Extruded aluminum reinforced with << **1-1/2- by 2-inch (38 by 51 mm)**>> roll-formed steel angle and provided with flexible PVC bulb-type astragal to ensure consistent seal along floor. Extrusion designed to interlock with door curtain.
  - a. Bottom Bar Stops: << **12-gauge, 0.108-inch (2.75 mm)**>> galvanized steel with quick-connect design allowing curtain insertion into universal guide and lock into place with one fastener.
  - b. Finish: Mill finish.
9. Locking Options to Include: << **None; Slide lock; or Slide lock that accepts cylinder or padlock**>>.
  - a. Lock Locations: << **Both jambs; Left only; or Right only**>> in bottom bar.
  - b. Lock Access: << **Coil side; or Opposite coil side**>>.
  - c. Optional Dual Exterior Slide Bolt Curtain Locks: << **Required; or Not required**>>.
10. Weatherstripping and Seals:
  - a. Bottom Seal Astragal: Included.
11. Guides: << **3 inches (76 mm)**>> wide, roll-formed, << **18-gauge, 0.0478-inch (1.21 mm)**>> steel guides with UHMW polypropylene rub strips on each edge. Through-hole design allows easy access from front for fastener attachment to concrete, wood, steel, or masonry jambs. Prepunched to accept quick-connect attachment of bottom bar stops.
  - a. Finish: Galvanized.
12. Headplates: << **Heavy-duty thick welded steel; Stamped steel; or \_\_\_\_\_**>> mounted directly to wall to support door shaft and ensure smooth door roll operation.
  - a. Finish: Galvanized.
13. Counterbalance: Assembly includes stepped design steel rings with steel roller bearings to ensure tight, uniform curtain wrap, enhanced door operation, and cycle life; factory-lubricated << **3-3/8-inch (86 mm)**>> inside diameter springs; and << **1-5/16-inch (35 mm)**>> diameter shaft with << **0.065-inch (1.65 mm)**>> wall thickness to minimize door deflection. Design allows quick assembly of non-handed chain hoist on either side of door.
  
14. Manual Operation: << **Push-up; or Chain hoist**>>.
15. Motor Operation: Provide UL-listed electric operator; size as recommended by manufacturer to move door in either direction at minimum << **8 inches (203 mm)**>>, maximum << **1 foot (305 mm)**>> per second.
  - a. Manual Override: << **Hoist; Hoist and jackshaft release; or Jackshaft release**>>.
  - b. Timer to Close: << **Not required; or Automatic closing controlled by adjustable hold-open time delay**>>.

- c. Operation Supply Voltage: << **115/208/230V 1-phase 60Hz; 208/230/460V 3-phase 60Hz; 575V 3-phase 60Hz; 220V 1-phase 50Hz; 220V 3-phase 50Hz; or 400V 3-phase 50Hz**>>.
- d. Signaling Device: << **Horn and strobe combination; or Traffic warning light**>>.
- e. Actuation Device: Provide << **push button; key switch; pull cord; loop detector; motion detector; treadle switch; and radio control**>>.
- f. Motor Mounting: << **Wall-mounted; or Front of hood**>>, << **right-hand side; or left-hand side**>>.
- g. Obstruction Safety Detection: Infrared sensor mounted in-plane to door curtain.
- h. Reversing Safety Edge: << **Not required; Door provided with wireless monitored electric safety edge; or Door provided with wired monitored electric safety edge**>>.

C. Wayne Dalton; Model 790CW Sheet Door.

- 1. Width: << \_\_\_\_\_>>.
- 2. Height: << \_\_\_\_\_>>.
- 3. Mounting: Surface mounted on side indicated on drawings.
- 4. Opening Speed: Door to operate at variable speed up to << **8 inches (203 mm)**>> per second.
- 5. Closing Speed: Door to operate at variable speed up to << **12 inches (305 mm)**>> per second.
- 6. Operation Cycles: Capable of operating for minimum 10,000 cycles. One operation cycle is complete when door is opened from closed position to fully open position and returned to closed position.
- 7. Wind Load: Design door assembly to withstand ultimate static pressure load of << **22 psf (1.05 kPa); 26 psf (1.25 kPa); 31 psf (1.48 kPa); 36 psf (1.72 kPa); or 41 psf (1.96 kPa)**>> in accordance with << **ASTM E330/E330M**>>.
- 8. Curtain: Roll-formed, << **26-gauge, 0.217-inch (0.55 mm)**>>, << **G30 (Z90)**>> galvanized steel sheet in accordance with << **ASTM A653/A653M**>>, SS Grade 80. Sections interlocked and permanently seamed together to form continuous curtain. Provide with PVC edge strip stapled on edge of exterior side to minimize steel-to-steel contact, enhance door operation, and minimize curtain nesting and scratching.
  - a. Wind Locks: 9-gauge ductile iron wind locks on each edge of curtain, spaced in accordance with door size and wind load requirements.
  - b. Finish: Rust-inhibitive roll coating process including << **0.2 mil (0.0051 mm)**>> baked-on prime paint and << **0.6 mil (0.015 mm)**>> baked-on polyester top coat.
  - c. Color: << **White; Glossy White; Silhouette Gray; Buckskin; Desert Tan; Garnet Red; Walnut Brown; Polar Blue; Royal Blue; Teal; Dark Teal; Forest Green; Bronze; or Matte black**>>.
- 9. Bottom Bar: Extruded aluminum reinforced with << **1-1/2-by-2-inch (38 by 51 mm)**>> roll-formed steel angle; provide with flexible, PVC bulb-type astragal, ensuring consistent seal along floor. Extrusion designed to interlock with door curtain.

- a. Bottom Bar Stops: << **12-gauge, 0.108-inch (2.75 mm)**>> galvanized steel with quick-connect design, allowing curtain insertion into universal guide and lock into place with one fastener.
  - b. Finish: Mill finish.
10. Locking Options to Include: << **None; Slide lock; or Slide lock that accepts cylinder or padlock**>>.
- a. Lock Locations: << **Both jambs; Left only; or Right only**>> in bottom bar.
  - b. Lock Access: << **Coil side; or Opposite coil side**>>.
  - c. Optional Dual Exterior Slide Bolt Curtain Locks: << **Required; or Not required**>>.
11. Weatherstripping and Seals:
- a. Bottom Seal Astragal: Included.
12. Guides: << **3 inches (76 mm)**>> wide, roll-formed, << **14 gauge, 0.0747 inch (1.90 mm)**>>, Grade 50 steel guides with UHMW polypropylene rub strips on each edge. Through-hole design allows easy access from front for fastener attachment to concrete, wood, steel, or masonry jambs. Prepunched to accept quick-connect attachment of bottom bar stops.
- a. Finish: Galvanized.
13. Headplates: << **Stamped, 11-gauge steel; or Heavy-duty, 0.187-inch (4.76 mm) thick welded steel**>> mounted directly to wall to support door shaft and ensure smooth door roll operation.
- a. Finish: Galvanized.
14. Counterbalance: Assembly includes stepped design steel rings with steel roller bearings to ensure tight, uniform curtain wrap, enhanced door operation, and cycle life; factory-lubricated, << **3-3/8-inch (86 mm)**>> inside diameter springs; and << **1-5/16-inch (35 mm)**>> diameter shaft with << **0.065-inch (1.65 mm)**>> wall thickness to minimize door deflection. Design allows quick assembly of non-handed chain hoist on either side of door.
15. Manual Operation: << **Push-up; or Chain hoist**>>.
16. Motor Operation: Provide UL-listed electric operator; size as recommended by manufacturer to move door in either direction at minimum << **8 inches (203 mm)**>>, maximum << **1 foot (305 mm)**>> per second.
- a. Manual Override: << **Hoist; Hoist and jackshaft release; or Jackshaft release**>>.
  - b. Timer to Close: << **Not required; or Automatic closing controlled by adjustable hold-open time delay**>>.
  - c. Operation Supply Voltage: << **115/208/230V 1-phase 60Hz; 208/230/460V 3-phase 60Hz; 575V 3-phase 60Hz; 220V 1-phase 50Hz; 220V 3-phase 50Hz; or 400V 3-phase 50Hz**>>.
  - d. Signaling Device: << **Horn and strobe combination; or Traffic warning light**>>.
  - e. Actuation Device: Provide << **push button; key switch; pull cord; loop detector; motion detector; treadle switch; and radio control**>>.
  - f. Motor Mounting: << **Wall-mounted; or Front of hood**>>, << **right-hand side; or left-hand side**>>.
  - g. Obstruction Safety Detection: Infrared sensor mounted in-plane to door curtain.
  - h. Reversing Safety Edge: << **Not required; Door provided with wireless monitored electric safety edge; or Door provided with wired monitored electric safety edge**>>.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify << **existing conditions**; and \_\_\_\_\_ >> meet manufacturer's requirements before starting work.
- B. Verify opening sizes, tolerances, and conditions are acceptable.

### **3.02 INSTALLATION**

- A. Install in accordance with manufacturer's written instructions.
- B. Use anchorage devices to securely fasten assembly to wall construction and building structure without distortion or stress.
- C. Securely and rigidly brace components suspended from structure.<< **Secure guides to structural members only**; \_\_\_\_\_ .; or **None - N/A**>>
- D. Fit and align assembly, including hardware. Level and plumb to provide smooth operation.
- E. Coordinate installation of electrical service; see Section << **260583**>>.
- F. Install enclosure and perimeter trim.

### **3.03 TOLERANCES**

- A. Maintain dimensional tolerances and alignment with adjacent work.
- B. Maximum Variation from Plumb: << **1/16 inch (1.6 mm)**; or \_\_\_\_\_ inch (\_\_\_\_\_ mm)>>.
- C. Maximum Variation from Level: << **1/16 inch (1.6 mm)**; or \_\_\_\_\_ inch (\_\_\_\_\_ mm)>>.
- D. Longitudinal or Diagonal Warp: Plus or minus << **1/8 inch per 10 feet (3.2 mm per 3 m)**; or \_\_\_\_\_ inch per 10 feet (\_\_\_\_\_ mm per 3 m)>> straight edge.

### **3.04 ADJUSTING**

- A. Adjust operating assemblies for smooth and noiseless operation.

### **3.05 CLEANING**

- A. See Section << **017000 - Execution and Closeout Requirements**>> for additional requirements.
- B. Clean installed components.
- C. Remove labels and visible markings.

### **3.06 PROTECTION**

- A. Protect finishes until completion of project.
- B. Touch up damaged finishes after Date of Substantial Completion.

**END OF SECTION**