SECTION 08 42 33

REVOLVING ENTRANCE DOORS

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\*\* NOTE TO SPECIFIER \*\* Horton Automatics division of Overhead Door Corporation; revolving entrance door products.  
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This section is based on the products of Horton Automatics division of Overhead Door Corporation, which is located at:  
4242 Baldwin Blvd.  
Corpus Christi, TX 78405-3399  
Toll Free Tel: 800-531-3111  
Tel: 361-888-5591  
Fax: 800-531-3108  
Email: [request info (Ashley\_Estrada@OverheadDoor.com.)](http://admin.arcat.com/users.pl?action=UserEmail&company=Horton+Automatics+division+of+Overhead+Door+Corporation&coid=33119&rep=&fax=800-531-3108&message=RE:%20Spec%20Question%20(08470hor):%20%20&mf=)  
Web: [http://www.hortondoors.com](http://http://www.hortondoors.com)   
 [ [Click Here](http://www.arcat.com/arcatcos/cos33/arc33119.html) ] for additional information.  
Horton Automatics has been designing, manufacturing and selling automatic doors since 1960, when we developed the first automatic sliding door in America.  
Horton Automatics brings convenient access to commercial, industrial, and institutional locations. Our doors meet or exceed the exit requirements for every major code in the United States, as well as providing compliance for the Americans with Disabilities Act (ADA) and Metro-Dade. Every automatic entrance manufactured is treated as a special custom order while still providing the fastest delivery time in the market today.  
Horton Automatics is a division of Overhead Door Corporation. Overhead Door invented the first upward-acting door in 1921 and the first electric door opener in 1926. Today, Overhead Door continues to be the industry leader through the strength of their product innovation, superior craftsmanship and outstanding customer support.

1. GENERAL
   1. SECTION INCLUDES

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

* + 1. Automatic Revolving Door Assemblies.
    2. Manual Revolving Door Assemblies.
    3. Security Revolving Doors Systems
  1. RELATED SECTIONS

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

* + 1. Section 03 30 00 - Cast-in-Place Concrete.
    2. Section 07 90 00 - Joint Protection.
    3. Section 08 41 23 - Steel-Framed Entrances and Storefronts.
    4. Section 08 71 53 - Security Door Hardware.
    5. Section 08 83 13 - Mirrored Glass Glazing.
    6. Section 08 85 00 - Glazing Accessories.
    7. Section 28 13 53 - Security Access Detection.
    8. Section 26 05 00 - Common Work Results for Electrical.
    9. Section 27 05 39 - Surface Raceways for Communications Systems.
  1. REFERENCES

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

* + 1. AWI - Quality Standards Illustrated.
    2. AAMA 611 - Voluntary Specification for Anodized Architectural Aluminum.
    3. AAMA 2604 - Voluntary specification, Performance Requirements and Test Procedures for High Performance Organic Coatings on Aluminum Extrusions and Panels.
    4. AAMA 2605 - Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels.
    5. ASTM A 36/A 36M - Standard Specification for Carbon Structural Steel.
    6. ASTM A 123/A 123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.
    7. ASTM A 480/A 480M - Standard Specification for General Requirements for Flat-Rolled Stainless and Heat-Resisting Steel Plate, Sheet, and Strip.
    8. ASTM A 653/A 653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
    9. ASTM B 209 - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate.
    10. ASTM B 221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes.
    11. ANSI/BHMA A156.27 - American National Standard for Power and Manual Operated Revolving Pedestrian Doors.
    12. ANSI-Z97.1.2 - Safety Performance Specifications and Methods of Test for Safety Glazing Materials Used in Buildings.
    13. UL 325 - Door, Drapery, Gate, Louver, and Window Operators and Systems - (UL) listed.
    14. Intertek, Warnock Hersey (ETL) - Testing Laboratory and Certification Agency joined with ETL Semko.
    15. CDA - Copper in Architecture - Handbook.
  1. DESIGN / PERFORMANCE REQUIREMENTS

\*\* NOTE TO SPECIFIER \*\* Edit the following as required to suit local codes and conditions.

* + 1. System Assembly: Design system to accommodate movement within system, movement between system and perimeter framing components, dynamic loading and release of loads, and deflection of structural support framing, without damage to system or components, or deterioration of perimeter seal.
    2. System Internal Drainage: Drain water entering joints, condensation occurring in glazing channels, or migrating moisture occurring within system, to exterior.
    3. Expansion / Contraction: System to provide for expansion and contraction within system components caused by cycling surface temperature range of 170 degrees F (77 degrees C) without causing detrimental effects to system or components.
    4. Deflection: Limit mullion deflection to 1/175 or flexure limit of glass with full recovery of glazing materials, whichever is less.
    5. Not Permitted: Wind whistles, thermal movement transmitted to other building elements, and loosening, weakening, or fracturing of attachments or components of system.
    6. Products Requiring Electrical Connection: Listed and classified by UL or testing firm acceptable to authority having jurisdiction.
    7. Glass And Glazing: Glass stops, glazing vinyl and setting blocks for field glazing as per Safety Glazing standard ANSI Z97.1.2. Coordinate acquisition of glass in thickness and type in accordance with manufacturer's recommendations for prescribed design.
    8. Electrical: 120 VAC, 50/60 cycle, single phase, dedicated circuit per operator. Non-North American voltages can be 240 VAC 50/60 cycle except operator must have 240 volt power supply.
  1. SUBMITTALS
     1. Submit under provisions of Section 01 30 00 - Administrative Requirements.
     2. Product Data: Manufacturer's data sheets on each product to be used, including:
        1. Preparation instructions and recommendations.
        2. Storage and handling requirements and recommendations.
        3. Installation methods.
     3. Shop Drawings: Indicate system dimensions, elevations, conditions and details of adjacent construction, component locations, and setting requirements of brackets and attachments requiring placement on or in other Work.
     4. LEED Submittals: Provide documentation of how the requirements of Credit will be met:
        1. Product Data for Credit MR 4.1 and MR 4.2: For products having recycled content, documentation including percentages by weight of post consumer and preconsumer recycled content
           1. Include statement indicating costs for each product having recycled content.
        2. Product Data for Credit EQ 4.2: For paints and coatings used to finish aluminum surfaces, including printed statement of VOC content.
        3. Product Data for Credit MR 5.1 and Credit MR 5.2: Submit data, including location and distance from Project of material manufacturer and point of extraction, harvest or recovery for main raw material.
           1. Include statement indicating cost for each regional material and the fraction by weight that is considered regional.

\*\* NOTE TO SPECIFIER \*\* Delete selection samples if colors have already been selected.

* + 1. Selection Samples: For each finish product specified, two complete sets of color chips representing manufacturer's full range of available colors and patterns.
    2. Verification Samples: For each finish product specified, two samples, minimum size 6 inches (150 mm) square, representing actual product, color, and patterns.
    3. Manufacturer's Certificates: Certify products meet or exceed specified requirements.
    4. Manufacturers warranties.
    5. Closeout: Submittals:
       1. As-Built Record Documents showing actual installation conditions and wiring.
       2. Manufacturer's Warranty.
       3. Parts lists and maintenance instructions including data on operating hardware, lubrication requirements, and inspection procedures related to preventative maintenance.
  1. QUALITY ASSURANCE
     1. Manufacturer Qualifications: Manufacturer to have minimum five years documented experience in the fabrication of automatic doors of the type required for this project and be capable of providing field service representation during installation.
     2. Installer Qualifications: Installer to be experienced in the work of this section who has specialized in the installation of work similar to that required for this project.
     3. Certified Inspector: Copy of current AAADM Certification for AAADM inspector prior inspection.
  2. DELIVERY, STORAGE, AND HANDLING
     1. Package hardware items individually with necessary fasteners and installation templates when necessary; label and identify each package with door opening code to match door schedule.
     2. Store products in manufacturer's unopened packaging until ready for installation.
     3. Protect materials from exposure to moisture. Do not deliver until after wet work is complete and dry.
     4. Store materials in a dry, warm, ventilated weathertight location.
  3. SEQUENCING
     1. Ensure that locating templates and other information required for installation of products of this section are furnished to affected trades in time to prevent interruption of construction progress.
     2. Ensure that products of this section are supplied to affected trades in time to prevent interruption of construction progress.
  4. PROJECT CONDITIONS
     1. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.
  5. MAINTENANCE MATERIALS
     1. Provide special wrenches and tools applicable to each different or special hardware component.
  6. COORDINATION
     1. Coordinate work with other directly affected components involving manufacture or fabrication of reinforcement for door hardware and recessed items.
     2. Coordinate work with other directly affected components involving electrical wiring and components.

1. PRODUCTS
   1. MANUFACTURERS
      1. Acceptable Manufacturer: Horton Automatics division of Overhead Door Corporation, which is located at: 4242 Baldwin Blvd.; Corpus Christi, TX 78405-3399; Toll Free Tel: 800-531-3111; Tel: 361-888-5591; Fax: 800-531-3108; Email: [request info (Ashley\_Estrada@OverheadDoor.com.)](http://admin.arcat.com/users.pl?action=UserEmail&company=Horton+Automatics+division+of+Overhead+Door+Corporation&coid=33119&rep=&fax=800-531-3108&message=RE:%20Spec%20Question%20(08470hor):%20%20&mf=); Web: [http://www.hortondoors.com](http://http://www.hortondoors.com)

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

* + 1. Substitutions: Not permitted.
    2. Requests for substitutions will be considered in accordance with provisions of Section 01 60 00 - Product Requirements.

\*\* NOTE TO SPECIFIER \*\* Edit the following General paragraphs as required and applicable to project LEED requirements. Coordinate project locations for applicable regional credits. Delete the paragraphs that are not applicable or if LEED is not applicable.

* 1. AUTOMATIC REVOLVING DOORS
     1. Automatic Revolving Door:
        1. Model:

\*\* NOTE TO SPECIFIER \*\* Select the model required from the following paragraphs as required and delete the one not required.

* + - * 1. AutoFlow Series 9300 Automatic Revolving Door with Collapsing Three-Wing Design. Units include operator, enclosure/drum with canopy, door wings/panels, center shaft, and pivot/bearing.
        2. Automatic Large Diameter Revolving Door with Center Shaft: MiniGrand Series 9300MG Large Diameter Automatic Revolving Door with Collapsing Three-Wing Design.
        3. Grand Series 9600 Large Diameter Automatic Revolving Door with Center Core.
      1. Operator: Adjustable power operator mounted within an enclosure canopy with 1/4 HP 500 RPM high torque motor, 90 VDC electric brake, gear box, and control panel. Operator is ETL approved and tested to UL 325 Standard. Non-listed units are not acceptable.
         1. Double seal, corrosion-proof, cast iron gear case with case hardened (60Rc) helical gears in synthetic, low temperature oil bath lubrication.
         2. Motor drive enclosed to prevent EMI noise from affecting the microprocessor control.
         3. A 1-1/2 inch (38 mm) diameter solid steel center shaft serves as main linkage to connect the operator to revolving door wings. At-rest position of door wings is adjustable to suit the traffic and desired function.

\*\* NOTE TO SPECIFIER \*\* Select the following optional brake paragraph if required or delete if not required.

* + - * 1. 90 VDC electric brake for Park & Lock operation.
      1. Master Control: Microprocessor Master Control Panel (MCP) multiprocessor digital control system utilizing time-division multiplexed operations to provide precision motor-drive, constant sensor monitoring, and automated setup. Provide with RS-232 port for communication with external display (by others) to monitor door status, violations and operation. All inputs have an adjacent LED to verify input signals. Modular MCP is capable of exchanging individual control components without having to replace the entire system. Three sets of programmable Form C contacts are available for monitoring door functions or violations.
         1. Parameters: 99 adjustable functions provided including but not limited to:

Door speeds

Time delays

Reaction to, and force required for safety stops

Safety stops before idle

* + - * 1. Modes: Shall define how the door will be used. A key switch is provided for selecting operating modes. Operating modes provided include but not be limited to:

Full Automatic - Motion sensor activation for entry and exit

Exit only - door not locked but responds only to interior activation

Continuous run - after activation expires, door will continue to run at reduced speed until activation signal is received

Optional: Park & Lock - stops all activating signals so door will stop and lock (requires optional electric brake)

* + - * 1. Diagnostics: Used to set-up and maintain unit via a wireless Local Remote Control (LCP) with seven segment diagnostic display from outside the door. Adjustments at the control or via a wired remote shall not be considered equal. Logic will perform a self-set up, not requiring technician intervention or changes to ensure a safe installation. 16 diagnostic modes provided including but not limited to:

Calculating unit speed in RPM's

Testing voice module

Global relearn sets safety sensitivity to optimum level

Checking motor voltage, current and optional brake voltage

* + - * 1. Voice Annunciator: 4 digital 100 percent solid state field programmable voice message provided. Tape recorded message are not be accepted.

\*\* NOTE TO SPECIFIER \*\* Select the paragraph required for the Model specified from the following 2 paragraphs and delete if not required.

* + - 1. Automatic Activation: AutoFlow Series 9300 Automatic Revolving Door with Collapsing Three-Wing Design.
         1. Motion sensor shall be placed at revolving door entrance to detect someone approaching door. Actuation causes door to revolve at the rate of 3-5 RPM (adjustable) for one complete turn after actuating signal is removed. Door will then slow then stop at the ' at-rest' position.
         2. Momentary contact switches with 1 inch (25 mm) diameter push button shall be placed at entrance to door. Switch mounting plate reads "Push Button To Slow Door". Pushing this button will cause door to revolve at 1-3 RPM for a selected amount of time. A digital voice annunciator will say "Door In Slow Speed, Do Not Push." Slow speed operation will be protected by a tracking governor only allowing more than 1 RPM over the adjusted speed. Note: Door can annunciate "Caution, door speed will increase" before resuming normal run speed (selectable).
      2. Automatic Activation: MiniGrand Series 9300MG Large Diameter Automatic Revolving Door with Collapsing Three-Wing Design and Grand Series 9600 Large Diameter Automatic Revolving Door with Center Core.
         1. Two motion sensor shall be placed at revolving door entrance to detect someone approaching door. Actuation causes door to revolve at the rate of 3-5 RPM (adjustable) for one complete turn after actuating signal is removed. Door will then slow then stop at the ' at-rest' position.
         2. Two momentary contact switches with 1 inch (25 mm) diameter push button shall be placed at entrance to door. Switch mounting plate reads "Push Button To Slow Door". Pushing this button will cause door to revolve at 1-3 RPM for a selected amount of time. A digital voice annunciator will say "Door In Slow Speed, Do Not Push." Slow speed operation will be protected by a tracking governor only allowing more than 1 RPM over the adjusted speed. Note: Door can annunciate "Caution, door speed will increase" before resuming normal run speed (selectable).
      3. Collapsing Mechanism: Door operator will stop when a door wing is out of position (broken out) more than 15 degrees.
         1. Door design equipped with mechanical breakaway and completely bookfold in case of emergency as required by Codes. Wings can be broken away with 80-130 lbs (355-578 N) of force (adjustable).

\*\* NOTE TO SPECIFIER \*\* Select the following optional magnetic breakaway paragraph if required or delete if not required.

* + - * 1. Magnetic Breakaway: Door design shall be equipped with magnetic breakaway and completely bookfold in case of emergency as required by Codes.

Electromagnets shall be capable of holding with more than 1000 lbs. (4400 N) min. force to maintain system integrity and hold door wings in their respective positions under normal conditions.

Alarm Circuit: Supplied and be connected to the building's alarm system. Activation of the fire alarm, smoke detector or remote emergency button shall remove power to the door's electromagnetic locks and allow the wings to completely bookfold in case of emergency as required by Codes.

Emergency Switch: Provided and mounted near the door and labeled "Break Glass to Release Magnetic Locks." Wings shall maintain their respective positions when power is released, but can be broken away into true book-fold position with 15-25 lbs (66-110 N) of force (adjustable).

* + - 1. Safety: Provide the following safety features as per ANSI A156.27:
         1. Entrapment Protection (' Fail-Safe' during power loss): Door wings shall be free to rotate manually in either direction when power is removed. Magnetic locks will disengage when power is removed.
         2. Alarm Contacts: Provided to activate remote signal (by others) when door has loss of power.
         3. Torque Limiting: Provided via a back pressure sensing circuit adjusted so that 20-30 lb. (67-133 N) back pressure will stop door's rotation.
         4. Cushioned Wall Safety Edges: Provided at throat entrances to stop door's rotation when depressed for more than 1/4 of a second.
         5. Bump-to-Idle (Safety Stop Before Idle): If back pressure circuit or safety edge is activated during normal operation, door will go into the IDLE MODE. Door wings shall be free to rotate manually in either direction. After a forward manual push, the door will then restart at reduced speed and gradually accelerate to normal speed.
         6. VistaScan: Sensor shall be mounted at top of door wing and detect a 28 inch (710 mm) minimum high person or equivalent in rotating path 10 inches (254 mm) minimum from the face of the wing, and shall cause door to slow to maximum allowed kinetic energy speed. Sensor provides a minimum active area for the width of wing less 15 inches from center shaft and 5 inches from outer edge of outer stile.
         7. ToeGuard: Cushioned contact switch sensor mounted at wing bottom rail and active in the rotating path of the wing. It is active within 2 inches (50 mm) from outer edge of the outer stile end and 6 inches (150 mm) from the center of the door and not higher than 4 inches (100 mm) from finished floor. Contact switch shall require no more than 10 lbf. (54N) pressure to activate. Upon receipt of signal, door shall stop rotating.

\*\* NOTE TO SPECIFIER \*\* Select the following optional magnetic Entryguard Sensor paragraph if required or delete if not required.

* + - * 1. Entryguard Sensor: An infrared device will be tied to door rotation and stop the door any time an object is detected when the display case is within 24 inches (612 mm) adjustable of the entrance throat post. This distance is adjustable within software and its function selectable to slow or stop depending on customer choice.
      1. Enclosure: Extruded aluminum and glass/glazing material constructed to maintain proper clearances and weather seal.

\*\* NOTE TO SPECIFIER \*\* Select one of the two following enclosure design paragraphs as required and insert the glazing prep size required. Delete the enclosure design not required. Standard glazing prep is 1/4 inch. Optional glazing prep is available for Segmented Design from 1/8 inch (3 mm) to 1-5/16 inches (33 mm) and Round Design from 1/8 inch (3 mm) to 9/16 inch (14 mm) flat glass/glazing/ bullet-resistant material.

* + - * 1. Segmented Design: 1-3/4 inches (44 mm) deep with standard glazing prep for \_\_ inch (\_\_ mm) flat glass/glazing material and offset to interior.
        2. Round Design: 1-3/4 inches (44 mm) deep with standard glazing prep for \_\_ inch (\_\_ mm) flat glass/glazing material and offset to interior.
        3. Canopy:

Round with curved aluminum 1/8 inch fascia panels minimum 12 inches (305 mm) high.

Interior ceiling 3/4 inch thick plywood laminated with .060 inch (1.5 mm) aluminum to match door finish.

\*\* NOTE TO SPECIFIER \*\* Select from the following canopy option paragraphs if required or delete if not required.

Extended canopy.

Segmented canopy on Segmented enclosure.

Cropped canopy.

Exterior roof fabricated from .090 inch (2 mm) anodized aluminum.

Two energy efficient ceiling lights with flush lens.

Backlit fluorescent signage on one or both sides of canopy.

* + - 1. Panel/Door Wing: Aluminum, 1-3/4 inches (44 mm) deep with medium stile construction. Perimeter weatherstripping utilizing affixed sweeps to ensure weatherseal. Provide an intermediate, horizontal muntin bar, 2-1/8 inches (57 mm) wide, on each wing for safety and division of glass.

\*\* NOTE TO SPECIFIER \*\* insert the glazing prep size required. Note that standard glazing prep in 1/4 inch (6 mm) and optional prep is available from 5/16 inch (16 mm) to 1-5/16 inches (33 mm).

* + - * 1. Glazing Prep: \_\_ inch (\_\_ mm) flat glass/glazing material with sloped stops on horizontal rails (except on clad units).

\*\* NOTE TO SPECIFIER \*\* Select from the following Panel/Door Wing optional paragraphs as required and delete those not required.

* + - * 1. Additional standard horizontal muntin bars.
        2. Horizontal muntin bars: 8 inches (203 mm), or 10 inches (254 mm) wide
        3. Optional bottom rails: 8 inches (203 mm), or 10 inches (254 mm) tall.
        4. Prep for glazing.

\*\* NOTE TO SPECIFIER \*\* Include the following paragraph for use with Grand Series 9600 Large Diameter Automatic Revolving Door with Center Core.

* + - 1. Core: Rotating central portion of door unit shall have top and bottom hydraulic closers for each wing to cushion emergency wing collapse. Core is extruded aluminum with glass/glazing material and perimeter weatherseal and shall include metal apron with two fixed display panels and one hinged access panel. Access panel has top and bottom cam locks. Weight limit for Display floor shall be 200 lbs. (90 kg.)
      2. Hardware:
         1. Locks: Provide with five pin cylinders and concealed bolts on two door wings.
         2. Bottom pivot/bearing: Surface mounted with no excavation below floor line required.
         3. Center Shaft: 1-1/2 inch (38 mm) diameter steel shaft with connections to operator and bottom pivot/bearing.
    1. Large Diameter Automatic Revolving Door Two Wing:
       1. Model: Grand Series 9620 Large Diameter Automatic Revolving Door with 3-in-1 design (revolving door, balanced door, sliding door). Unit includes perimeter-drive system, enclosure/drum with canopy, door wing assembly, and interior automatic bi-parting sliding door system with integrated balanced door.
       2. Operator: Adjustable perimeter-drive system mounted within the enclosure canopy. The drive system shall be supplied with two 0.25KW AC motors (revolver) and control panel and two 100W DC motors (slide doors).
          1. Motor drive enclosed to prevent EMI noise from affecting the microprocessor control.
          2. Motor drive wheels rotate on a fixed outer ring and rotate ceiling and wings uniformly. Doors with center shaft or a centrally driven AC motor gear/chain mechanism shall not be acceptable. At-rest position of the door wings are adjustable to suit the traffic and desired function.
       3. Master Control: Microprocessor Master Control Panel (MCP) microprocessor based programmable logic control (PLC) to provide precision motor-drive, constant sensor monitoring, and automatic set-up. All inputs have adjacent LCD to verify input signals. Master control supplied with a plug-in type operator interface programming device for functional adjustments and diagnostics. Remote monitoring is available for full-time operational status, instantaneous automatic alarms, and functional parameter adjustments.
       4. Automatic Activation:
          1. Two motion sensor shall be placed at revolving door entrance to detect someone approaching door. Actuation causes door to revolve at the rate of 3-5 RPM (adjustable) for one complete turn after actuating signal is removed. Door will then slow then stop at the ' at-rest' position.
          2. Two momentary contact switches with 1 inch (25 mm) diameter push button shall be placed at entrance to door. Switch mounting plate reads "Push Button To Slow Door". Pushing this button will cause door to revolve at 1-3 RPM for a selected amount of time. A digital voice annunciator will say "Door In Slow Speed, Do Not Push." Slow speed operation will be protected by a tracking governor only allowing more than 1 RPM over the adjusted speed. Note: Door can annunciate "Caution, door speed will increase" before resuming normal run speed (selectable).
          3. Emergency Stop: Provide an emergency stop switch located at each entry point. When activated, rotation of the door will immediately stop and shall not resume rotation until switch is manually reset to normal position.
       5. Egress Mechanisms: Door is equipped with automatic biparting sliding door and interior balanced pair for emergency egress purposes.
          1. Alarm Circuit: Connected to the building's alarm system. Activation of the fire alarm, smoke detector or remote emergency switch shall activate emergency battery and unit shall rotate wings to the emergency egress position. Wings shall maintain their respective positions.
          2. Automatic Slide Door: Center interior wing panels provided as a bi-parting automatic sliding doors system with an emergency egress balanced door configuration. When positioned at the emergency egress position, automatic sliding door function can be engaged. Activation is by overhead motion/presence sensors and system shall function consistent with ANSI 156.10 for Power Operated Pedestrian Doors, Sliding Doors section. Upon loss of power or alarm signal sliding doors will power open and remain open for egress.
       6. Safety: Safety features provided as per ANSI A156.27 and includes: Entrapment protection, alarm contacts, vertical safety edges, foot sensors
       7. Enclosure: Extruded aluminum and glass/glazing material constructed to maintain proper clearances and weather seal.
       8. Panel/Door Wing: Aluminum, 1-3/4 inches (44 mm) deep with narrow stile construction. Perimeter weather-stripping utilizing affixed sweeps shall ensure weather-seal.
       9. Rotating Center Section: Rotating 2-wing central portion of door unit constructed with aluminum extrusions with specified finish. Center panel consists of an integrated automatic bi-parting sliding door with an emergency egress balanced door configuration.
  1. MANUAL REVOLVING DOORS
     1. Manual Revolving Door with Speed Control:
        1. Model:

\*\* NOTE TO SPECIFIER \*\* Select the model required from the following paragraphs and delete the one not required.

* + - * 1. Three Wing, Model EasyFlow Series 9500 Manual Revolving Door with Speed Control.
        2. Four Wing, Model EasyFlow Series 9500 Manual Revolving Door with Speed Control.
        3. Speed Control: Precision machined steel casting overhead speed control with precision machined 100:1 ratio gear train, steel case, adjustable and replaceable brake blocks. Device is limited up to 12 RPM (ANSI standard 156.27) and provides a smooth and effective braking action with brake shoes operating in an oil bath.
      1. Collapsing Mechanism: Door is equipped with mechanical breakaway and completely bookfold in case of emergency as required by code. Wings can be broken away with 80-130 lbs (355-578 N) of force (adjustable).
      2. Enclosure: Extruded aluminum and glass/glazing material constructed to maintaining proper clearances and weather seal.
         1. Segmented Design: Shall be 1-3/4 inches (44 mm) deep with standard glazing prep for 1/4 inch (6 mm) flat glass/glazing material and offset to interior. Optional glazing prep. up to 1 inch (25 mm).
         2. Round Design: Shall be 1-3/4 inches (44 mm) deep with standard glazing prep for 7/16 inch (6 mm) curved glass/glazing material and offset to interior. Optional glazing prep. up to 9/16 inch (14 mm).
      3. Enclosure: Extruded aluminum and glass/glazing material constructed to maintain proper clearances and weather seal.

\*\* NOTE TO SPECIFIER \*\* Select one of the two following enclosure design paragraphs as required and insert the glazing prep size required. Delete the enclosure design not required. Standard glazing prep is 1/4 inch. Optional glazing prep is available for Segmented Design from 1/8 inch (3 mm) to 1-5/16 inches (33 mm) and Round Design from 1/8 inch (3 mm) to 9/16 inch (14 mm) flat glass/glazing/ bullet-resistant material.

* + - * 1. Segmented Design: 1-3/4 inches (44 mm) deep with standard glazing prep for \_\_ inch (\_\_ mm) flat glass/glazing material and offset to interior.
        2. Round Design: 1-3/4 inches (44 mm) deep with standard glazing prep for \_\_ inch (\_\_ mm) flat glass/glazing material and offset to interior.
        3. Canopy:

Round with curved aluminum 1/8 inch fascia panels minimum 12 inches (305 mm) high.

Interior ceiling 3/4 inch thick plywood laminated with .060 inch (1.5 mm) aluminum to match door finish.

\*\* NOTE TO SPECIFIER \*\* Select from the following canopy option paragraphs if required or delete if not required.

Extended canopy.

Segmented canopy on Segmented enclosure.

Cropped canopy.

Exterior roof fabricated from .090 inch (2 mm) anodized aluminum.

Two energy efficient ceiling lights with flush lens.

* + - 1. Panel/Door Wing: Aluminum, 1-3/4 inches (44 mm) deep with narrow stile construction for door diameters up to 8 feet 0 inch (2438 mm). Door diameters 8 feet 0 inch (2438 mm) and over to be medium stile construction. Perimeter weather-stripping utilizing affixed sweeps shall ensure weatherseal.

\*\* NOTE TO SPECIFIER \*\* insert the glazing prep size required. Note that standard glazing prep in 1/4 inch (6 mm) and optional prep is available up to 1 inch (25 mm).

* + - * 1. Glazing Prep: \_\_ inch (\_\_ mm) flat glass/glazing material with sloped stops on horizontal rails (except on clad units).
        2. Provide an intermediate surface applied horizontal flat aluminum pushbar, 3/8 inch (10 mm) thick by 1-1/2 (38 mm) wide, for each wing.

\*\* NOTE TO SPECIFIER \*\* Select from the following Panel/Door Wing optional paragraphs as required and delete those not required.

* + - * 1. Stainless Steel or brass flat pushbars.
        2. Round pushbars: 1 inch (25 mm) diameter, aluminum
        3. Round pushbars: 1 inch (25 mm) diameter, stainless steel
        4. Round pushbars: 1 inch (25 mm) diameter, brass
        5. Horizontal muntins (mid rails): 2-1/4 inches (57 mm) wide.
        6. Horizontal muntins (mid rails): 4 inches (102 mm) wide.
        7. Bottom rails: 6-1/2 inches (165 mm) (standard for medium stile).
        8. Bottom rails: 8 inches (203 mm).
        9. Bottom rails: 10 inches (254 mm).
        10. Medium stile rails (standard for diameters 8 feet and over) .
        11. Fixed wings. (must be approved by the authority having jurisdiction)
      1. Hardware:
         1. Locks: Provide with five pin cylinders and concealed bolts on two door wings.
         2. Bottom pivot/bearing: Surface mounted with no excavation below floor line required.
         3. Center Shaft: 1-1/2 inch (38 mm) diameter steel shaft with connections to operator and bottom pivot/bearing.
    1. All Glass Manual Revolving Door:
       1. Model: ClearFlow Series 9500C

\*\* NOTE TO SPECIFIER \*\* Select the model required from the following paragraphs and delete the one not required.

* + - * 1. Three Wing, Model ClearFlow Series 9500C.
        2. Four Wing, Model ClearFlow Series 9500C.
      1. Egress Mechanism: Door equipped with mechanical breakout in case of emergency or passing large objects. After break out, the wings must be manually re-set in their original position.
      2. Enclosure:
         1. Drum Enclosure Glazing: Curved safety glass in clear, 5/8 inch (16 mm) laminated.
         2. Ceiling Glazing: Flat safety glass in clear, 5/8 inch (16 mm) semi-laminated and semi-toughened.
         3. Extruded straight and bent aluminum and glass/glazing material constructed to maintaining proper clearances and weather seal.
         4. Curved Enclosure: Stainless Steel Cladding with an anti-fingerprint finish. Brass clad, bronze clad, copper clad, painting and anodized aluminum finishes shall be available.
         5. Perimeter weather-stripping utilizing affixed sweeps shall ensure weather-seal.
      3. Rotating Center Section:
         1. Rotating Wings shall be collapsible 3-wing or 4-wing configuration, and finish as selected.
         2. Stainless Steel Cladding with an anti-fingerprint finish. Brass clad, bronze clad, copper clad, painting and anodized aluminum finishes shall be available.
      4. Panel/Door Wing:
         1. Door Wing Glazing - Flat safety glass in clear, 1/2" (12 mm) tempered.
      5. Hardware:
         1. Locks: Manual floor bolt locks.
         2. Push Bars: Tubular, stainless steel push bars, one per door wing.
  1. SECURITY REVOLVING DOORS
     1. 1-Way Security Revolving Door System:
        1. Model: Control Flow Series 9100 Directional One-Way Security with collapsing three-wing design. Units include operator, enclosure/drum with canopy, door wings/panels, center shaft, bottom pivot and security mats.
        2. Operator: Adjustable power operator mounted within the enclosure canopy. Operator provided with 1/4 HP 500 RPM high torque motor, 90 VDC electric brake, gear box, and control panel. ETL approved and tested to UL 325 Standard. Non-listed units are not be acceptable.
           1. Double seal, corrosion-proof, cast iron gear case with case hardened (60Rc) helical gears in synthetic, low temperature oil bath lubrication.
           2. Motor drive enclosed to prevent EMI noise from affecting the microprocessor control.
           3. A 1-1/2 inch (38 mm) diameter solid steel center shaft serves as main linkage to connect the operator to revolving door wings. At-rest position of door wings is adjustable to suit the traffic and desired function.
           4. An RS-485 port is provided for communication with external display (by others) to monitor door status, violations and operation.
        3. Master Control: Microprocessor Master Control Panel (MCP) multiprocessor digital control system utilizing time-division multiplexed operations to provide precision motor-drive, constant sensor monitoring, and automated setup. Provide with RS-232 port for communication with external display (by others) to monitor door status, violations and operation. All inputs have an adjacent LED to verify input signals. Modular MCP is capable of exchanging individual control components without having to replace the entire system. Three sets of programmable Form C contacts are available for monitoring door functions or violations.
           1. Parameters: 99 adjustable functions provided including but not limited to:

Door speeds

Time delays

Reaction to, and force required for safety stops

Adjust card request storage,

Safety stops before idle

* + - * 1. Modes: Shall define how the door will be used. A key switch is provided for selecting operating modes. 14 operating modes provided including but not limited to:

Totally secure, Card reader access for entry and exit

Card reader entry and free exit

Motion sensor activation for entry and exit

Freewheel mode

* + - * 1. Diagnostics: Used to set-up and maintain unit via a wireless Local Remote Control (LCP) with seven segment diagnostic display from outside the door. Adjustments at the control or via a wired remote shall not be considered equal. Logic will perform a self-set up, not requiring technician intervention or changes to ensure a safe installation. 16 diagnostic modes provided including but not limited to:

Calculating unit speed in RPM's

Testing voice module

Global relearn sets safety sensitivity to optimum level

Checking motor voltage, current and optional brake voltage

* + - * 1. Voice Annunciator: 4 digital 100 percent solid state field programmable voice message provided. Tape recorded message are not be accepted.
        2. Single zone security mats is able to discern if the user is entering or leaving the secured zone of the door and communicate to MCP.
      1. Traffic Control Function - Selectable Day/Night Operation: Provide a barrier free exit to the non-secure area while maintaining a restricted entrance to secure area.
         1. One-Way Security: Traffic shall be allowed to pass unrestricted from one direction and controlled from opposing direction. A keyswitch shall be used by security personnel to gain access to secure areas. Actuation of switch shall also be capable of providing manual operation in either direction. Another key switch activation shall return systems to normal operation. Free access side is supplied with motion sensor to set door in motion. An actuation signal shall cause door to revolve at 2 to 4 RPM's depending on door size (adjustable) for a complete turn after actuating signal is removed, door will slow and stop at the at-rest position. Any attempt of entry from controlled access side during this operation shall be detected. Passage will be only be allowed from controlled access side by key switch.
         2. Day Operation/Non-Security Mode: A double pole, double throw switch signal by others (dry contact) shall cause control to operate as a two-way free access in both directions. Actuation shall be from motion sensors (optional), activated by logic software. Any mat signal shall cause door to turn to avoid entrapment.
      2. Security Function: Area detection mat is placed inside door where traffic passage is to be controlled. Electric brake shall be a fail-safe design with battery backup to provide full operation for 2 hours in the event of power failure. Brake shall have enclosed construction with sealed ball-bearings and no backlash. Control shall have integral anti-entrapment logic built in to eliminate any possible entrapment.
         1. Any attempt of passage into unauthorized area shall cause door to ramp to a stop, lock and a solid state voice annunciator will say "Security Violation, Please Exit". Tape recorded systems will not be acceptable.
         2. Door will then rotate to a position allowing secure area to be cleared and proceed forward in slow speed for 1/3 revolution and then resume normal speed.
      3. Slow Speed: A momentary contact switch with 1 inch (25 mm) diameter pushbutton shall be placed at the entrance to the door. Switch mounting plate read, "PUSH TO SLOW." Activation of switch shall place the operator into a reduced speed, 2-3 RPM, for an adjustable time. A second voice annunciator will say, "DOOR IN SLOW SPEED, DO NOT PUSH" when in reduced speed mode.
      4. Safety: Provide the following safety features as per ANSI A156.27:
         1. Entrapment Protection - Collapsing Mechanism: Door design equipped with Magnetic Breakaway and completely collapse in case of emergency as required by Codes.

Electromagnets capable of holding with more than 1000 lbs. (4400 N) min. force to maintain system integrity and hold door wings in their respective positions under normal conditions.

Provide with a circuit to be connected to the building's alarm system. Activation of the fire alarm, smoke detector or remote emergency button shall remove power to the door's electromagnetic locks and allow the wings to fully collapse into the bookfold position.

Provide with an emergency switch mounted near the door and labeled "Break Glass to Release Magnetic Locks." When power is released, door operation will stop and wings shall maintain their respective positions but can be broken away into true book-fold position with 80-130 lbs (355-578 N) of force (adjustable).

* + - * 1. Alarm Contacts: Provide to activate remote signal (by others) when door has loss of power.
        2. Torque Limiting: Provide via a back pressure sensing circuit adjusted so that 20-30 lb. (67-133 N) back pressure will stop door's rotation.
        3. Cushioned Wall Safety Edges: Provide at throat entrances to stop door's rotation when depressed for more than 1/4 of a second.
        4. Bump-to-Idle (Safety Stop Before Idle): If back pressure circuit or safety edge is activated during normal authorized operation, door will stop and remain disengaged in an unlocked and idle position. A voice annunciator will be activated to say "Please Push Door Forward." Door wings shall be free to rotate manually in either direction toward a normal at rest and locked ' +'position. Door will then reset for normal operation on next authorized passage.
        5. VistaScan: Sensor mounted at top of door wing and detect a 28 inch (710 mm) minimum high person or equivalent in rotating path 10 inches (254 mm) minimum from the face of the wing, and shall cause door to slow to maximum allowed kinetic energy speed. Sensor shall provide a minimum active area for the width of wing less 15 inches from center shaft and 5 inches from outer edge of outer stile.
        6. ToeGuard: Cushioned contact switch sensor shall be mounted at wing bottom rail and be active in the rotating path of the wing. It shall be active within 2 inches (50 mm) from outer edge of the outer stile end and 6 inches (150 mm) from the center of the door and not higher than 4 inches (100 mm) from finished floor. Contact switch shall require no more than 10 lbf. (54N) pressure to activate. Upon receipt of signal, door shall stop rotating.
        7. EntryGuard Sensor: An infrared device will be tied to door rotation and stop the door any time an object is detected when the display case is within 24 inches (612 mm) adjustable of the entrance throat post. Distance is adjustable within software and is function selectable to slow or stop depending on customer choice.
      1. Enclosure: Extruded aluminum and glass/glazing material constructed to maintain proper clearances and weather seal.

\*\* NOTE TO SPECIFIER \*\* Select one of the two following enclosure design paragraphs as required and insert the glazing prep size required. Delete the enclosure design not required. Standard glazing prep for Segmented Design is 1/4 inch and optional from 5/16 inch (8 mm) to 1/2 inches (13 mm). Standard glazing prep for Round Design is 7/16 inch (6 mm) curved glass/glazing material.

* + - * 1. Segmented Design: 1-3/4 inches (44 mm) deep with standard glazing prep for \_\_ inch (\_\_ mm) flat glass/glazing material and offset to interior.
        2. Round Design: 1-3/4 inches (44 mm) deep with standard glazing prep for \_\_ inch (\_\_ mm) curved glass/glazing material and offset to interior.
        3. Canopy:

Round with curved aluminum 1/8 inch fascia panels minimum 12 inches (305 mm) high.

Interior ceiling 3/4 inch thick plywood laminated with .060 inch (1.5 mm) aluminum to match door finish.

\*\* NOTE TO SPECIFIER \*\* Select from the following canopy option paragraphs if required or delete if not required.

Extended canopy.

Segmented canopy on Segmented enclosure.

Cropped canopy.

Exterior roof fabricated from .090 inch (2 mm) anodized aluminum.

Two energy efficient ceiling lights with flush lens.

Backlit fluorescent signage on one or both sides of canopy.

* + - 1. Panel/Door Wing: Aluminum, 1-3/4 inches (44 mm) deep with medium stile construction. Perimeter weatherstripping utilizing affixed sweeps to ensure weatherseal. Provide an intermediate, horizontal muntin bar, 2-1/4 inches (57 mm) wide, on each wing for safety and division of glass.

\*\* NOTE TO SPECIFIER \*\* insert the glazing prep size required. Note that standard glazing prep in 1/4 inch (6 mm) and optional prep is available 5/16 inch (8 mm) to 1/2 inch (13 mm).

* + - * 1. Glazing Prep: \_\_ inch (\_\_ mm) flat glass/glazing material with sloped stops on horizontal rails (except on clad units).

\*\* NOTE TO SPECIFIER \*\* Select from the following Panel/Door Wing optional paragraphs as required and delete those not required.

* + - * 1. Additional standard horizontal muntin bars.
        2. Horizontal muntin bars: 8 inches (203 mm), or 10 inches (254 mm) wide
        3. Optional bottom rails: 8 inches (203 mm), or 10 inches (254 mm) tall.
      1. Hardware:
         1. Locks: Provide with five pin cylinders and concealed bolts on two door wings.
         2. Bottom pivot/bearing: Surface mounted with no excavation below floor line required.
         3. Center Shaft: 1-1/2 inch (38 mm) diameter steel shaft with connections to operator and bottom pivot/bearing.
    1. 1-Way Security Revolving Door System with Object Detection:
       1. Model: Control Flow Series 9100AP Directional One-Way Security with collapsing three-wing design with object detection. Units include operator, enclosure/drum with canopy, door wings/panels, center shaft, bottom pivot and security mats.
       2. Operator: Adjustable power operator mounted within the enclosure canopy. Operator provided with 1/4 HP 500 RPM high torque motor, 90 VDC electric brake, gear box, and control panel. ETL approved and tested to UL 325 Standard. Non-listed units are not be acceptable.
          1. Double seal, corrosion-proof, cast iron gear case with case hardened (60Rc) helical gears in synthetic, low temperature oil bath lubrication.
          2. Motor drive enclosed to prevent EMI noise from affecting the microprocessor control.
          3. A 1-1/2 inch (38 mm) diameter solid steel center shaft serves as main linkage to connect the operator to revolving door wings. At-rest position of door wings is adjustable to suit the traffic and desired function.
          4. An RS-485 port is provided for communication with external display (by others) to monitor door status, violations and operation.
          5. Electric brake with fail-safe design and battery backup to provide full operation for 2 hours in the event of power failure. Brake shall have enclosed construction with sealed ball-bearings and no backlash. Control shall have integral anti-entrapment logic built in to eliminate possible entrapment.
       3. Master Control: Microprocessor Master Control Panel (MCP) multiprocessor digital control system utilizing time-division multiplexed operations to provide precision motor-drive, constant sensor monitoring, and automated setup. Provide with RS-232 port for communication with external display (by others) to monitor door status, violations and operation. All inputs have an adjacent LED to verify input signals. Modular MCP is capable of exchanging individual control components without having to replace the entire system. Three sets of programmable Form C contacts are available for monitoring door functions or violations.
          1. Parameters: 99 adjustable functions provided including but not limited to:

Door speeds

Time delays

Reaction to, and force required for safety stops

Adjust card request storage,

Safety stops before idle

* + - * 1. Modes: Shall define how the door will be used. Key switch shall be provided for selecting operating modes or a single security pass function. Operating modes shall be:

Totally secure, No public entry from non-sterile side, motion sensor activation for exit

Freewheel mode

* + - * 1. Diagnostics: Used to set-up and maintain unit via a wireless Local Remote Control (LCP) with seven segment diagnostic display from outside the door. Adjustments at the control or via a wired remote shall not be considered equal. Logic will perform a self-set up, not requiring technician intervention or changes to ensure a safe installation. 16 diagnostic modes provided including but not limited to:

Calculating unit speed in RPM's

Testing voice module

Global relearn sets safety sensitivity to optimum level

Checking motor voltage, current and optional brake voltage

* + - * 1. Voice Annunciator: 4 digital 100 percent solid state field programmable voice message provided. Tape recorded message are not be accepted.
        2. Single zone security mats is able to discern if the user is entering or leaving the secured zone of the door and communicate to MCP.
      1. Traffic Control Function:
         1. One-Way Security: Traffic shall be allowed to pass unrestricted from one direction and controlled from opposing direction. A keyswitch shall be used by security personnel to gain access to secure areas. Actuation of switch shall also be capable of providing manual operation in either direction. Another key switch activation shall return systems to normal operation. Free access side is supplied with motion sensor to set door in motion. An actuation signal shall cause door to revolve at 2 to 4 RPM's depending on door size (adjustable) for a complete turn after actuating signal is removed, door will slow and stop at the at-rest position. Any attempt of entry from controlled access side during this operation shall be detected. Passage will be only be allowed from controlled access side by key switch.
      2. Security Function - Object Detection System: Includes horizontal light curtain, photo cells and security mats. Horizontal light curtain has floor mounted transmitter and ceiling mounted receiver. Light curtain located from vertical post to center pivot of door at non-secure side. Photo cell array will be ceiling mounted at right side of unit from non-secure side. Surface applied security mats will be on right side of unit from non-sterile side covering 120 degrees. System prevents objects from being passed from the non-secure side to secure side of passage. Object size dimensions no smaller than 12 inches by 12 inches by 12 inches. System operation will be as follows:
         1. Light Curtain will detect object or person and cause door to ramp to stop, lock and a solid state voice annunciator will say "Security Violation, Please Exit".
         2. Person standing on mat will cause door to reverse. Door will resume normal operation when mat is cleared.
         3. Objects left behind will be detected by the photo array and will lock door in position so that 120 degree area is secured. Drum clear and Alarm clear will be required to reset door for normal operation.
         4. Keyswitch provide the following functions.

Drum Clear

Alarm Clear

Security Pass - Single pass through non-secure to secure side.

Idle - Manual operation

* + - 1. Slow Speed: A momentary contact switch with 1 inch (25 mm) diameter pushbutton shall be placed at the entrance to the door. Switch mounting plate read, "PUSH TO SLOW." Activation of switch shall place the operator into a reduced speed, 2-3 RPM, for an adjustable time. A second voice annunciator will say, "DOOR IN SLOW SPEED, DO NOT PUSH" when in reduced speed mode.
      2. Safety: Provide the following safety features as per ANSI A156.27:
         1. Entrapment Protection - Collapsing Mechanism: Door design equipped with Magnetic Breakaway and completely collapse in case of emergency as required by Codes.

Electromagnets capable of holding with more than 1000 lbs. (4400 N) min. force to maintain system integrity and hold door wings in their respective positions under normal conditions.

Provide with a circuit to be connected to the building's alarm system. Activation of the fire alarm, smoke detector or remote emergency button shall remove power to the door's electromagnetic locks and allow the wings to fully collapse into the bookfold position.

Provide with an emergency switch mounted near the door and labeled "Break Glass to Release Magnetic Locks." When power is released, door operation will stop and wings shall maintain their respective positions but can be broken away into true book-fold position with 80-130 lbs (355-578 N) of force (adjustable).

* + - * 1. Alarm Contacts: Provide to activate remote signal (by others) when door has loss of power.
        2. Torque Limiting: Provide via a back pressure sensing circuit adjusted so that 20-30 lb. (67-133 N) back pressure will stop door's rotation.
        3. Cushioned Wall Safety Edges: Provide at throat entrances to stop door's rotation when depressed for more than 1/4 of a second.
        4. Bump-to-Idle (Safety Stop Before Idle): If back pressure circuit or safety edge is activated during normal authorized operation, door will stop and remain disengaged in an unlocked and idle position. A voice annunciator will be activated to say "Please Push Door Forward." Door wings shall be free to rotate manually in either direction toward a normal at rest and locked ' +'position. Door will then reset for normal operation on next authorized passage.
        5. VistaScan: Sensor mounted at top of door wing and detect a 28 inch (710 mm) minimum high person or equivalent in rotating path 10 inches (254 mm) minimum from the face of the wing, and shall cause door to slow to maximum allowed kinetic energy speed. Sensor shall provide a minimum active area for the width of wing less 15 inches from center shaft and 5 inches from outer edge of outer stile.
        6. ToeGuard: Cushioned contact switch sensor shall be mounted at wing bottom rail and be active in the rotating path of the wing. It shall be active within 2 inches (50 mm) from outer edge of the outer stile end and 6 inches (150 mm) from the center of the door and not higher than 4 inches (100 mm) from finished floor. Contact switch shall require no more than 10 lbf. (54N) pressure to activate. Upon receipt of signal, door shall stop rotating.
        7. EntryGuard Sensor: An infrared device will be tied to door rotation and stop the door any time an object is detected when the display case is within 24 inches (612 mm) adjustable of the entrance throat post. Distance is adjustable within software and is function selectable to slow or stop depending on customer choice.
      1. Enclosure: Extruded aluminum and glass/glazing material constructed to maintain proper clearances and weather seal.

\*\* NOTE TO SPECIFIER \*\* Select one of the two following enclosure design paragraphs as required and insert the glazing prep size required. Delete the enclosure design not required. Standard glazing prep for Segmented Design is 1/4 inch and optional from 5/16 inch (8 mm) to 1/2 inches (13 mm). Standard glazing prep for Round Design is 7/16 inch (6 mm) curved glass/glazing material.

* + - * 1. Segmented Design: 1-3/4 inches (44 mm) deep with standard glazing prep for \_\_ inch (\_\_ mm) flat glass/glazing material and offset to interior.
        2. Round Design: 1-3/4 inches (44 mm) deep with standard glazing prep for \_\_ inch (\_\_ mm) curved glass/glazing material and offset to interior.
        3. Canopy:

Round with curved aluminum 1/8 inch fascia panels minimum 12 inches (305 mm) high.

Interior ceiling 3/4 inch thick plywood laminated with .060 inch (1.5 mm) aluminum to match door finish.

\*\* NOTE TO SPECIFIER \*\* Select from the following canopy option paragraphs if required or delete if not required.

Extended canopy.

Segmented canopy on Segmented enclosure.

Cropped canopy.

Exterior roof fabricated from .090 inch (2 mm) anodized aluminum.

Two energy efficient ceiling lights with flush lens.

Backlit fluorescent signage on one or both sides of canopy.

* + - 1. Panel/Door Wing: Aluminum, 1-3/4 inches (44 mm) deep with medium stile construction. Perimeter weatherstripping utilizing affixed sweeps to ensure weatherseal. Provide an intermediate, horizontal muntin bar, 2-1/4 inches (57 mm) wide, on each wing for safety and division of glass.

\*\* NOTE TO SPECIFIER \*\* insert the glazing prep size required. Note that standard glazing prep in 1/4 inch (6 mm) and optional prep is available 5/16 inch (8 mm) to 1/2 inch (13 mm).

* + - * 1. Glazing Prep: \_\_ inch (\_\_ mm) flat glass/glazing material with sloped stops on horizontal rails (except on clad units).

\*\* NOTE TO SPECIFIER \*\* Select from the following Panel/Door Wing optional paragraphs as required and delete those not required.

* + - * 1. Additional standard horizontal muntin bars.
        2. Horizontal muntin bars: 8 inches (203 mm), or 10 inches (254 mm) wide
        3. Optional bottom rails: 8 inches (203 mm), or 10 inches (254 mm) tall.
      1. Hardware:
         1. Locks: Provide with five pin cylinders and concealed bolts on two door wings.
         2. Bottom pivot/bearing: Surface mounted with no excavation below floor line required.
         3. Center Shaft: 1-1/2 inch (38 mm) diameter steel shaft with connections to operator and bottom pivot/bearing.
    1. 2-Way Security Revolving Door System:
       1. Model: ControlFlow 2-Way Card Access Security Series 9200 with Matless Anti-Tailgate Revolving Door System. Units include operator, enclosure/drum with canopy, door wings/panels, center shaft, bottom pivot and security mats.
       2. Operator: Adjustable power operator mounted within the enclosure canopy. Operator provided with 1/4 HP 500 RPM high torque motor, 90 VDC electric brake, gear box, and control panel. ETL approved and tested to UL 325 Standard. Non-listed units are not be acceptable.
          1. Double seal, corrosion-proof, cast iron gear case with case hardened (60Rc) helical gears in synthetic, low temperature oil bath lubrication.
          2. A 1-1/2 inch (38 mm) diameter solid steel center shaft serves as main linkage to connect the operator to revolving door wings. At-rest position of door wings is adjustable to suit the traffic and desired function.
          3. An RS-485 port is provided for communication with external display (by others) to monitor door status, violations and operation.
       3. Master Control: Microprocessor Master Control Panel (MCP) multiprocessor digital control system utilizing time-division multiplexed operations to provide precision motor-drive, constant sensor monitoring, and automated setup. All inputs have an adjacent LED to verify input signals. Three sets of programmable Form C contacts are available for monitoring door functions or violations.
          1. Parameters: 99 adjustable functions provided including but not limited to:

Door speeds

Time delays

Reaction to, and force required for safety stops

Adjust card request storage,

Safety stops before idle

* + - * 1. Modes: Shall define how the door will be used. A key switch is provided for selecting operating modes. 14 operating modes provided including but not limited to:

Totally secure, Card reader access for entry and exit

Card reader entry and free exit

Motion sensor activation for entry and exit

Freewheel mode

* + - * 1. Diagnostics: Used to set-up and maintain unit via a wireless Local Remote Control (LCP) with seven segment diagnostic display from outside the door. Adjustments at the control or via a wired remote shall not be considered equal. Logic will perform a self-set up, not requiring technician intervention or changes to ensure a safe installation. 16 diagnostic modes provided including but not limited to:

Calculating unit speed in RPM's

Testing voice module

Global relearn sets safety sensitivity to optimum level

Checking motor voltage, current and optional brake voltage

* + - * 1. Voice Annunciator: 4 digital 100 percent solid state field programmable voice message provided. Tape recorded message are not be accepted.
        2. Dual zone security mats to discern whether the user is entering or leaving the secured zone of the door and communicate to microprocessor control.
      1. Traffic Control Function - Selectable Day/Night Operation:
         1. Two-Way Security: Traffic controlled from both directions. (Note: ' +' positioning preferred for best security). Access Control System (ACS) device specified in Section 28 13 53 - Security Access Detection (by others) shall be placed at entrance to each side to obtain authorization for passage through door. Note: signals from the ACS shall be normally open contacts that close for a duration of 1/4 sec to 1 sec. This action shall cause electric brake to unlock and set operator in motion (' x' position) or look for zone activation (' +' position). Actuation shall cause door to revolve at rate of 3 to 4 RPM's (adjustable-regulated by ANSI 156.27) for 1/2 turn (' x' position) or 1/4 turn (' +' position), then stop at the next ' at-rest' position. Electric brake shall then lock door. Any attempt of entry from unauthorized side during this operation shall be detected. Passage will be allowed from either side only by a signal from the ACS or key switch provided. One-way security requires a motion sensor or push button.
         2. Day Operation/Non-Security Mode: Upon signal (dry contact) from security personnel or ACS, control shall operate as a two-way free access door in both directions (selectable). Actuation shall be from motion sensors (optional), activated by logic software. Any zone signal shall cause door to turn to avoid entrapment. LED shall glow green denoting day operation. Upon release of dry contact, door shall automatically return to previous mode (selectable).
         3. Authorization: ACS specified in Section 28 13 53 - Security Access Detection (by others) shall be mounted adjacent to entrance on both sides of revolving door. Mounting can be done on manufacturer's standard mounting bracket as supplied for the type of ACS furnished. Door status bracket shall include visual signal light and audio tone device. Upon valid presentation, the door's CPU will accept signal, red LED will turn off, green LED will illuminate and an audible tone (adjustable) will sound. To prevent entrapment the door's CPU will not accept user's presentation if user is standing in activation zone at the time presentation is made (selectable). However, audible tone will sound to indicate a valid presentation but indicator light shall remain red.
         4. Activation and Passage: After door's CPU accepts valid presentation and indicator light turns green, user will enter enclosure. Door will activate as per ' x' or ' +' position and then rotate at a speed of 3-4 RPM counter clockwise to allow single passage only and then relock to prevent tailgating in same direction of travel. If tailgating individual has also made valid presentation, door will continue revolving to allow nonstop passage. Door is capable of continuous nonstop revolutions as long as valid presentations are made. Door capable of up to 960 simultaneous entries and exits per hour. User shall be given three attempts or seven seconds to complete passage. If passage is completed on first or second attempt, another valid presentation will be required for the next user.
         5. Anti-Tailgating/Opposite Direction Of Travel: Attempted unauthorized passage will result in door being locked by electric brake when unauthorized presence is detected. A solid state voice annunciator will inform intruder "Security Violation. Door Will Reverse." Door will then rotate backward to a position allowing secure area to be cleared. When secure area is cleared by intruder, door will resume normal rotation, allowing authorized entry to be completed.
         6. Violation: Attempted unauthorized passage will result in door being locked by electric brake when unauthorized presence is detected. A solid state voice annunciator will inform intruder "Security Violation . . . Door Will Reverse." Door will then rotate backward to a position allowing secure area to be cleared. Voice annunciator will state "Please Exit Door" then "Re-enter" to inform authorized person to clear and then reactivate zone to resume to normal rotation, allowing entry to be completed.
      2. Safety: Provide the following safety features as per ANSI A156.27:
         1. Entrapment Protection - Collapsing Mechanism: Door design equipped with Magnetic Breakaway and completely collapse in case of emergency as required by Codes.

Electromagnets capable of holding with more than 1000 lbs. (4400 N) min. force to maintain system integrity and hold door wings in their respective positions under normal conditions.

Provide with a circuit to be connected to the building's alarm system. Activation of the fire alarm, smoke detector or remote emergency button shall remove power to the door's electromagnetic locks and allow the wings to fully collapse into the bookfold position.

Provide with an emergency switch mounted near the door and labeled "Break Glass to Release Magnetic Locks." When power is released, door operation will stop and wings shall maintain their respective positions but can be broken away into true book-fold position with 80-130 lbs (355-578 N) of force (adjustable).

* + - * 1. Alarm Contacts: Provide to activate remote signal (by others) when door has loss of power.
        2. Torque Limiting: Provide via a back pressure sensing circuit adjusted so that 20-30 lb. (67-133 N) back pressure will stop door's rotation.
        3. Cushioned Wall Safety Edges: Provide at throat entrances to stop door's rotation when depressed for more than 1/4 of a second.
        4. Bump-to-Idle (Safety Stop Before Idle): If back pressure circuit or safety edge is activated during normal authorized operation, door will stop and remain disengaged in an unlocked and idle position. A voice annunciator will be activated to say "Please Push Door Forward." Door wings shall be free to rotate manually in either direction toward a normal at rest and locked ' +'position. Door will then reset for normal operation on next authorized passage.
      1. Enclosure: Extruded aluminum and glass/glazing material constructed to maintain proper clearances and weather seal.

\*\* NOTE TO SPECIFIER \*\* Select one of the two following enclosure design paragraphs as required and insert the glazing prep size required. Delete the enclosure design not required. Standard glazing prep for Segmented Design is 1/4 inch and optional from 5/16 inch (8 mm) to 1/2 inches (13 mm). Standard glazing prep for Round Design is 7/16 inch (6 mm) curved glass/glazing material.

* + - * 1. Segmented Design: 1-3/4 inches (44 mm) deep with standard glazing prep for \_\_ inch (\_\_ mm) flat glass/glazing material and offset to interior.
        2. Round Design: 1-3/4 inches (44 mm) deep with standard glazing prep for \_\_ inch (\_\_ mm) curved glass/glazing material and offset to interior.
        3. Canopy:

Round with curved aluminum 1/8 inch fascia panels minimum 12 inches (305 mm) high.

Interior ceiling 3/4 inch thick plywood laminated with .060 inch (1.5 mm) aluminum to match door finish.

\*\* NOTE TO SPECIFIER \*\* Select from the following canopy option paragraphs if required or delete if not required.

Extended canopy.

Segmented canopy on Segmented enclosure.

Cropped canopy.

Exterior roof fabricated from .090 inch (2 mm) anodized aluminum.

Two energy efficient ceiling lights with flush lens.

Backlit fluorescent signage on one or both sides of canopy.

* + - 1. Panel/Door Wing: Aluminum, 1-3/4 inches (44 mm) deep with narrow stile construction. Perimeter weatherstripping utilizing affixed sweeps to ensure weatherseal. Provide an intermediate, horizontal muntin bar, 2-1/4 inches (57 mm) wide, on each wing for safety and division of glass.

\*\* NOTE TO SPECIFIER \*\* insert the glazing prep size required. Note that standard glazing prep in 1/4 inch (6 mm) and optional prep is available 5/16 inch (8 mm) to 1-15/16 inch (33 mm).

* + - * 1. Glazing Prep: \_\_ inch (\_\_ mm) flat glass/glazing material with sloped stops on horizontal rails (except on clad units).

\*\* NOTE TO SPECIFIER \*\* Select from the following Panel/Door Wing optional paragraphs as required and delete those not required.

* + - * 1. Medium stile rails.
        2. Additional standard horizontal muntin bars.
        3. Horizontal muntin bars: 8 inches (203 mm), or 10 inches (254 mm) wide
        4. Optional bottom rails: 8 inches (203 mm), or 10 inches (254 mm) tall.
      1. Hardware:
         1. Locks: Provide with five pin cylinders and concealed bolts on two door wings.
         2. Bottom pivot/bearing: Surface mounted with no excavation below floor line required.
         3. Center Shaft: 1-1/2 inch (38 mm) diameter steel shaft with connections to operator and bottom pivot/bearing.
    1. 2-Way Card Access Security with Security Mat Anti-Tailgate Revolving Door System:
       1. Model: ControlFlow 2-Way Card Access Security Series 9200 with Security Mat Anti-Tailgate Revolving Door System. Units include operator, enclosure/drum with canopy, door wings/panels, center shaft, bottom pivot and security mats.
       2. Operator: Adjustable power operator mounted within the enclosure canopy. Operator provided with 1/4 HP 500 RPM high torque motor, 90 VDC electric brake, gear box, and control panel. ETL approved and tested to UL 325 Standard. Non-listed units are not be acceptable.
          1. Double seal, corrosion-proof, cast iron gear case with case hardened (60Rc) helical gears in synthetic, low temperature oil bath lubrication.
          2. A 1-1/2 inch (38 mm) diameter solid steel center shaft serves as main linkage to connect the operator to revolving door wings. At-rest position of door wings is adjustable to suit the traffic and desired function.
          3. An RS-485 port is provided for communication with external display (by others) to monitor door status, violations and operation.
       3. Master Control: Microprocessor Master Control Panel (MCP) multiprocessor digital control system utilizing time-division multiplexed operations to provide precision motor-drive, constant sensor monitoring, and automated setup. All inputs have an adjacent LED to verify input signals. Three sets of programmable Form C contacts are available for monitoring door functions or violations.
          1. Parameters: 99 adjustable functions provided including but not limited to:

Door speeds

Time delays

Reaction to, and force required for safety stops

Adjust card request storage,

Safety stops before idle

* + - * 1. Modes: Define how the door will be used. A key switch is provided for selecting operating modes. 14 operating modes provided including but not limited to:

Totally secure, Card reader access for entry and exit

Card reader entry and free exit

Motion sensor activation for entry and exit

Freewheel mode

* + - * 1. Diagnostics: Used to set-up and maintain unit via a wireless Local Remote Control (LCP) with seven segment diagnostic display from outside the door. Adjustments at the control or via a wired remote shall not be considered equal. Logic will perform a self-set up, not requiring technician intervention or changes to ensure a safe installation. 16 diagnostic modes provided including but not limited to:

Calculating unit speed in RPM's

Testing voice module

Global relearn sets safety sensitivity to optimum level

Checking motor voltage, current and optional brake voltage

* + - * 1. Voice Annunciator: 4 digital 100 percent solid state field programmable voice message provided. Tape recorded message are not be accepted.
        2. Dual zone security mats to discern whether the user is entering or leaving the secured zone of the door and communicate to microprocessor control.
      1. Traffic Control Function - Selectable Day/Night Operation:
         1. Two-Way Security: Traffic controlled from both directions. (Note: ' +' positioning preferred for best security). Access Control System (ACS) device specified in Section 28 13 53 - Security Access Detection (by others) shall be placed at entrance to each side to obtain authorization for passage through door. Note: signals from the ACS shall be normally open contacts that close for a duration of 1/4 sec to 1 sec. This action shall cause electric brake to unlock and set operator in motion (' x' position) or look for zone activation (' +' position). Actuation shall cause door to revolve at rate of 3 to 4 RPM's (adjustable-regulated by ANSI 156.27) for 1/2 turn (' x' position) or 1/4 turn (' +' position), then stop at the next ' at-rest' position. Electric brake shall then lock door. Any attempt of entry from unauthorized side during this operation shall be detected. Passage will be allowed from either side only by a signal from the ACS or key switch provided. One-way security requires a motion sensor or push button.
         2. Day Operation/Non-Security Mode: Upon signal (dry contact) from security personnel or ACS, control shall operate as a two-way free access door in both directions (selectable). Actuation shall be from motion sensors (optional), activated by logic software. Any zone signal shall cause door to turn to avoid entrapment. LED shall glow green denoting day operation. Upon release of dry contact, door shall automatically return to previous mode (selectable).
         3. Authorization: ACS specified in Section 28 13 53 - Security Access Detection (by others) shall be mounted adjacent to entrance on both sides of revolving door. Mounting can be done on manufacturer's standard mounting bracket as supplied for the type of ACS furnished. Door status bracket shall include visual signal light and audio tone device. Upon valid presentation, the door's CPU will accept signal, red LED will turn off, green LED will illuminate and an audible tone (adjustable) will sound. To prevent entrapment the door's CPU will not accept user's presentation if user is standing in activation zone at the time presentation is made (selectable). However, audible tone will sound to indicate a valid presentation but indicator light shall remain red.
         4. Activation and Passage: After door's CPU accepts valid presentation and indicator light turns green, user will enter enclosure. Door will activate as per ' x' or ' +' position and then rotate at a speed of 3-4 RPM counter clockwise to allow single passage only and then relock to prevent tailgating in same direction of travel. If tailgating individual has also made valid presentation, door will continue revolving to allow nonstop passage. Door is capable of continuous nonstop revolutions as long as valid presentations are made. Door capable of up to 960 simultaneous entries and exits per hour. User shall be given three attempts or seven seconds to complete passage. If passage is completed on first or second attempt, another valid presentation will be required for the next user.
         5. Anti-Tailgating/Opposite Direction Of Travel: Attempted unauthorized passage will result in door being locked by electric brake when unauthorized presence is detected. A solid state voice annunciator will inform intruder "Security Violation. Door Will Reverse." Door will then rotate backward to a position allowing secure area to be cleared. When secure area is cleared by intruder, door will resume normal rotation, allowing authorized entry to be completed.
         6. Violation: Attempted unauthorized passage will result in door being locked by electric brake when unauthorized presence is detected. A solid state voice annunciator will inform intruder "Security Violation . . . Door Will Reverse." Door will then rotate backward to a position allowing secure area to be cleared. Voice annunciator will state "Please Exit Door" then "Re-enter" to inform authorized person to clear and then reactivate zone to resume to normal rotation, allowing entry to be completed.
      2. Safety: Provide the following safety features as per ANSI A156.27:
         1. Entrapment Protection - Collapsing Mechanism: Door design equipped with Magnetic Breakaway and completely collapse in case of emergency as required by Codes.

Electromagnets capable of holding with more than 1000 lbs. (4400 N) min. force to maintain system integrity and hold door wings in their respective positions under normal conditions.

Provide with a circuit to be connected to the building's alarm system. Activation of the fire alarm, smoke detector or remote emergency button shall remove power to the door's electromagnetic locks and allow the wings to fully collapse into the bookfold position.

Provide with an emergency switch mounted near the door and labeled "Break Glass to Release Magnetic Locks." When power is released, door operation will stop and wings shall maintain their respective positions but can be broken away into true book-fold position with 80-130 lbs (355-578 N) of force (adjustable).

* + - * 1. Alarm Contacts: Provide to activate remote signal (by others) when door has loss of power.
        2. Torque Limiting: Provide via a back pressure sensing circuit adjusted so that 20-30 lb. (67-133 N) back pressure will stop door's rotation.
        3. Cushioned Wall Safety Edges: Provide at throat entrances to stop door's rotation when depressed for more than 1/4 of a second.
        4. Bump-to-Idle (Safety Stop Before Idle): If back pressure circuit or safety edge is activated during normal authorized operation, door will stop and remain disengaged in an unlocked and idle position. A voice annunciator will be activated to say "Please Push Door Forward." Door wings shall be free to rotate manually in either direction toward a normal at rest and locked ' +'position. Door will then reset for normal operation on next authorized passage.
      1. Enclosure: Extruded aluminum and glass/glazing material constructed to maintain proper clearances and weather seal.

\*\* NOTE TO SPECIFIER \*\* Select one of the two following enclosure design paragraphs as required and insert the glazing prep size required. Delete the enclosure design not required. Standard glazing prep for Segmented Design is 1/4 inch and optional from 5/16 inch (8 mm) to 1/2 inches (13 mm). Standard glazing prep for Round Design is 7/16 inch (6 mm) curved glass/glazing material.

* + - * 1. Segmented Design: 1-3/4 inches (44 mm) deep with standard glazing prep for \_\_ inch (\_\_ mm) flat glass/glazing material and offset to interior.
        2. Round Design: 1-3/4 inches (44 mm) deep with standard glazing prep for \_\_ inch (\_\_ mm) curved glass/glazing material and offset to interior.
        3. Canopy:

Round with curved aluminum 1/8 inch fascia panels minimum 12 inches (305 mm) high.

Interior ceiling 3/4 inch thick plywood laminated with .060 inch (1.5 mm) aluminum to match door finish.

\*\* NOTE TO SPECIFIER \*\* Select from the following canopy option paragraphs if required or delete if not required.

Extended canopy.

Segmented canopy on Segmented enclosure.

Cropped canopy.

Exterior roof fabricated from .090 inch (2 mm) anodized aluminum.

Two energy efficient ceiling lights with flush lens.

Backlit fluorescent signage on one or both sides of canopy.

* + - 1. Panel/Door Wing: Aluminum, 1-3/4 inches (44 mm) deep with narrow stile construction. Perimeter weatherstripping utilizing affixed sweeps to ensure weatherseal. Provide an intermediate, horizontal muntin bar, 2-1/4 inches (57 mm) wide, on each wing for safety and division of glass.

\*\* NOTE TO SPECIFIER \*\* insert the glazing prep size required. Note that standard glazing prep in 1/4 inch (6 mm) and optional prep is available 5/16 inch (8 mm) to 1-15/16 inch (33 mm).

* + - * 1. Glazing Prep: \_\_ inch (\_\_ mm) flat glass/glazing material with sloped stops on horizontal rails (except on clad units).

\*\* NOTE TO SPECIFIER \*\* Select from the following Panel/Door Wing optional paragraphs as required and delete those not required.

* + - * 1. Medium stile rails.
        2. Additional standard horizontal muntin bars.
        3. Horizontal muntin bars: 8 inches (203 mm), or 10 inches (254 mm) wide
        4. Optional bottom rails: 8 inches (203 mm), or 10 inches (254 mm) tall.
      1. Hardware:
         1. Locks: Provide with five pin cylinders and concealed bolts on two door wings.
         2. Bottom pivot/bearing: Surface mounted with no excavation below floor line required.
         3. Center Shaft: 1-1/2 inch (38 mm) diameter steel shaft with connections to operator and bottom pivot/bearing.
    1. 2-Way Card Access Security with Anti-Piggyback/Tailgate Revolving Door System:
       1. Model: ControlFlow 2-Way Card Access Security Series 9200 with Visdom ELITE Anti-Piggyback/Tailgate Revolving Door System. Units include operator, enclosure/drum with canopy, door wings/panels, center shaft, bottom pivot and security mats.
       2. Operator: Adjustable power operator mounted within the enclosure canopy. Operator provided with 1/4 HP 500 RPM high torque motor, 90 VDC electric brake, gear box, and control panel. ETL approved and tested to UL 325 Standard. Non-listed units are not be acceptable.
          1. Double seal, corrosion-proof, cast iron gear case with case hardened (60Rc) helical gears in synthetic, low temperature oil bath lubrication.
          2. Motor drive enclosed to prevent EMI noise from affecting microprocessor control.
          3. A 1-1/2 inch (38 mm) diameter solid steel center shaft serves as main linkage to connect the operator to revolving door wings. At-rest position of door wings is adjustable to suit the traffic and desired function.
          4. An RS-485 port is provided for communication with external display (by others) to monitor door status, violations and operation.
       3. Master Control: Microprocessor Master Control Panel (MCP) multiprocessor digital control system utilizing time-division multiplexed operations to provide precision motor-drive, constant sensor monitoring, and automated setup. All inputs have an adjacent LED to verify input signals. Three sets of programmable Form C contacts are available for monitoring door functions or violations.
          1. Parameters: 99 adjustable functions provided including but not limited to:

Door speeds

Time delays

Reaction to, and force required for safety stops

Adjust card request storage,

Safety stops before idle

* + - * 1. Modes: Define how the door will be used. A key switch is provided for selecting operating modes. 14 operating modes provided including but not limited to:

Totally secure, Card reader access for entry and exit

Card reader entry and free exit

Motion sensor activation for entry and exit

Freewheel mode

* + - * 1. Diagnostics: Used to set-up and maintain unit via a wireless Local Remote Control (LCP) with seven segment diagnostic display from outside the door. Adjustments at the control or via a wired remote shall not be considered equal. Logic will perform a self-set up, not requiring technician intervention or changes to ensure a safe installation. 16 diagnostic modes provided including but not limited to:

Calculating unit speed in RPM's

Testing voice module

Global relearn sets safety sensitivity to optimum level

Checking motor voltage, current and optional brake voltage

* + - * 1. Voice Annunciator: 4 digital 100 percent solid state field programmable voice message provided. Tape recorded message are not be accepted.
        2. Dual zone security mats to discern whether the user is entering or leaving the secured zone of the door and communicate to microprocessor control.
        3. Visdom ELITE Anti-Piggyback/Anti-Tailgating: System shall discern between single and multiple users and shall prevent two users from entering or exiting on a single presentation.
      1. Traffic Control Function - Selectable Day/Night Operation:
         1. Two-Way Security: Traffic controlled from both directions. (Note: ' +' positioning preferred for best security). Access Control System (ACS) device specified in Section 28 13 53 - Security Access Detection (by others) shall be placed at entrance to each side to obtain authorization for passage through door. Note: signals from the ACS shall be normally open contacts that close for a duration of 1/4 sec to 1 sec. This action shall cause electric brake to unlock and set operator in motion (' x' position) or look for zone activation (' +' position). Actuation shall cause door to revolve at rate of 3 to 4 RPM's (adjustable-regulated by ANSI 156.27) for 1/2 turn (' x' position) or 1/4 turn (' +' position), then stop at the next ' at-rest' position. Electric brake shall then lock door. Any attempt of entry from unauthorized side during this operation shall be detected. Passage will be allowed from either side only by a signal from the ACS or key switch provided. One-way security requires a motion sensor or push button.
         2. Day Operation/Non-Security Mode: Upon signal (dry contact) from security personnel or ACS, control shall operate as a two-way free access door in both directions (selectable). Actuation shall be from motion sensors (optional), activated by logic software. Any zone signal shall cause door to turn to avoid entrapment. LED shall glow green denoting day operation. Upon release of dry contact, door shall automatically return to previous mode (selectable).
         3. Authorization: ACS specified in Section 28 13 53 - Security Access Detection (by others) shall be mounted adjacent to entrance on both sides of revolving door. Mounting can be done on manufacturer's standard mounting bracket as supplied for the type of ACS furnished. Door status bracket shall include visual signal light and audio tone device. Upon valid presentation, the door's CPU will accept signal, red LED will turn off, green LED will illuminate and an audible tone (adjustable) will sound. To prevent entrapment the door's CPU will not accept user's presentation if user is standing in activation zone at the time presentation is made (selectable). However, audible tone will sound to indicate a valid presentation but indicator light shall remain red.
         4. Activation and Passage: After door's CPU accepts valid presentation and indicator light turns green, user will enter enclosure. Door will activate as per ' x' or ' +' position and then rotate at a speed of 3-4 RPM counter clockwise to allow single passage only and then relock to prevent tailgating in same direction of travel. If tailgating individual has also made valid presentation, door will continue revolving to allow nonstop passage. Door is capable of continuous nonstop revolutions as long as valid presentations are made. Door capable of up to 960 simultaneous entries and exits per hour. User shall be given three attempts or seven seconds to complete passage. If passage is completed on first or second attempt, another valid presentation will be required for the next user.
         5. Anti-Tailgating/Opposite Direction Of Travel: Attempted unauthorized passage will result in door being locked by electric brake when unauthorized presence is detected. A solid state voice annunciator will inform intruder "Security Violation. Door Will Reverse." Door will then rotate backward to a position allowing secure area to be cleared. When secure area is cleared by intruder, door will resume normal rotation, allowing authorized entry to be completed.
         6. Violation: Attempted unauthorized passage will result in door being locked by electric brake when unauthorized presence is detected. A solid state voice annunciator will inform intruder "Security Violation . . . Door Will Reverse." Door will then rotate backward to a position allowing secure area to be cleared. Voice annunciator will state "Please Exit Door" then "Re-enter" to inform authorized person to clear and then reactivate zone to resume to normal rotation, allowing entry to be completed.
      2. Safety: Provide the following safety features as per ANSI A156.27:
         1. Entrapment Protection - Collapsing Mechanism: Door design equipped with Magnetic Breakaway and completely collapse in case of emergency as required by Codes.

Electromagnets capable of holding with more than 1000 lbs. (4400 N) min. force to maintain system integrity and hold door wings in their respective positions under normal conditions.

Provide with a circuit to be connected to the building's alarm system. Activation of the fire alarm, smoke detector or remote emergency button shall remove power to the door's electromagnetic locks and allow the wings to fully collapse into the bookfold position.

Provide with an emergency switch mounted near the door and labeled "Break Glass to Release Magnetic Locks." When power is released, door operation will stop and wings shall maintain their respective positions but can be broken away into true book-fold position with 80-130 lbs (355-578 N) of force (adjustable).

* + - * 1. Alarm Contacts: Provide to activate remote signal (by others) when door has loss of power.
        2. Torque Limiting: Provide via a back pressure sensing circuit adjusted so that 20-30 lb. (67-133 N) back pressure will stop door's rotation.
        3. Cushioned Wall Safety Edges: Provide at throat entrances to stop door's rotation when depressed for more than 1/4 of a second.
        4. Bump-to-Idle (Safety Stop Before Idle): If back pressure circuit or safety edge is activated during normal authorized operation, door will stop and remain disengaged in an unlocked and idle position. A voice annunciator will be activated to say "Please Push Door Forward." Door wings shall be free to rotate manually in either direction toward a normal at rest and locked ' +'position. Door will then reset for normal operation on next authorized passage.
      1. Enclosure: Extruded aluminum and glass/glazing material constructed to maintain proper clearances and weather seal.

\*\* NOTE TO SPECIFIER \*\* Select one of the two following enclosure design paragraphs as required and insert the glazing prep size required. Delete the enclosure design not required. Standard glazing prep for Segmented Design is 1/4 inch and optional from 5/16 inch (8 mm) to 1/2 inches (13 mm). Standard glazing prep for Round Design is 7/16 inch (6 mm) curved glass/glazing material.

* + - * 1. Segmented Design: 1-3/4 inches (44 mm) deep with standard glazing prep for \_\_ inch (\_\_ mm) flat glass/glazing material and offset to interior.
        2. Round Design: 1-3/4 inches (44 mm) deep with standard glazing prep for \_\_ inch (\_\_ mm) curved glass/glazing material and offset to interior.
        3. Canopy:

Round with curved aluminum 1/8 inch fascia panels minimum 12 inches (305 mm) high.

Interior ceiling 3/4 inch thick plywood laminated with .060 inch (1.5 mm) aluminum to match door finish.

\*\* NOTE TO SPECIFIER \*\* Select from the following canopy option paragraphs if required or delete if not required.

Extended canopy.

Segmented canopy on Segmented enclosure.

Cropped canopy.

Exterior roof fabricated from .090 inch (2 mm) anodized aluminum.

Two energy efficient ceiling lights with flush lens.

Backlit fluorescent signage on one or both sides of canopy.

* + - 1. Panel/Door Wing: Aluminum, 1-3/4 inches (44 mm) deep with narrow stile construction. Perimeter weatherstripping utilizing affixed sweeps to ensure weatherseal. Provide an intermediate, horizontal muntin bar, 2-1/4 inches (57 mm) wide, on each wing for safety and division of glass.

\*\* NOTE TO SPECIFIER \*\* insert the glazing prep size required. Note that standard glazing prep in 1/4 inch (6 mm) and optional prep is available 5/16 inch (8 mm) to 1-15/16 inch (33 mm).

* + - * 1. Glazing Prep: \_\_ inch (\_\_ mm) flat glass/glazing material with sloped stops on horizontal rails (except on clad units).

\*\* NOTE TO SPECIFIER \*\* Select from the following Panel/Door Wing optional paragraphs as required and delete those not required.

* + - * 1. Medium stile rails.
        2. Additional standard horizontal muntin bars.
        3. Horizontal muntin bars: 8 inches (203 mm), or 10 inches (254 mm) wide
        4. Optional bottom rails: 8 inches (203 mm), or 10 inches (254 mm) tall.
      1. Hardware:
         1. Locks: Provide with five pin cylinders and concealed bolts on two door wings.
         2. Bottom pivot/bearing: Surface mounted with no excavation below floor line required.
         3. Center Shaft: 1-1/2 inch (38 mm) diameter steel shaft with connections to operator and bottom pivot/bearing.
  1. MATERIALS
     1. Extruded Aluminum: ASTM B221, 6063-T5 alloy and temper, anodized:
        1. Structural Drum/Enclosure Sections: Minimum 1/8" (3 mm) thickness.
        2. Structural Panel/Door Wing Sections: Commercial grade.
     2. Sheet Aluminum: ASTM B 209, 5005 alloy, H15 or H34 temper.
     3. Sheet Steel: ASTM A 924/A 924M; galvanized to minimum G90.
     4. Steel Sections: ASTM A 36/A3 6M; shaped to suit mullion sections, galvanized.

\*\* NOTE TO SPECIFIER \*\* Select one of the following glass paragraphs; coordinate with requirements specified for each door required.

* + 1. Glass: Glass shall be in accordance with Safety Glazing standard ANSI-Z97.1.2.
       1. Door Wing Glazing: Standard material will be flat safety glass in clear, 1/4 inch (6 mm) tempered. Optional: Glass up to 1-5/16 inch (33 mm) insulated or bullet-resistant material up to Level III.
       2. Enclosure Glazing - Segmented: Standard material will be flat safety glass in clear, 1/4 inch (6 mm) tempered. Optional: Glass up to 1-5/16 inch (33 mm) insulated or bullet-resistant material up to Level III. Enclosure glass can be tinted or with 1/8 inch aluminum
       3. Enclosure Glazing - Round: Standard material will be curved safety glass in clear, 7/16" laminated. Optional: 1/4 inch (6 mm) tempered, 9/16 inch laminated. Enclosure glass can be tinted or with 1/8 inch aluminum.
    2. Glazing Materials: Entrance manufacturer's standard types to suit application and conforming to requirements specified in Section 08 83 13 - Mirrored Glass Glazing.
    3. Fasteners: Stainless steel or corrosion resistant steel.
  1. FINISH

\*\* NOTE TO SPECIFIER \*\* Select the finish required from the following paragraphs as required for the project and delete the finishes not required.

* + 1. Aluminum Finish (for all exposed aluminum surfaces): Shall be one of the following:
       1. Anodized Aluminum:
          1. 204-R1 Clear: Arch. Class 2 Clear Anodized Coating, AA-MI2C22A31.
          2. 313-R1 Dark Bronze: Arch. Class 1 Anodized Coating, AA-MI2C22A44.
          3. 312-R1 Medium Bronze: Arch. Class 1 Anodized Coating, AA-MI2C22A44.
          4. 311-R1 Light Bronze: Arch. Class 1 Anodized Coating, AA-MI2C22A44.
          5. Champagne: Arch. Class 1 Anodized Coating, AA-MI2C22A44.
          6. Gold: Arch. Class 1 Anodized Coating, AA-MI2C22A44.
       2. Paint Coating:
          1. Powder Coat: 100 percent V.O.C. free fluoropolymer resin-based.
          2. Wet Paint: Standard and custom colors available.
          3. Color:

\*\* NOTE TO SPECIFIER \*\* Standard and custom colors are available including wood grain finish.

As selected from manufacturer's standard range.

Custom color as selected by the Architect.

* + - 1. Clad:
         1. Stainless steel #7 mirror finish.
         2. Stainless steel #4 brushed finish.
         3. Muntz metal (brass alloy): #7 mirror finish.
         4. Muntz metal (brass alloy): #4 brushed finish.
  1. FABRlCATlON
     1. Panel Construction:
        1. Corner block type with 3/16 inch steel backup plate construction, mechanically secured with minimum of four hardened steel screws.
        2. Sash consists of snap-in glass stops, snap-in glazing beads and vinyl gaskets.
        3. Weatherstripping material captured in extruded aluminum door panel. Surface applied self-adhesive weatherstripping not acceptable.
     2. Enclosure Construction: Butt joints, mechanically secured with screws and formed alum. corner brackets.
     3. Operator Construction: Electromechanical, modular type construction.

1. EXECUTION
   1. EXAMINATION
      1. Do not begin installation until substrates have been properly prepared.
      2. Verify that other trades are complete with their required work before installing the door operating system.
      3. Mounting surfaces shall be plumb, straight and secure; substrates shall be of proper dimension and material; material which door is anchored to shall be capable of supporting the automatic door system and associated loads.
      4. Verify electric power is available and has correct characteristics.
      5. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.
   2. PREPARATION
      1. Clean surfaces thoroughly prior to installation.
      2. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
   3. INSTALLATION
      1. Install in accordance with manufacturer's instructions.
      2. Set all units plumb, level and secure.
      3. Provide all fasteners required for installation of the door system.
      4. Comply with AAMA 101, Appendix Dissimilar Materials by separating aluminum materials and other corrodible surfaces from sources of corrosion or electrolytic action contact points
      5. For exterior applications install header and framing members in a bed of sealant or with joint filler or gaskets. Coordinate installation with wall flashings and other components of construction.
      6. Install enclosure with joint filler or gaskets and sealant. Coordinate installation with wall flashings and other components of construction.
      7. After repeated operation of the completed installation, inspect door operators and controls for optimum operating condition and safety.
      8. Adjust door equipment for correct function and smooth operation.
      9. Clean all metal surfaces promptly after installation.
      10. Remove temporary protection, clean exposed surfaces.
   4. FIELD QUALITY CONTROL
      1. Manufacturers representative to verify that installation of doors and controls are in conformance to the manufacturer's recommendations.
   5. CLEANING AND PROTECTION
      1. Protect installed products until completion of project.
      2. Clean product surfaces and lubricate operating equipment for optimum condition and safety. Advise contractor of precautions required through the remainder of the construction period, to ensure that doors will be without damage or deterioration at the time of acceptance.
      3. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION