SECTION 08 42 29

SLIDING AUTOMATIC ENTRANCES

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\*\* NOTE TO SPECIFIER \*\* TORMAX USA Inc.; products.  
  
This section is based on the products of TORMAX USA Inc., which is located at:  
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San Antonio, TX 78247  
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Web:[www.tormaxusa.com](http://www.tormaxusa.com)   
[Click Here] for additional information.  
Welcome to one of the world's leading door system suppliers. As you read this, somewhere in the world a TORMAX automatic door system is being installed. Since 1951 the TORMAX name has stood for safety, reliability, and superior functionality. Discover the beautiful and high tech door world of TORMAX found where ever people move. Owning a TORMAX door means owning the best.  
Since its founding in Switzerland by the Landert Motoren Group, TORMAX has set the global standard for entrance system automation. TORMAX USA Inc., headquartered with manufacturing in San Antonio, Texas, founded in 1997, is the TORMAX supplier for North America. We provide high quality, quick response, technically supported solutions for Swing Doors, Sliding Doors, Folding Doors, Doors for Extreme Conditions, Escape Route & Fire Doors, Industrial Doors, Semi-Circular Doors, Revolving Doors, Manual Doors-ICU, Controls, Accessories, and Door Management Systems.  
This specification includes Outside and Inside Slide, Storm Impact Rated, and Storm Non-Impact Rated Door Systems; Telescoping Trackless Outside Slide and Telescoping Inside Slide Door Systems; and All Glass Sliding Door System.  
TORMAX Series TX9500AG All Glass Sliding Doors, TX9200 Outside Slide, TX9300 Inside Slide, TX9420TL Telescoping Trackless Outside Slide, and TX9430 Telescoping Inside Slide hi-spec automatic sliding door systems meet ISO 14644-1 Class 2 cleanroom standard and exceeds the old FS 209E Class 1 standard.  
TORMAX also offers Door and Drive Header Case Assemblies for Inside Slide Surface and Flush Mount and for Telescoping Outside Slide Mount Assemblies for use with Door Panels provided by others. Contact TORMAX for additional information.

1. GENERAL
   1. SECTION INCLUDES

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

* + 1. Automatic Sliding Doors.
  1. RELATED SECTIONS

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

* + 1. Section 07 90 00 - Joint Protection.
    2. Section 08 32 13 - Sliding Aluminum-Framed Glass Doors.
    3. Section 08 40 00 - Entrances, Storefronts, and Curtain Walls.
    4. Section 08 42 29.33 - Swinging Automatic Entrances.
    5. Section 08 71 00 - Door Hardware.
    6. Section 08 83 13 - Mirrored Glass Glazing.
    7. Section 12 48 43 - Floor Mats.
    8. Section 26 05 19 - Low-Voltage Electrical Power Conductors and Cables.
  1. REFERENCES

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

* + 1. ANSI A117.1 - American National Standard for Accessible and Useable Buildings and Facilities.
    2. ANSI A156.10 - Power Operated Pedestrian Doors.
    3. ANSI A156.38 - Low Energy Power Operated Sliding Doors,
    4. ANSI/UL 325 - Door, Drapery, Gate, Louver, and Window Operators and Systems - (UL) listed.
    5. ANSI-Z97.1.2 - Safety Performance Specifications and Methods of Test for Safety Glazing Materials Used in Buildings.
    6. Aluminum Association Standard AA DAF-45 - Designation System for Aluminum Finishes.
    7. Miami-Dade County Building Code Compliance Office (BCCO) Notice of Acceptance (NOA)
    8. PA 201-94 - Large and Small Missile Impact Test. Dade County Code Compliance Protocols.
    9. PA 202-94 - Uniform Static Pressure Test. Dade County Code Compliance Protocols.
    10. PA 203-94 - Cyclic Wind Pressure Loading Test. Dade County Code Compliance Protocols.
    11. NFPA 101 - Life Safety Code.
    12. ISO 14644-1 Class 2 cleanroom standard
    13. FBC - Florida Building Code Compliance Office.
    14. AAADM - American Association of Automatic Door Manufacturers/
  1. DESIGN / PERFORMANCE REQUIREMENTS
     1. Automatic sliding door system shall be certified by the manufacturer to meet performance design criteria according to the following test standards:

\*\* NOTE TO SPECIFIER \*\* Delete any test standards not required.

* + - 1. ANSI A156.10.
      2. ANSI A156.38.
      3. NFPA 101.
      4. Underwriter's Laboratories 325 (UL) listed.
      5. C-UL certified.

\*\* NOTE TO SPECIFIER \*\* Include the following paragraph if required. Note that this optional feature is only available on TORMAX Series TX9500AG All Glass Sliding Doors, TX9200 Outside Slide Doors, TX9300 Inside Slide Doors, TX9420TL Telescoping Trackless Outside Slide Doors, and TX9430 Telescoping Inside Slide hi-speed automatic sliding door systems. Delete if not applicable.

* + - 1. ISO 14644-1 Class 2 Cleanroom Standards.
    1. Accessibility Requirements: Comply with requirements of Local building code, and Americans with Disabilities Act (ADA), Accessibility Guidelines for Buildings and Facilities.

\*\* NOTE TO SPECIFIER \*\* Coordinate with mechanical engineer to determine if artificially induced air pressure and suction loads in building interior will adversely affect requirements of the following paragraph.

* + 1. System Design: Operate, hold open, and close doors under design wind and suction loads calculated in accordance with applicable building code.
    2. Operating Temperature Range: Minus 30 to plus 130 degrees F (minus 34 to plus 55 degrees C) ambient.
    3. Operators: Fully adjustable for opening and closing speeds, checking speeds, hold open time, and cancellation on activation of fire alarm and smoke detection system.
    4. Electrical: 120 VAC, 60 Hz, 5 Amp service provided to the header.
  1. SUBMITTALS
     1. Submit under provisions of Section 01 30 00 - Administrative Requirements 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.
        4. Operation and maintenance data.
     3. Shop Drawings: Indicate layout and dimensions; head, jamb, and sill conditions; elevations; components, anchorage, adjacent construction interface, recesses, materials, and finishes, electrical characteristics, and connection requirements.

\*\* NOTE TO SPECIFIER \*\* Delete the following paragraphs if LEED is not applicable.

* + 1. LEED Submittals: Provide documentation of how the requirements of Credit will be met:
       1. List of proposed materials with recycled content. Indicate post-consumer recycled content and pre-consumer recycled content for each product having recycled content.
       2. Product data and certification letter indicating percentages by weight of post-consumer and pre-consumer recycled content for products having recycled content.

\*\* 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. Contract Closeout:
       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: A minimum of 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. Automatic Sliding Door System Products shall be manufactured in an ISO 9001 registered manufacturing facility.
     2. Installer Qualifications: Must be AAADM certified and specialize in the installation of work similar to that required for this project.

\*\* NOTE TO SPECIFIER \*\* Include a mock-up if the project size and/or quality warrant taking such a precaution. The following is one example of how a mock-up on a large project might be specified. When deciding on the extent of the mock-up, consider all the major different types of work on the project.

* + 1. Mock-Up: Provide a mock-up for evaluation of surface preparation techniques and application workmanship.
       1. Finish areas designated by Architect.
       2. Do not proceed with remaining work until workmanship, color, and sheen are approved by Architect.
       3. Refinish mock-up area as required to produce acceptable work.
  1. 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.
  2. 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.
  3. 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 the manufacturer's absolute limits.
  4. MAINTENANCE MATERIALS
     1. Provide special wrenches and tools applicable to each different or special hardware component.
  5. 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: TORMAX USA Inc., which is located at:12859 Wetmore Rd.San Antonio, TX 78247Toll Free Tel: 888-685-3707Tel: 210-494-3551Fax: 210-494-5930Email: [request info (info@tormaxusa.com)](https://arcat.com/rfi?action=email&company=TORMAX%252BUSA%252BInc.&message=RE%253A%2520Spec%2520Question%2520(08463tor)%253A%2520&coid=43969&spec=08463tor&rep=&fax=210-494-5930);Web: <https://www.tormaxusa.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 the provisions of Section 01 60 00.

\*\* NOTE TO SPECIFIER \*\* Select the following automatic sliding door systems and delete the ones not required. TORMAX automatic sliding doors are available in narrow stile and medium stile frames in outside slide and inside slide configurations. Doors are provided unglazed, coordinate with Section 08 83 13 - Mirrored Glass Glazing to specify proper glazing.

* 1. AUTOMATIC SLIDING DOOR SYSTEM
     1. TORMAX Series TX9200 Outside Slide: System consists of sliding aluminum doors and sidelights, header, jambs, locking hardware, TORMAX iMotion direct drive system, TORMAX 7501 Sensors, and 7401 Doorway Holding Beams. Components are to be factory assembled in the header, adjusted, and tested. No field wiring or operator adjustment required other than connection to job-site power.
        1. Sliding Aluminum Door Panels: Corner block construction to sizes indicated. Sliding door panels allow "breakout" to the full open position and provides instant egress at any point in the door's movement. Provide with spring return closers to return panel when broken out for emergency egress. Size doors and fixed sidelights to prevent pinch points at meeting stiles.
           1. Door Type:

\*\* NOTE TO SPECIFIER \*\* Delete stile and rail options not required. The 1-3/4 inch (44 mm) intermediate horizontal rail is not available if the automatic looking hardware paragraph is required. Only the 4-1/2 inch (114 mm) intermediate horizontal rail may be used.

Narrow Stile: 2-1/8 inch (59 mm).

Medium Stile:3-1/2 inch (89 mm).

Bottom Rail: 4 inch (102 mm).

Bottom Rail: 10 inch (254 mm).

Intermediate Horizontal Rail: 1-3/4 inch (44 mm).

Intermediate Horizontal Rail: 4-1/2 inch (114 mm).

* + - * 1. Door Operation:

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

Single slide.

Bi-part slide.

* + - * 1. Traffic Operation:

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

For one-way traffic.

For two-way traffic.

* + - * 1. Glazing Thickness: Doors are field glazed as specified in Section 08 83 13. Provide with security glass stops for the following glass thickness:

\*\* NOTE TO SPECIFIER \*\* Delete glass thickness and rail options not required.

Glass Thickness: 1/8 inch (3 mm).

Glass Thickness: 1/4 inch (6 mm).

Glass Thickness: 3/8 inch (10 mm).

Glass Thickness: 1/2 inch (13 mm).

Glass Thickness: 5/8 inch (16 mm).

Glass Thickness: 3/4 inch (19 mm).

Glass Thickness: 7/8 inch (22 mm).

Glass Thickness: 1 inch (25 mm).

\*\* NOTE TO SPECIFIER \*\* Delete locking hardware paragraph if not required.

* + - * 1. Locking Hardware: Provide with key cylinder on the exterior and a thumb turn on the interior in accordance with NFPA 101.

\*\* NOTE TO SPECIFIER \*\* Delete one of the two following paragraphs, whichever is not required.

Bi-part sliding doors provided with a two-point Maximum Security deadlock.

Single sliding door provided with a single point Maximum Security deadlock.

\*\* NOTE TO SPECIFIER \*\* Delete if the Locking Hardware paragraph is not required. If locking hardware paragraph is required then keep the Automatic Locking Hardware paragraph if it is required as well.

* + - * 1. Automatic Locking Hardware: Limited Access security consists of electric solenoid lock and 4-1/2 inch (114 mm) intermediate midrail, with integrated flush mount concealed vertical rod exit panic hardware. Electric solenoid locking is a 115 VAC fail-secure solenoid with self-contained solid-state electronic control factory installed inside TX9000 header. Solenoid lock is operational in the "Off" and "Exit" mode of operation. Lock is engaged in the "Off" mode of operation and with the unit in the "Exit" mode, solenoid lock retracts upon receipt of an operate signal from an actuating control allowing doors to open. Upon loss of signal the doors will slide closed. Solenoid lock shall self-latch in the closed position, returning system to locked status. During a power interruption, solenoid lock shall remain locked in the "Off" and "Exit" mode of operation, securing the doors in the closed position. Egress is provided with flush mount panic bar allowing sliding doors to break out. Lock may be reprogrammed at the jobsite for fail-safe type operation.

\*\* NOTE TO SPECIFIER \*\* The two items below are optional. Select one of the following two or none if not required.

Bi-part sliding doors provided with a two-point Maximum Security deadlock.

Single sliding door provided with a single point Maximum Security deadlock.

* + - 1. Aluminum Frame and Extrusions:
         1. Wall Thickness: 0.125 inch (3 mm) in integral structural sections.
         2. Frame (D x W): 4-1/2 x 1-3/4 inches (114 x 44 mm).

\*\* NOTE TO SPECIFIER \*\* The transom frame is optional. Delete paragraph or delete glass thickness options not required.

* + - * 1. Transom Frame: to be pocket flush glaze gasket system. Field glazed as specified in Section 08 83 13 - Mirrored Glass Glazing.

Glass Thickness: 1/4 inch (6 mm).

Glass Thickness: 5/8 inch (16 mm).

Glass Thickness: 1 inch (25 mm).

* + - * 1. Transom Packages:

\*\* NOTE TO SPECIFIER \*\* Delete vertical transom tube option not required. The first option is standard for Bi-Part Transoms.

Vertical Transom Tube: 1.

Vertical Transom Tube: \_\_\_.

\*\* NOTE TO SPECIFIER \*\* Delete aluminum sidelights option if not required.

* + - 1. Aluminum Sidelights: Provide sidelight panels with corner block construction to sizes indicated.
         1. Panel Configuration:

\*\* NOTE TO SPECIFIER \*\* Delete panel configuration not required.

"O" Panel.

"P" Panel. (Non-glazed half panel.)

* + - * 1. Type:

\*\* NOTE TO SPECIFIER \*\* Delete stile and rail options not required. The 4-1/2 inch (114 mm) intermediate horizontal rail is standard with access control.

Narrow Stile: 2-1/8 inch (59 mm).

Medium Stile:3-1/2 inch (89 mm).

Bottom Rail: 4 inch (102 mm).

Bottom Rail: 10 inch (254 mm).

Intermediate Horizontal Rail: 1-3/4 inch (44 mm).

Intermediate Horizontal Rail: 4-1/2 inch (114 mm).

* + - * 1. Glazing Thickness: Sidelights are field glazed as specified in Section 08 83 13 - Mirrored Glass Glazing. Provide with security glass stops for the following glass thickness:

\*\* NOTE TO SPECIFIER \*\* Delete glass thickness and rail options not required.

Glass Thickness: 1/8 inch (3 mm).

Glass Thickness: 1/4 inch (6 mm).

Glass Thickness: 3/8 inch (10 mm).

Glass Thickness: 1/2 inch (13 mm).

Glass Thickness: 5/8 inch (16 mm).

Glass Thickness: 3/4 inch (19 mm).

Glass Thickness: 7/8 inch (22 mm).

Glass Thickness: 1 inch (25 mm).

* + - 1. Header Case: Aluminum extruded header contains the TORMAX iMotion direct drive system and door mounting components over a span of 18 feet (5486 mm) with minimal deflection.

\*\* NOTE TO SPECIFIER \*\* Select one of the following two Direct Drive paragraphs as required for the project and delete the one not required.

* + - * 1. iMotion 2301 Direct Drive: For use with sliding one single door leaf weighing up to 330 pounds (150 kg) or two bi-parting door leafs weighing up to 286 pounds (130 kg) each.

\*\* NOTE TO SPECIFIER \*\* Select one of the following three paragraphs as required for the project and delete the ones not required.

Concealed Mount Header: Extruded aluminum, 7-15/16 inches wide by 7-3/4 inches high (202 mm by 197 mm). Provide with integral extruded aluminum cover with continuous self-locking hinge allowing it to open approximately flush with the top of the header.

Surface Mount Header: Extruded aluminum, 7-15/16 inches wide by 7-3/4 inches high (202 mm by 197 mm). Provide with integral extruded aluminum cover with continuous self-locking hinge allowing it to open approximately flush with the top of the header.

Flush Mount Header: Extruded aluminum, 6-1/8 inches wide by 7-7/8 inches high (156 mm wide by 200 mm high). Provide with extruded aluminum hinged cover allowing it to open approximately flush with the top of the header.

* + - * 1. iMotion 2401 Direct Drive: For use with sliding one single door leaf weighing up to 992 pounds (450 kg) or two bi-parting door leafs weighing up to 661 pounds (300 kg) each.

\*\* NOTE TO SPECIFIER \*\* Select one of the following three paragraphs as required for the project and delete the ones not required.

Concealed Mount Header: Extruded aluminum, 9-1/8 inches wide by 7-3/4 inches high (232 mm by 197 mm). Provide with integral extruded aluminum cover with continuous self-locking hinge allowing it to open approximately flush with the top of the header.

Surface Mount Header: Extruded aluminum, 9-1/8 inches wide by 7-3/4 inches high (232 mm by 197 mm). Provide with integral extruded aluminum cover with continuous self-locking hinge allowing it to open approximately flush with the top of the header.

Flush Mount Header: Extruded aluminum, 7-3/8 inches wide by 7-7/8 inches high (187 mm wide by 200 mm high). Provide with extruded aluminum hinged cover allowing it to open approximately flush with the top of the header.

* + - 1. Door Hanger Wheels:
         1. Each door is suspended from an overhead track by nylon wheels with steel lifetime lubricated ball bearings. Roller track is field replaceable and isolated in rubber for smooth and quite operation. Each door supported by a factory adjusted cantilever support pivot assembly that allows doors to swing outward for emergency egress and spring return closed without the need for a lower door pivot support. The door height has an adjustment of 1/2 inch (13 mm).

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

Nylon Wheels, iMotion 2301: Provide four 2-1/2 inch (64 mm) diameter wheels, held on track by two 7/8 inch (22 mm) diameter nylon anti-riser wheels.

Nylon Wheels, iMotion 2401: Provide eight 2-1/2 inch (64 mm) diameter nylon wheels, held on track by four 7/8 inch (22 mm) diameter nylon anti-riser wheels.

* + - 1. Accessories: Provide with following accessories:

\*\* NOTE TO SPECIFIER \*\* Select one of the following two paragraphs and delete one not required.

* + - * 1. Weather-stripping: Provide nylon brush on the bottom of each sliding door panel; two rows of wool pile weather-stripping at the leading edge of the active sliding door; wool pile weather-stripping between the header and sliding door carrier; and nylon brush between the lead stiles of the sidelights and the pivot stiles of sliding doors.
        2. Clean Room Seals: ISO 14644-1 Class 2. Provide two rows of rubber vinyl weather-stripping at the leading edge of the active sliding door; rubber vinyl weather-stripping between the header and sliding door carrier; and rubber vinyl weather-stripping between the lead stiles of the sidelights and the pivot stiles of sliding doors, and a vinyl sweep on the bottom of each sliding door panel.

\*\* NOTE TO SPECIFIER \*\* The following paragraphs are optional. Select those required and delete the ones not required. The following Electric lock option is standard with Automatic Locking Hardware. It may only be selected as an option when automatic locking hardware is not used.

* + - * 1. Electric Lock by TORMAX.
        2. Battery backup.
        3. Door position monitoring.
        4. I/O module.
        5. Key switch. (user interface)
        6. Key Switch: 4-position.
        7. Low voltage air curtain switch.
        8. Continuous Threshold with Profile:

\*\* NOTE TO SPECIFIER \*\* Delete profile type options not required.

Profile Type: 4-1/2 inch (114 mm) wide recessed square/square.

Profile Type: 8-1/2 inch (216 mm) wide surface double bevel.

Profile Type: 6-1/2 inch (165 mm) wide surface combination square/bevel.

* + 1. TORMAX Series TX9200 Storm Impact Rated Outside Slide: System consists of sliding aluminum doors and sidelights, header, jambs, locking hardware, TORMAX iMotion direct drive system, TORMAX 7501 Sensors, and 7401 Doorway Holding Beams. All components factory assembled in the header, adjusted, and tested. No field wiring or operator adjustment shall be required.
       1. Performance:
          1. Conforms to Miami-Dade County Building Code Compliance Office NOA NO 20-0720.06 and is rated for Large and Small Missile Impact Resistance. Maximum bi-parting door size is 15 feet 4 inches wide by 8 feet 8 inches high (4674 mm wide by 2642 mm high) and maximum single slide door size is 7 feet 9-3/16 inches wide by 8 feet 8 inches high (2367 mm wide by 2642 mm high) at an allowable pressure of plus 57 PSF / minus 57 PSF.
          2. The maximum allowable air infiltration rate is 1.2 cfm/ft2 in accordance with ASTM test methods.
       2. Sliding Aluminum Doors: Provide door panels with through bolt reinforced construction to sizes indicated. Sliding door panels shall allow "breakout" to the full open position to provide instant egress at any point in the door's movement. Provide with spring return closers to return the panel when broken out for emergency egress. Doors and fixed sidelights shall be sized to prevent pinch points at meeting stiles.
          1. Door Type:

\*\* NOTE TO SPECIFIER \*\* Delete stile and rail options not required.

Narrow Stile: 2-1/8 inch (59 mm).

Medium Stile: 3-1/2 inch (89 mm).

Bottom Rail: 4 inch (102 mm).

Bottom Rail: 10 inch (254 mm).

* + - * 1. Door Operation:

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

Single slide.

Bi-part slide.

* + - * 1. Traffic Operation:

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

For one-way traffic.

For two-way traffic.

* + - * 1. Glazing: Doors are field glazed with Oldcastle Glass laminated 5/16 inch (8 mm) heat strengthened StormGlass with interior wet glazed with DOW 995 silicone as specified in Section 08 83 13 - Mirrored Glass Glazing. Provide security glass stops with vinyl bead interior and exterior.
        2. Locking Hardware: Provide with key cylinder on the exterior and a thumb turn on the interior in accordance with NFPA 101.

\*\* NOTE TO SPECIFIER \*\* Select one of the following paragraphs as required for the project and delete the one not required.

Bi-part sliding doors provided with a two-point Maximum Security deadlock and three flush bolts.

Single sliding door provided with a two-point Maximum Security deadlock and one flush bolt.

* + - 1. Aluminum Frame and Extrusions: Provide with minimum .125 inch (3 mm) wall thickness in integral structural sections. Frame shall be 4-1/2 inches (114 mm) deep by 1-3/4 inches wide (44 mm) section.
      2. Aluminum Sidelights: Provide sidelight panels with through bolted reinforced construction to sizes indicated.
         1. Type:

\*\* NOTE TO SPECIFIER \*\* Delete stile and rail options not required.

Narrow Stile: 2-1/8 inch (59 mm).

Medium Stile: 3-1/2 inch (89 mm).

Bottom Rail: 4 inch (102 mm).

Bottom Rail: 10 inch (254 mm).

* + - * 1. Glazing: Sidelight panels are field glazed with Oldcastle Glass laminated 5/16 inch (8 mm) heat strengthened StormGlass with interior wet glazed with DOW 995 silicone as specified in Section 08 83 13 - Mirrored Glass Glazing. Provide security glass stops with vinyl bead interior and exterior.
      1. Header Case: Aluminum extruded header contains the TORMAX iMotion direct drive system and door mounting components over a span of 15 feet 4 inches (4674 mm) with minimal deflection.
         1. iMotion 2301 Direct Drive: For use with sliding one single door leaf weighing up to 330 pounds (150 kg) or two bi-parting door leafs weighing up to 286 pounds (130 kg) each.

Concealed Mount Header: Extruded aluminum, 8 inches wide by 7-7/8 inches high (203 mm by 200 mm). Provide with extruded aluminum hinged cover allowing it to open approximately flush with the top of the header.

* + - 1. Door Hanger Wheels:
         1. Each door is suspended from an overhead track by nylon wheels with steel lifetime lubricated ball bearings. iMotion 2301 requires four 2-1/2 inch (64 mm) diameter wheels and held on track by two 7/8 inch (22 mm) diameter nylon anti-riser wheels. Roller track is field replaceable and isolated in rubber for smooth and quite operation. Each door supported by a factory adjusted cantilever support pivot assembly that allows doors to swing outward for emergency egress and spring return closed without the need for a lower door pivot support. The door height has an adjustment of 1/2 inch (13 mm).
      2. Provide with Continuous Threshold Jamb to Jamb with Profile:

\*\* NOTE TO SPECIFIER \*\* Delete profile type options not required.

* + - * 1. Profile Type: 4-1/2 inch (114 mm) wide recessed square/square.
        2. Profile Type: 8-1/2 inch (216 mm) wide surface double bevel.
        3. Profile Type: 6-1/2 inch (165 mm) wide surface combination square/bevel.
      1. Accessories: Provide with following accessories:
         1. Weather-stripping: Provide two rows of nylon brush on the bottom of each sliding door panel; pile-fin single wool weather-stripping at the leading edge of the active sliding door; pile-fin wool weather-stripping between the header and sliding door carrier; and nylon brush between the lead stiles of the sidelights and the pivot stiles of sliding doors.

\*\* NOTE TO SPECIFIER \*\* The following paragraphs are optional. Select those required and delete ones not required.

* + - * 1. Electric Lock by TORMAX.
        2. Battery backup.
        3. Door position monitoring.
        4. I/O module.
        5. Key switch. (user interface)
        6. Key Switch: 4-position.
        7. Low voltage air curtain switch.
    1. TORMAX Series TX9200 Storm Non-Impact Rated Outside Slide: System consists of sliding aluminum doors and sidelights, header, jambs, locking hardware, TORMAX iMotion direct drive system, TORMAX 7501 Sensors and 7401 Doorway Holding Beams. All components factory assembled in the header, adjusted, and tested. No field wiring or operator adjustment shall be required.
       1. Performance: Conforms to Miami-Dade County Building Code Compliance Office NOA NO 20-0720.07.
          1. Maximum bi-parting door size of 15 feet 4 inches wide by 8 feet 8 inches high (4674 mm wide by 2642 mm high) and a maximum single slide door size of 7 feet 9-3/16 inches wide by 8 feet 8 inches high (2367 mm wide by 2642 mm high) at an allowable pressure of plus 64 PSF / minus 64 PSF.
       2. Sliding Aluminum Doors: Provide door panels with through bolt reinforced construction to sizes indicated. Sliding door panels shall allow "breakout" to the full open position to provide instant egress at any point in the door's movement. Provide with spring return closers to return the panel when broken out for emergency egress. Doors and fixed sidelights shall be sized to prevent pinch points at meeting stiles.
          1. Door Type:

\*\* NOTE TO SPECIFIER \*\* Delete stile and rail options not required.

Narrow Stile: 2-1/8 inch (59 mm).

Medium Stile: 3-1/2 inch (89 mm).

Bottom Rail: 4 inch (102 mm).

Bottom Rail: 10 inch (254 mm).

* + - * 1. Door Operation:

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

Single slide.

Bi-part slide.

* + - * 1. Traffic Operation:

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

For one-way traffic.

For two-way traffic.

* + - * 1. Glazing: Doors are field glazed with 1/4 inch (6 mm) Tempered Glass as specified in Section 08 83 13 - Mirrored Glass Glazing. Provide security glass stops with vinyl bead interior and exterior. Interior stops secured in place with additional screws.
        2. Locking Hardware: Provide with key cylinder on the exterior and a thumb turn on the interior in accordance with NFPA 101.

\*\* NOTE TO SPECIFIER \*\* Select one of the following paragraphs as required for the project and delete the one not required.

Bi-part sliding doors provided with a two-point Maximum Security deadlock and three flush bolts.

Single sliding door provided with a two-point Maximum Security deadlock and one flush bolt.

* + - 1. Aluminum Frame and Extrusions: Provide with minimum 0.125 inch (3 mm) wall thickness in integral structural sections. Frame shall be 4-1/2 inches (114 mm) deep by 1-3/4 inches wide (44 mm) section.
      2. Aluminum Sidelights: Provide sidelight panels with through bolt reinforced construction to sizes indicated.
         1. Type:

\*\* NOTE TO SPECIFIER \*\* Delete stile and rail options not required.

Narrow Stile: 2-1/8 inch (59 mm).

Medium Stile: 3-1/2 inch (89 mm).

Bottom Rail: 4 inch (102 mm).

Bottom Rail: 10 inch (254 mm).

* + - * 1. Glazing: Sidelight panels are field glazed with 1/4 inch (6 mm) Tempered Glass as specified in Section 08 83 13 - Mirrored Glass Glazing. Provide security glass stops with vinyl bead interior and exterior. Interior stops secured in place with additional screws.
      1. Header Case: Aluminum extruded header contains the TORMAX iMotion direct drive system and door mounting components over a span of 15 feet 4 inches (4674 mm) with minimal deflection.
         1. iMotion 2301 Direct Drive: For use with sliding one single door leaf weighing up to 330 pounds (150 kg) or two bi-parting door leafs weighing up to 286 pounds (130 kg) each.

Concealed Mount Header: Extruded aluminum, 8 inches wide by 7-7/8 inches high (203 mm by 200 mm). Provide with extruded aluminum hinged cover allowing it to open approximately flush with the top of the header.

* + - 1. Door Hanger Wheels:
         1. Each door is suspended from an overhead track by nylon wheels with steel lifetime lubricated ball bearings. iMotion 2301 requires four 2-1/2 inch (64 mm) diameter wheels and held on track by two 7/8 inch (22 mm) diameter nylon anti-riser wheels. Roller track is field replaceable and isolated in rubber for smooth and quite operation. Each door supported by a factory adjusted cantilever support pivot assembly that allows doors to swing outward for emergency egress and spring return closed without the need for a lower door pivot support. The door height has an adjustment of 1/2 inch (13 mm).
      2. Continuous Threshold with Following Profile:

\*\* NOTE TO SPECIFIER \*\* Delete profile type options not required.

* + - * 1. Profile Type: 4-1/2 inch (114 mm) wide recessed square/square.
        2. Profile Type: 8-1/2 inch (216 mm) wide surface double bevel.
        3. Profile Type: 6-1/2 inch (165 mm) wide surface combination square/bevel.
      1. Accessories: Provide with following accessories:
         1. Weather-stripping: Provide two rows of nylon brush on the bottom of each sliding door panel; pile-fin single wool weather-stripping at the leading edge of the active sliding door; pile-fin wool weather-stripping between the header and sliding door carrier; and nylon brush between the lead stiles of the sidelights and the pivot stiles of sliding doors.

\*\* NOTE TO SPECIFIER \*\* The following paragraphs are optional. Select those required and delete ones not required.

* + - * 1. Electric Lock by TORMAX.
        2. Battery backup.
        3. Door position monitoring.
        4. I/O module.
        5. Key switch. (user interface)
        6. Key Switch: 4-position.
        7. Low voltage air curtain switch.
    1. Basis or Design: TX9200SL Slim Line Outside Slide Door Systems as engineered, manufactured, and assembled by TORMAX USA Inc. Aluminum sliding doors, fixed sidelights, unglazed, structural header case, frame, TORMAX 2203.HB-UL electromechanical drive system, TORMAX 7401 Doorway Holding Beams and TORMAX 7501 Sensors.
       1. Factory assembled components in the header, adjusted, and tested.
       2. No field wiring or operator adjustment other than connection to job-site power.
       3. Electromechanical Drive System: Automatically adjusts door speeds to compensate for various door sizes, weights, and environmental conditions.
       4. Aluminum Slide Door Panels:
          1. Corner block construction to dimension heights and widths with corresponding glazing as shown on construction documents.

\*\* NOTE TO SPECIFIER \*\* Delete stile option not required.

* + - * 1. Stile, Narrow: 2-1/8 inch (54 mm).
        2. Stile Medium: 3-1/2 inch (89 mm).
        3. Security Glass Stops.

\*\* NOTE TO SPECIFIER \*\* Delete glass thickness and rail options not required.

Glass Thickness: 1/8 inch (3 mm).

Glass Thickness: 1/4 inch (6 mm).

Glass Thickness: 3/8 inch (10 mm).

Glass Thickness: 1/2 inch (13 mm).

Glass Thickness: 5/8 inch (16 mm).

Glass Thickness: 3/4 inch (19 mm).

Glass Thickness: 7/8 inch (22 mm).

Glass Thickness: 1 inch (25 mm).

* + - * 1. Bottom Rail: 4 inch (102 mm).
        2. Bottom Rail: 10 inch (254 mm).
        3. Intermediate Horizontal Rail: 1-3/4 inch (44 mm).
        4. Intermediate Horizontal Rail: 4-1/2 inch (114 mm).
        5. Closers: Spring return. Return panels when broken out for emergency egress.
      1. Locking Hardware:

\*\* NOTE TO SPECIFIER \*\* Delete one of the first two following paragraphs, whichever is not required.

* + - * 1. Bi-Part Sliding Door Systems: Includes a two-point maximum security deadlock. Secures the lock and latch stiles together and the lock stile to the top door carrier assembly.
        2. Single Sliding Door: Includes a single point maximum security deadlock securing the lock stile to the vertical jamb.
        3. Maximum Security Deadlock: Provided with key cylinder on the exterior and a thumb turn on the interior in accordance with NFPA 101.
      1. Door Operation:

\*\* NOTE TO SPECIFIER \*\* Delete slide type, operation, and energy level options not required.

* + - * 1. Slide Type: Single slide.
        2. Slide Type: Bi-part.
        3. Operation: One-way traffic.
        4. Operation: Two-way traffic.
        5. Energy Level: Low.
        6. Energy Level: High.
        7. Sliding Door Panels: Allow breakout in any position. Provides instant egress at any point in the door's movement.
      1. Doors and Fixed Sidelights: Sized to prevent pinch points at meeting stiles.
      2. Aluminum Frame:
         1. Wall Thickness: 0.125 inches (3 mm) in integral structural sections.
         2. Frame (D x W): 4-1/2 x 1-3/4 inch (114 x 44 mm).

\*\* NOTE TO SPECIFIER \*\* The transom frame is optional. Delete if not required or delete glass thickness options not required.

* + - * 1. Transom Frame: To be a pocket flush glaze gasket system.

Glass Thickness: 1/4 inch (6 mm).

Glass Thickness: 5/8 inch (16 mm).

Glass Thickness: 1 inch (25 mm).

* + - * 1. Transom Packages:

\*\* NOTE TO SPECIFIER \*\* Delete vertical transom tube option not required. The first option is standard for Bi-Part Transoms.

Vertical Transom Tube: 1.

Vertical Transom Tube: \_\_\_.

* + - 1. Aluminum Extrusion Finish: See :Factory Finish" Article in this specification.
      2. Aluminum Sidelights:
         1. Fixed sidelight "P" Panels: Non-glazed half panel.
         2. Fixed sidelight "O" Panels with corner block construction to dimension heights and widths with corresponding glazing as shown on construction documents.

\*\* NOTE TO SPECIFIER \*\* Delete stile option not required.

* + - * 1. Stile, Narrow: 2-1/8 inch (54 mm).
        2. Stile, Medium: 3-1/2 inch (89 mm).
        3. The panels are to have security glass stops.

\*\* NOTE TO SPECIFIER \*\* Delete glass thickness and rail options not required.

Glass Thickness: 1/8 inch (3 mm).

Glass Thickness: 1/4 inch (6 mm).

Glass Thickness: 3/8 inch (10 mm).

Glass Thickness: 1/2 inch (13 mm).

Glass Thickness: 5/8 inch (16 mm).

Glass Thickness: 3/4 inch (19 mm).

Glass Thickness: 7/8 inch (22 mm).

Glass Thickness: 1 inch (25 mm).

* + - * 1. Bottom Rail: 4 inch (102 mm).
        2. Bottom Rail: 10 inch (254 mm).
        3. Intermediate Rail: 1-3/4 inch (44 mm).
        4. Intermediate Rail: 4-1/2 inch (114 mm).
      1. Header Case (D x H): 4-1/2 x 6-1/2 inches (114 x 165 mm) extruded aluminum encompassing integral door track and extruded aluminum cover.
         1. Capable of supporting a single door leaf of 286 lbs (130 kg) over a span of 9 ft (2743 mm) with minimal deflection.
         2. Capable of supporting bi-parting door leaves of 264 lbs (120 kg) each over a span of 14 ft (4267 mm) with minimal deflection.
         3. Contains the TORMAX 2203.HB-UL electromechanical drive system and door mounting components.

\*\* NOTE TO SPECIFIER \*\* Delete mounting option not required.

* + - * 1. Mounting: Concealed, inline between the jambs.
        2. Mounting: Surface, face applied.
        3. Extruded Aluminum Cover: Self-locking continuous hinge, allowing cover to open flush with the top of the header case.
      1. Sliding Door Panel Suspension: From overhead tracks by four door hanger wheels.
         1. Door Hanger Wheels:

Size: 1-9/16 inch (40 mm) diameter. Wheel Material: Nylon.

Bearing Centers: Precision steel lifetime lubricated ball bearings.

* + - * 1. Sliding Doors are held on the track by two 1-1/8 inch (29 mm) diameter nylon anti-riser wheels.
        2. Roller Track: Field replaceable and isolated between a bed of rubber for smooth and quite operation.
        3. An adjustable cantilever support pivot assembly supports each door panel.

This assembly allows sliding doors to swing outward for emergency egress and spring return close without needing a lower door pivot support.

* + - * 1. Door Height Adjustment: 3/8 inches (10 mm) as required by field conditions.
      1. TORMAX 2203.HB-UL Electromechanical Sliding door Drive System:
         1. DC motor technology and programmable microprocessor control.
         2. Programmable door closed holding brake.
         3. Position Encoder: A distance measuring system that protects against external interference to guarantee maximum operational performance.
         4. Maintains optimal performance at all times by an on-board self-adjusting closed loop fully programmable microprocessor control system.

Periodically checks operating limits and adjusts compensate for temperature, wind, dust, stack pressure and outside factors which alter system performance.

* + - * 1. Provide a dedicated 120 VAC, 15 amps single-phase power supply to electrical door operator.
      1. TORMAX MCU42 Microprocessor Control Unit System: Fully programmable.
         1. Monitors TORMAX 7401 doorway holding beams, door position, electric lock position, overhead combination sensor safety output, motor temperature, condition of battery, and emergency off button.
         2. Performs continual self-diagnostic system checks and can display faults on the optional MCU32 user interface.
         3. Torque: Factory set as prescribed by ANSI A156.10. Can be field adjusted to meet or exceed ANSI A156.38 for Low Energy Sliding Doors.
         4. Automatically calibrates opening and closing check positions, and full open and full closed position of the door system.
         5. Provides the Following:

Activators: Three programmable inputs.

Key switch.

Mode of Operation: Two inputs.

Safety: Four programmable inputs.

One additional free input.

Door Position Status: Two auxiliary output signals.

Alarm.

Electrical Accessories: Interface via LIN-bus technology.

Data Communication: RS232.

Additional modules via CAN Bus interfacing.

* + - 1. TORMAX 7401 Doorway Holding Beams: Factory installed at 24 inches (610 mm) and 48 inches (1219 mm) from finished floor.
         1. Beam Interruption: Inhibits an open door from closing.

Beam is disabled in the door-closed position.

The MCU42 microprocessor monitors the performance for proper function of each doorway holding beam every 20 seconds and before each closing cycle.

If a doorway holding beam fault is detected the doors remain open.

* + - 1. TORMAX 7501 Self-Monitoring All Active Infrared Sensor: For sliding doors.
         1. Combines active infrared technology for activation and pedestrian safety in a single housing.
         2. Intelligent Unidirectional Detection Technology:

Provides energy savings with less door hold open time.

Self-adjusts in real time avoiding unnecessary door opening caused by changing environmental conditions.

Three rows of active infrared safety light curtains for perfect protection in front of and between the door leaves.

Integrated door-learn function for the inner row with an inward direction detection of up to -8 degrees.

Two outer rows of field adjustable active infrared curtains provide door activation.

Independent setting for door operation and safety detection zones for all types of sliding doors.

May also be used for sidelight safety.

Automatic real-time regulation and precise specification of monitoring area prevents ghosting caused by environmental conditions such as bright sunlight, shadows, ground reflection. Rain, snow, or fog direction detection technology for reducing hold-open times by up to 20 percent and for reducing energy loss in buildings by up to 10 percent.

* + - 1. Reverse on Obstruction Open and Close with Safety Search Circuitry:
         1. Obstructions Encountered During Closing Cycle:

Doors stop and recycle open.

Doors cycle close at creep speed.

After Five Close Attempts: Doors reopen in part at creep speed and stall.

After obstructions haves been removed and doors are reset for normal operation a new calibration run takes place and the doors return to normal operation.

* + - * 1. Obstructions Encountered While Opening:

Doors stop, reverse direction and close.

Safety Search Feature: Allows doors to cycle open at creep speed.

After Five Opening Attempts: Doors will stall.

Doors shall be manually operable when in stall mode.

After obstructions are removed and doors are reset for normal operation a new calibration run takes place and the doors shall return to normal operation.

Reverse on Obstruction Sensitivity: Adjustable and programmable via MCU32 user interface.

* + - 1. Door Motion Adjustments:

\*\* NOTE TO SPECIFIER \*\* Delete rocker switch option not required.

* + - * 1. Three position rocker switch: On / off / hold open.
        2. Three position rocker switch: On / off / exit only; used with electric locking.
        3. Rocker Switch: Two position rocker switch (on/off).

\*\* NOTE TO SPECIFIER \*\* Door motion accessories are optional. Delete the two options not required or delete the Accessories paragraph altogether.

* + - 1. Door Motion Accessories:
         1. Key Switch: Three-position.
         2. Key Switch: Four-position.
         3. TORMAX MCU32 user interface with 6-operating modes.
      2. TORMAX MCU32 User Interface: Provides auto-diagnostics and six operating modes for system configuration.
         1. Allows the following door motion adjustments:

Opening and closing speeds and forces.

Hold open time for full door opening width.

Hold open time for reduced door opening width.

Reduced door opening width size and step control.

* + - * 1. Optimizes all other motion settings such as acceleration and braking distances.
        2. Auto-diagnostics.
        3. Protection against unauthorized manipulation by means of an integrated access code and/or on/off key switch.
        4. Provides the following six operation modes.

OFF: Door opening activators are inhibited. If the doors are open when activators are inhibited, activators and safeties shall remain functional until doors are fully closed.

AUTOMATIC: Standard two-way automatic operation (open/time delay/close).

AUTORED: Doors will automatically open at a preprogrammed reduced width.

EXIT: (One-Way Traffic) Ingress side activation sensor is inhibited when doors are in the fully closed position. This shall be accomplished without the use of switches and magnets.

OPEN: The doors will power open and stay open. Door opening width is dependent on previously selected operating mode (AUTO or AUTORED).

PARK: Doors shall be used manually. Door activators and safeties are inhibited.

* + - 1. Accessories:

\*\* NOTE TO SPECIFIER \*\* Delete one of the two Energy Loss Reduction options, whichever is not required.

* + - * 1. For Energy Loss Reduction:

Nylon brush on bottom of each sliding door panel.

Double row of wool pile weather-stripping at leading edge of active sliding door.

Wool pile weather-stripping between the header and sliding door carrier.

Nylon brush between the lead stiles of the sidelights and the pivot stiles of the sliding doors.

* + - * 1. For Energy Loss Reduction in Clean Rooms: Per ISO 14644-1 Class 2, Clean Room Standards.

Silicon rubber weather-stripping on bottom of each sliding door panel.

Double row of silicon rubber weather-stripping at leading edge of active sliding door.

Silicon rubber weather-stripping between the header and sliding door carrier.

Silicon rubber weather-stripping between the lead stiles of the sidelights and the pivot stiles of the sliding doors.

* + - * 1. Electric Lock: By TORMAX.
        2. Battery backup.
        3. Door position monitoring.
        4. MDM-A I/O module.
        5. Key Switch: On/off (MCU32 user interface).
        6. Low voltage air curtain switch.
        7. Continuous Threshold with the Following Profile Type:

\*\* NOTE TO SPECIFIER \*\* Delete profile type options not required.

Profile Type: 4-1/2 inch (114 mm) wide recessed square/square.

Profile Type: 8-1/2 inch (216 mm) wide surface double bevel.

Profile Type: 6-1/2 inch (165 mm) wide surface combination square/bevel.

* + - 1. Operating Climatic Conditions: All automatic sliding door system components shall operate between -30 and 130 degrees F (-34 and 54 degrees C) in all climatic conditions.
    1. Basis or Design: TX9200SLAC Slim Line Outside Slide Door Systems with Automatic Locking as engineered, manufactured, and assembled by TORMAX USA Inc. Aluminum sliding doors, fixed sidelights (unglazed), structural header case, frame, TORMAX 2203.HB-UL electromechanical drive system, TORMAX 7401 Doorway Holding Beams and TORMAX 7501 Sensors.
       1. Factory assembled components in the header, adjusted, and tested.
       2. No field wiring or operator adjustment other than connection to job-site power.
       3. Automatic locking systems.
       4. Electromechanical Drive System: Automatically adjusts door speeds to compensate for various door sizes, weights, and environmental conditions.
       5. Automatic Locking System:
          1. Limited access security equipment consisting of electric solenoid lock and 4-1/2 inch (114 mm) intermediate mid-rail with integrated flush mount concealed vertical rod exit panic hardware.
          2. Fail-secure electric solenoid locking device, 12 VDC, with self-contained solid-state electronic control factory prepared to the inside of TX9000 header.
          3. Solenoid Lock:

Operational in the "Off" and "Exit" mode of operation.

Engaged in the "Off" mode of operation.

With unit in the "Exit" mode, the solenoid lock retracts upon receipt of an operating signal from an actuating control allowing doors to slide open.

Upon loss of the operating signal the doors slide to the closed position and the solenoid lock self-latches in the closed position, returning the system to its locked status.

During a Power Interruption: Remains locked in the "Off" and "Exit" mode of operation, securing the doors in the closed position.

Means of Egress: Accomplished by depressing the panic bar allowing sliding doors to break out for emergency egress.

At the owner's discretion, the lock may be reprogrammed at the jobsite for fail-safe type operation.

* + - 1. Aluminum Slide Door Panels:
         1. Corner block construction to dimension heights and widths with corresponding glazing as shown on construction documents.

\*\* NOTE TO SPECIFIER \*\* Delete stile options not required.

* + - * 1. Stile, Narrow: 2-1/8 inch (54 mm).
        2. Stile Medium: 3-1/2 inch (89 mm).
        3. Security Glass Stops.

\*\* NOTE TO SPECIFIER \*\* Delete glass thickness and rail options not required.

Glass Thickness: 1/8 inch (3 mm).

Glass Thickness: 1/4 inch (6 mm).

Glass Thickness: 3/8 inch (10 mm).

Glass Thickness: 1/2 inch (13 mm).

Glass Thickness: 5/8 inch (16 mm).

Glass Thickness: 3/4 inch (19 mm).

Glass Thickness: 7/8 inch (22 mm).

Glass Thickness: 1 inch (25 mm).

* + - * 1. Bottom Rail: 4 inch (102 mm).
        2. Bottom Rail: 10 inch (254 mm).
        3. Intermediate Horizontal Rail: 4-1/2 inch (114 mm) as standard.
        4. Closers: Spring return. Return panels when broken out for emergency egress.

\*\* NOTE TO SPECIFIER \*\* The following two items are optional. Delete the option not required or delete both options if neither is required.

* + - * 1. Bi-Part Sliding Door Systems: Includes a two-point maximum security deadlock. Secures the lock and latch stiles together and the lock stile to the top door carrier assembly.

Maximum Security Deadlock: Provided with key cylinder on the exterior and a thumb turn on the interior in accordance with NFPA 101.

* + - * 1. Single Sliding Door: Includes a single point maximum security deadlock securing the lock stile to the vertical jamb.

Maximum Security Deadlock: Provided with key cylinder on the exterior and a thumb turn on the interior in accordance with NFPA 101.

* + - 1. Door Operation:

\*\* NOTE TO SPECIFIER \*\* Delete slide type, operation, and energy level options not required.

* + - * 1. Slide Type: Single slide.
        2. Slide Type: Bi-part.
        3. Operation: One-way traffic.
        4. Operation: Two-way traffic.
        5. Energy Level: Low.
        6. Energy Level: High.
        7. Sliding Door Panels: Allow "breakout" in any position. Provides instant egress at any point in the door's movement.
      1. Doors and Fixed Sidelights: Sized to prevent pinch points at meeting stiles.
      2. Aluminum Frame:
         1. Wall Thickness: 0.125 inches (3 mm) in integral structural sections.
         2. Frame (D x W): 4-1/2 x 1-3/4 inch (114 x 44 mm).

\*\* NOTE TO SPECIFIER \*\* The transom frame is optional. Delete if not required or delete glass thickness options not required.

* + - * 1. Transom Frame: To be a pocket flush glaze gasket system.

Glass Thickness: 1/4 inch (6 mm).

Glass Thickness: 5/8 inch (16 mm).

Glass Thickness: 1 inch (25 mm).

* + - * 1. Transom Packages:

\*\* NOTE TO SPECIFIER \*\* Delete vertical transom tube option not required. The first option is standard for Bi-Part Transoms.

Vertical Transom Tube: 1.

Vertical Transom Tube: \_\_\_.

* + - 1. Aluminum Extrusion Finish: See :Factory Finish" Article in this specification.
      2. Aluminum Sidelights:
         1. Fixed sidelight "P" Panels: Non-glazed half panel.
         2. Fixed sidelight "O" Panels with corner block construction to dimension heights and widths with corresponding glazing as shown on construction documents.

\*\* NOTE TO SPECIFIER \*\* Delete stile option not required.

* + - * 1. Stile, Narrow: 2-1/8 inch (54 mm).
        2. Stile, Medium: 3-1/2 inch (89 mm).
        3. The "O"panels are to have security glass stops.

\*\* NOTE TO SPECIFIER \*\* Delete glass thickness and bottom rail options not required.

Glass Thickness: 1/8 inch (3 mm).

Glass Thickness: 1/4 inch (6 mm).

Glass Thickness: 3/8 inch (10 mm).

Glass Thickness: 1/2 inch (13 mm).

Glass Thickness: 5/8 inch (16 mm).

Glass Thickness: 3/4 inch (19 mm).

Glass Thickness: 7/8 inch (22 mm).

Glass Thickness: 1 inch (25 mm).

Bottom "O" Rail: 4 inch (102 mm).

Bottom "O"Rail: 10 inch (254 mm).

Intermediate "O"Rail: 4-1/2 inch (114 mm) as standard.

* + - 1. Header Case (D x H): 4-1/2 x 6-1/2 inches (114 x 165 mm) extruded aluminum encompassing integral door track and extruded aluminum cover.
         1. Capable of supporting a single door leaf of 286 lbs (130 kg) over a span of 9 ft (2743 mm) with minimal deflection.
         2. Capable of supporting bi-parting door leaves of 264 lbs (120 kg) each over a span of 14 ft (4267 mm) with minimal deflection.
         3. Contains the TORMAX 2203.HB-UL electromechanical drive system and door mounting components.

\*\* NOTE TO SPECIFIER \*\* Delete mounting option not required.

* + - * 1. Mounting: Concealed, inline between the jambs.
        2. Mounting: Surface, face applied.
        3. Extruded Aluminum Cover: Self-locking continuous hinge, allowing cover to open flush with the top of the header case.
      1. Sliding Door Panel Suspension: From overhead tracks by four door hanger wheels.
         1. Door Hanger Wheels:

Size: 1-9/16 inch (40 mm) diameter. Wheel Material: Nylon.

Bearing Centers: Precision steel lifetime lubricated ball bearings.

* + - * 1. Sliding Doors are held on the track by two 1-1/8 inch (29 mm) diameter nylon anti-riser wheels.
        2. Roller Track: Field replaceable and isolated between a bed of rubber for smooth and quite operation.
        3. An adjustable cantilever support pivot assembly supports each door panel.

This assembly allows sliding doors to swing outward for emergency egress and spring return close without needing a lower door pivot support.

* + - * 1. Door Height Adjustment: 3/8 inches (10 mm) as required by field conditions.
      1. TORMAX 2203.HB-UL Electromechanical Sliding door Drive System:
         1. DC motor technology and programmable microprocessor control.
         2. Programmable door closed holding brake.
         3. Position Encoder: A distance measuring system that protects against external interference to guarantee maximum operational performance.
         4. Maintains optimal performance at all times by an on-board self-adjusting closed loop fully programmable microprocessor control system.

Periodically checks operating limits and adjusts compensate for temperature, wind, dust, stack pressure and outside factors which alter system performance.

* + - * 1. Provide a dedicated 120 VAC, 15 amps single-phase power supply to electrical door operator.
      1. TORMAX MCU42 Microprocessor Control Unit System: Fully programmable.
         1. Monitors TORMAX 7401 doorway holding beams, door position, electric lock position, overhead combination sensor safety output, motor temperature, condition of battery, and emergency off button.
         2. Performs continual self-diagnostic system checks and can display faults on the optional MCU32 user interface.
         3. Torque: Factory set as prescribed by ANSI A156.10. Can be field adjusted to meet or exceed ANSI A156.38 for Low Energy Sliding Doors.
         4. Automatically calibrates opening and closing check positions, and full open and full closed position of the door system.
         5. Provides the Following:

Activators: Three programmable inputs.

Key switch.

Mode of Operation: Two inputs.

Safety: Four programmable inputs.

One additional free input.

Door Position Status: Two auxiliary output signals,

Alarm.

Electrical Accessories: Interface via LIN-bus technology

Data Communication: RS232.

Additional modules via CAN Bus interfacing.

* + - 1. TORMAX 7401 Doorway Holding Beams: Factory installed at 24 inches (610 mm) and 48 inches (1219 mm) from finished floor.
         1. Beam Interruption: Inhibits an open door from closing.

Beam is disabled in the door-closed position.

The MCU42 microprocessor monitors the performance for proper function of each doorway holding beam every 20 seconds and before each closing cycle.

If a doorway holding beam fault is detected the doors remain open.

* + - 1. TORMAX 7501 Self-Monitoring All Active Infrared Sensor: For sliding doors.
         1. Combines active infrared technology for activation and pedestrian safety in a single housing.
         2. Intelligent Unidirectional Detection Technology:

Provides energy savings with less door hold open time.

Self-adjusts in real time avoiding unnecessary door opening caused by changing environmental conditions.

Three rows of active infrared safety light curtains for perfect protection in front of and between the door leaves.

Integrated door-learn function for the inner row with an inward direction detection of up to -8 degrees.

Two outer rows of field adjustable active infrared curtains provide door activation.

Independent setting for door operation and safety detection zones for all types of sliding doors.

May also be used for sidelight safety.

Automatic real-time regulation and precise specification of monitoring area prevents ghosting caused by environmental conditions such as bright sunlight, shadows, ground reflection. Rain, snow, or fog direction detection technology for reducing hold-open times by up to 20 percent and for reducing energy loss in buildings by up to 10 percent.

* + - 1. Reverse on Obstruction Open and Close with Safety Search Circuitry:
         1. Obstructions Encountered During Closing Cycle:

Doors stop and recycle open.

Doors cycle close at creep speed.

After Five Close Attempts: Doors reopen in part at creep speed and stall.

After obstructions haves been removed and doors are reset for normal operation a new calibration run takes place and the doors return to normal operation.

* + - * 1. Obstructions Encountered While Opening:

Doors stop, reverse direction and close.

Safety Search Feature: Allows doors to cycle open at creep speed.

After Five Opening Attempts: Doors will stall.

Doors shall be manually operable when in stall mode.

After obstructions are removed and doors are reset for normal operation a new calibration run takes place and the doors shall return to normal operation.

Reverse on Obstruction Sensitivity: Adjustable and programmable via MCU32 user interface.

* + - 1. Door Motion Adjustments: Three position rocker switch: On / off / exit only.

\*\* NOTE TO SPECIFIER \*\* Door motion accessories are optional. Delete the two options not required or delete the entire paragraph if none of the options are required.

* + - 1. Door Motion Accessories:
         1. Key Switch: Three-position,
         2. Key Switch: Four-position.
         3. TORMAX MCU32 user interface with 6-operating modes.
      2. TORMAX MCU32 User Interface: Provides auto-diagnostics and six operating modes for system configuration.
         1. Allows the following door motion adjustments:

Opening and closing speeds and forces.

Hold open time for full door opening width.

Hold open time for reduced door opening width.

Reduced door opening width size and step control.

* + - * 1. Optimizes all other motion settings such as acceleration and braking distances.
        2. Auto-diagnostics.
        3. Protection against unauthorized manipulation by means of an integrated access code and/or on/off key switch.
        4. Provides the following six operation modes.

OFF: Door opening activators are inhibited. If the doors are open when activators are inhibited, activators and safeties shall remain functional until doors are fully closed.

AUTOMATIC: Standard two-way automatic operation (open/time delay/close).

AUTORED: Doors will automatically open at a preprogrammed reduced width.

EXIT: (One-Way Traffic) Ingress side activation sensor is inhibited when doors are in the fully closed position. This shall be accomplished without the use of switches and magnets.

OPEN: The doors will power open and stay open. Door opening width is dependent on previously selected operating mode (AUTO or AUTORED).

PARK: Doors shall be used manually. Door activators and safeties are inhibited.

* + - 1. Electric Lock: By TORMAX.

\*\* NOTE TO SPECIFIER \*\* Delete accessories options not required.

* + - 1. Accessories:

\*\* NOTE TO SPECIFIER \*\* Delete one of the two following Energy Loss Reduction paragraphs, which ever one is not required, or delete both if Energy Loss Reduction is not required.

* + - * 1. For Energy Loss Reduction:

Nylon brush on bottom of each sliding door panel.

Double row of wool pile weather-stripping at leading edge of active sliding door.

Wool pile weather-stripping between the header and sliding door carrier.

Nylon brush between the lead stiles of the sidelights and the pivot stiles of the sliding doors.

* + - * 1. For Energy Loss Reduction in Clean Rooms: Per ISO 14644-1 Class 2, Clean Room Standards

Silicon rubber weather-stripping on bottom of each sliding door panel.

Double row of silicon rubber weather-stripping at leading edge of active sliding door.

Silicon rubber weather-stripping between the header and sliding door carrier.

Silicon rubber weather-stripping between the lead stiles of the sidelights and the pivot stiles of the sliding doors.

* + - * 1. Battery backup.
        2. Door position monitoring.
        3. MDM-A I/O module.
        4. Key Switch: On/off (MCU32 user interface).
        5. Low voltage air curtain switch and continuous threshold.
        6. Continuous Threshold with Profile:

\*\* NOTE TO SPECIFIER \*\* Delete profile type options not required.

Profile Type: 4-1/2 inch (114 mm) wide recessed square/square.

Profile Type: 8-1/2 inch (216 mm) wide surface double bevel.

Profile Type: 6-1/2 inch (165 mm) wide surface combination square/bevel.

* + - 1. Operating Climatic Conditions: All automatic sliding door system components shall operate between -30 and 130 degrees F (-34 and 54 degrees C) in all climatic conditions.
    1. TORMAX Series TX9300 Inside Slide: System consists of sliding aluminum doors and sidelights, header, jambs, locking hardware, TORMAX iMotion direct drive system, guide threshold track, TORMAX 7501 Sensors, and 7401 Doorway Holding Beams. All components factory assembled in the header, adjusted, and tested. No field wiring or operator adjustment shall be required other than connection to the job-site power.
       1. Sliding Aluminum Doors: Provide panels with corner block construction to sizes indicated. Sliding door panels allow "breakout" to the full open position and provides instant egress at any point in the door's movement. Provide with spring return closers to return the panel when broken out for emergency egress. Each door panel includes full-length interlocking extrusion that securely latches the swing out panels to the sliding panels in the fully closed position. Size doors and swing-out sidelights to prevent pinch points at meeting stiles.
          1. Door Type:

\*\* NOTE TO SPECIFIER \*\* Delete stile and rail options not required.

Narrow Stile: 2-1/8 inch (59 mm).

Medium Stile:3-1/2 inch (89 mm).

Bottom Rail: 4 inch (102 mm).

Bottom Rail: 10 inch (254 mm).

\*\* NOTE TO SPECIFIER \*\* The 1-3/4 inch (44 mm) Intermediate Horizontal Rail is not an option if the Automatic Locking Hardware paragraph is required. only the 4-1/2 inch (114 mm) option is available.

Intermediate Horizontal Rail: 1-3/4 inch (44 mm).

Intermediate Horizontal Rail: 4-1/2 inch (114 mm).

* + - * 1. Door Operation:

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

Single slide.

Bi-part slide.

* + - * 1. Traffic Operation:

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

For one-way traffic.

For two-way traffic.

* + - * 1. Glazing Thickness: Doors are field glazed as specified in Section 08 83 13 - Mirrored Glass Glazing. Provide with security glass stops for the following glass thickness:

\*\* NOTE TO SPECIFIER \*\* Delete glass thickness options not required.

Glass Thickness: 1/8 inch (3 mm).

Glass Thickness: 1/4 inch (6 mm).

Glass Thickness: 3/8 inch (10 mm).

Glass Thickness: 1/2 inch (13 mm).

Glass Thickness: 5/8 inch (16 mm).

Glass Thickness: 3/4 inch (19 mm).

Glass Thickness: 7/8 inch (22 mm).

Glass Thickness: 1 inch (25 mm).

\*\* NOTE TO SPECIFIER \*\* Delete locking hardware paragraph if not required.

* + - * 1. Locking Hardware: Provide with key cylinder on the exterior and a thumb turn on the interior in accordance with NFPA 101.

\*\* NOTE TO SPECIFIER \*\* Select one of the following paragraphs as required for the project and delete the one not required.

Bi-part sliding doors provided with a two-point Maximum Security deadlock.

Single sliding door provided with a single point Maximum Security deadlock.

\*\* NOTE TO SPECIFIER \*\* Delete if the Locking Hardware paragraph is not required. If locking hardware paragraph is required then keep the Automatic Locking Hardware paragraph if it is required as well.

* + - * 1. Automatic Locking Hardware: Limited Access security consists of electric solenoid lock and 4-1/2 inch (114 mm) intermediate midrail with integrated flush mount concealed vertical rod exit panic hardware. Electric solenoid locking is a 115 VAC fail-secure solenoid with self-contained solid-state electronic control factory installed inside TX9000 header. Solenoid lock is operational in the "Off" and "Exit" mode of operation. Lock is engaged in the "Off" mode of operation and with the unit in the "Exit" mode, solenoid lock retracts upon receipt of an operate signal from an actuating control allowing doors to open. Upon loss of signal the doors will slide closed. Solenoid lock shall self-latch in the closed position, returning system to locked status. During a power interruption, solenoid lock shall remain locked in the "Off" and "Exit" mode of operation, securing the doors in the closed position. Egress is provided with flush mount panic bar allowing sliding doors to break out. Lock may be reprogrammed at the job-site for fail-safe type operation.

\*\* NOTE TO SPECIFIER \*\* The two items below are optional. Select one of the following two or none if not required.

Bi-part sliding doors provided with a two-point Maximum Security deadlock.

Single sliding door provided with a single point Maximum Security deadlock.

* + - 1. Aluminum Frame:
         1. Wall Thickness: 0.125 inches (3 mm) in integral structural sections.
         2. Frame (D x W): 4-1/2 x 1-3/4 inch (114 x 44 mm).

\*\* NOTE TO SPECIFIER \*\* The Transom frame is optional. Delete transom frame if not required or delete glass thickness options not required.

* + - * 1. Transom Frame: To be a pocket flush glaze gasket system.

Glass Thickness: 1/4 inch (6 mm).

Glass Thickness: 5/8 inch (16 mm).

Glass Thickness: 1 inch (25 mm).

* + - * 1. Transom Packages:

\*\* NOTE TO SPECIFIER \*\* Delete vertical transom tube option not required. The first option is standard for Bi-Part Transoms.

Vertical Transom Tube: 1.

Vertical Transom Tube: \_\_\_.

\*\* NOTE TO SPECIFIER \*\* Select the following optional sidelight paragraph if required for the project and delete if not required.

* + - 1. Aluminum Sidelights: Provide sidelight panels with corner block construction to sizes indicated. Each panel shall include full-length interlocking extrusion that securely latches the swing out panels to the sliding panels in the fully closed position. Sidelights shall swing out and allow the sliding doors to "breakout" to the full open position for instant egress at any point in the door's movement per NFPA 101. Sidelight panels shall contain a hydraulic dampener to control the swing of the panel in the event of a breakaway condition.
         1. Type:

\*\* NOTE TO SPECIFIER \*\* Delete stile and rail options not required.

Narrow Stile: 2-1/8 inch (59 mm).

Medium Stile:3-1/2 inch (89 mm).

Bottom Rail: 4 inch (102 mm).

Bottom Rail: 10 inch (254 mm).

Intermediate Horizontal Rail: 1-3/4 inch (44 mm).

Intermediate Horizontal Rail: 4-1/2 inch (114 mm).

* + - * 1. Glazing Thickness: Sidelights are field glazed as specified in Section 08 83 13 - Mirrored Glass Glazing. Provide with security glass stops for the following glass thickness:

\*\* NOTE TO SPECIFIER \*\* Delete glass thickness options not required.

Glass Thickness: 1/8 inch (3 mm).

Glass Thickness: 1/4 inch (6 mm).

Glass Thickness: 3/8 inch (10 mm).

Glass Thickness: 1/2 inch (13 mm).

Glass Thickness: 5/8 inch (16 mm).

Glass Thickness: 3/4 inch (19 mm).

Glass Thickness: 7/8 inch (22 mm).

Glass Thickness: 1 inch (25 mm).

* + - 1. Header Case: Aluminum extruded header contains the TORMAX iMotion direct drive system and door mounting components over a span of 18 feet (5486 mm) with minimal deflection.

\*\* NOTE TO SPECIFIER \*\* Select one of the following two Direct Drive paragraphs as required for the project and delete the one not required.

* + - * 1. iMotion 2301 Direct Drive: For use with sliding one single door leaf weighing up to 330 pounds (150 kg) or two bi-parting door leafs weighing up to 286 pounds (130 kg) each.

Concealed Mount Header: Extruded aluminum, 7-15/16 inches wide by 7-3/4 inches high (202 mm by 197 mm). Provide with integral extruded aluminum cover with continuous self-locking hinge allowing it to open approximately flush with the top of the header.

* + - * 1. iMotion 2401 Direct Drive: For use with sliding one single door leaf weighing up to 992 pounds (450 kg) or two bi-parting door leafs weighing up to 661 pounds (300 kg) each.

Concealed Mount Header: Extruded aluminum, 9-1/8 inches wide by 7-3/4 inches high (232 mm by 197 mm). Provide with integral extruded aluminum cover with continuous self-locking hinge allowing it to open approximately flush with the top of the header.

* + - 1. Door Hanger Wheels:
         1. Each door is suspended from an overhead track by nylon wheels with steel lifetime lubricated ball bearings. Roller track is field replaceable and isolated in rubber for smooth and quite operation. Each door supported by a factory adjusted cantilever support pivot assembly that allows doors to swing outward for emergency egress and spring return closed without the need for a lower door pivot support. The door height has an adjustment of 1/2 inch (13 mm).

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

Nylon Wheels, iMotion 2301: Provide four 2-1/2 inch (64 mm) diameter wheels, held on track by two 7/8 inch (22 mm) diameter nylon anti-riser wheels.

Nylon Wheels, iMotion 2401: Provide eight 2-1/2 inch (64 mm) diameter nylon wheels, held on track by four 7/8 inch (22 mm) diameter nylon anti-riser wheels.

* + - 1. Guide Threshold Track: Provide aluminum threshold track to guide the slide panels from close to open and open to close. Provide in the following profile.

\*\* NOTE TO SPECIFIER \*\* Delete the profile and threshold options not required. There cannot be more than one Profile and Threshold.

* + - * 1. Profile: 4-1/2 inch (114 mm) wide recessed square/square.

Threshold: Continuous full width.

Threshold: Partial (under sidelight panel only).

* + - * 1. Profile: 8-1/2 inch (216 mm) wide surface double bevel.

Threshold: Continuous full width.

Threshold: Partial (under sidelight panel only).

* + - * 1. Profile: 6-1/2 inch (165 mm) wide surface combination bevel/square.

Threshold: Continuous full width.

Threshold: Partial (under sidelight panel only).

* + - 1. Accessories: Provide with following accessories:

\*\* NOTE TO Specifier\*\* Select one of the following two paragraphs and delete one not required.

* + - * 1. Weather-stripping: Provide nylon brush on the bottom of each sliding door panel; two rows of wool pile weather-stripping at the leading edge of the active sliding door and back edge of the sidelight panel; wool pile weather-stripping between the header, sidelight top rail and sliding door carrier; and wool pile weather-stripping between the sidelight lead stile and sliding door rear stile.
        2. Clean Room Seals: Per ISO 14644-1 Cless 2. Provide two rows of rubber vinyl weather-stripping at the leading edge of the active sliding door and rear stile of the swing out panel; rubber vinyl weather-stripping between the header and sliding door carrier and sidelight top rail; between the lead stile of the sidelight and pivot stile of the sliding door, a vinyl sweep on each sliding and swinging door bottom rail.

\*\* NOTE TO SPECIFIER \*\* The following paragraphs are optional. Select those required and delete ones not required. Electric Lock, is only an option when locking hardware is required. Electric lock is standard when automatic locking hardware is required.

* + - * 1. Electric Lock by TORMAX.
        2. Battery backup.
        3. Door position monitoring.
        4. I/O module.
        5. Key switch. (user interface)
        6. Key Switch: 4-position.
        7. Low voltage air curtain switch.
    1. TORMAX Series TX9300 Storm Impact Rated Inside Slide: System consists of sliding aluminum doors and sidelights, header, jambs, locking hardware, TORMAX iMotion direct drive system, TORMAX 7501 Sensors, and 7401 Doorway Holding Beams. All components factory assembled in the header, adjusted, and tested. No field wiring or operator adjustment required other than connection to job-site power.
       1. Performance:
          1. Conforms to Miami-Dade County Building Code Compliance Office NOA NO 20-0720.04 and is rated for Large and Small Missile Impact Resistance. Maximum bi-parting door size is 15 feet 4 inches wide by 8 feet 8 inches high (4674 mm wide by 2642 mm high) and maximum single slide door size is 7 feet 9-3/16 inches wide by 8 feet 8 inches high (2367 mm wide by 2642 mm high) at an allowable pressure of plus 55 PSF / minus 55 PSF.
          2. The maximum allowable air infiltration rate is 1.2 cfm/ft2 in accordance with ASTM test methods.
       2. Sliding Aluminum Doors: Provide door panels with through bolt reinforced construction to sizes indicated. Sliding door panels shall allow "breakout" to the full open position to provide instant egress at any point in the door's movement. Provide with spring return closers to return the panel when broken out for emergency egress. Doors and swing-out sidelights shall be sized to prevent pinch points at meeting stiles.
          1. Door Type:

\*\* NOTE TO SPECIFIER \*\* Delete stile and rail options not required.

Narrow Stile: 2-1/8 inch (59 mm).

Medium Stile:3-1/2 inch (89 mm).

Bottom Rail: 4 inch (102 mm).

Bottom Rail: 10 inch (254 mm).

* + - * 1. Door Operation:

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

Single slide.

Bi-part slide.

* + - * 1. Traffic Operation:

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

For one-way traffic.

For two-way traffic.

* + - * 1. Glazing: Doors are field glazed with Oldcastle Glass laminated 5/16 inch (8mm) heat strengthened StormGlass with interior wet glazed with DOW 995 silicone as specified in Section 08 83 13 - Mirrored Glass Glazing. Provide security glass stops with vinyl bead interior and exterior.
        2. Locking Hardware: Provide with key cylinder on the exterior and a thumb turn on the interior in accordance with NFPA 101.

\*\* NOTE TO SPECIFIER \*\* Select one of the following paragraphs as required for the project and delete the one not required.

Bi-part sliding doors provided with a two-point Maximum Security deadlock and seven flush bolts.

Single sliding door provided with a two-point Maximum Security deadlock and three flush bolts.

* + - 1. Aluminum Frame and Extrusions: Provide with minimum .125 inch (3 mm) wall thickness in integral structural sections. Frame shall be 4-1/2 inches (114 mm) deep by 1-3/4 inches wide (44 mm) section.
      2. Aluminum Sidelights: Provide sidelight panels with through bolt reinforced construction to sizes indicated.
         1. Type:

\*\* NOTE TO SPECIFIER \*\* Delete stile and rail options not required.

Narrow Stile: 2-1/8 inch (59 mm).

Medium Stile:3-1/2 inch (89 mm).

Bottom Rail: 4 inch (102 mm).

Bottom Rail: 10 inch (254 mm).

* + - * 1. Glazing: Sidelights are field glazed with Oldcastle Glass laminated 5/16 inch (8 mm) heat strengthened StormGlass with interior wet glazed with DOW 995 silicone as specified in Section 08 83 13 - Mirrored Glass Glazing. Provide security glass stops with vinyl bead interior and exterior.
      1. Header Case: Aluminum extruded header contains the TORMAX iMotion direct drive system and door mounting components over a span of 15 feet 4 inches (4674 mm) with minimal deflection.
         1. iMotion 2301 Direct Drive: For use with sliding one single door leaf weighing up to 330 pounds (150 kg) or two bi-parting door leafs weighing up to 286 pounds (130 kg) each.

Concealed Mount Header: Extruded aluminum, 8 inches wide by 7-7/8 inches high (203 mm by 200 mm). Provide with extruded aluminum hinged cover allowing it to open approximately flush with the top of the header.

* + - 1. Door Hanger Wheels:
         1. Each door is suspended from an overhead track by nylon wheels with steel lifetime lubricated ball bearings. iMotion 2301 requires four 2-1/2 inch (64 mm) diameter wheels and held on track by two 7/8 inch (22 mm) diameter nylon anti-riser wheels. Roller track is field replaceable and isolated in rubber for smooth and quite operation. Each door supported by a factory adjusted cantilever support pivot assembly that allows doors to swing outward for emergency egress and spring return closed without the need for a lower door pivot support. The door height has an adjustment of 1/2 inch (13 mm).
      2. Provide with Continuous Threshold Jamb to Jamb with Profile:

\*\* NOTE TO SPECIFIER \*\* Delete profile type options not required.

Profile Type: 4-1/2 inch (114 mm) wide recessed square/square.

Profile Type: 8-1/2 inch (216 mm) wide surface double bevel.

Profile Type: 6-1/2 inch (165 mm) wide surface combination square/bevel.

* + - 1. Accessories: Provide with following accessories:
         1. Weather-stripping: Provide one row of nylon brush on the bottom of each sliding door panel; two rows of nylon brush on the bottom of each swing out panel, pile-fin single wool weather-stripping at the leading edge of the active sliding door; pile-fin wool weather-stripping between the header and sliding door carrier; and nylon brush between the lead stiles of the sidelights and the pivot stiles of sliding doors.

\*\* NOTE TO SPECIFIER \*\* The following paragraphs are optional. Select those required and delete ones not required.

* + - * 1. Electric Lock by TORMAX.
        2. Battery backup.
        3. Door position monitoring.
        4. I/O module.
        5. Key switch. (user interface)
        6. Key Switch: 4-position.
        7. Low voltage air curtain switch.
    1. TORMAX Series TX9300 Storm Non-Impact Rated Inside Slide: System with reinforcements consists of sliding aluminum doors and sidelights, header, jambs, locking hardware, TORMAX iMotion direct drive system, TORMAX 7501 Sensors, and 7401 Doorway Holding Beams. All components factory assembled in the header, adjusted, and tested. No field wiring or operator adjustment required other than connection to job-site power.
       1. Performance: Conforms to Miami-Dade County Building Code Compliance Office NOA NO 20-0720.05.

\*\* NOTE TO SPECIFIER \*\* Delete whichever of the following paragraphs are not required.

* + - * 1. Maximum bi-parting door size of 15 feet 4 inches wide by 8 feet 8 inches high (4674 mm wide by 2642 mm high) and a maximum single slide door size of 7 feet 9-3/16 inches wide by 8 feet 8 inches high (2367 mm wide by 2642 mm high) at an allowable pressure of plus 62 PSF / minus 62 PSF.
        2. Maximum Single Sliding Door Size: 7 ft 9-3/16 inches (2367 mm) wide by 8 ft 8 inches (2642 mm) high.
      1. Sliding Aluminum Doors: Provide door panels with through bolt reinforced construction to sizes indicated. Sliding door panels shall allow "breakout" to the full open position to provide instant egress at any point in the door's movement. Provide with spring return closers to return the panel when broken out for emergency egress. Doors and swing-out sidelights shall be sized to prevent pinch points at meeting stiles.
         1. Door Type:

\*\* NOTE TO SPECIFIER \*\* Delete stile and rail options not required.

Narrow Stile: 2-1/8 inch (59 mm).

Medium Stile:3-1/2 inch (89 mm).

Bottom Rail: 4 inch (102 mm).

Bottom Rail: 10 inch (254 mm).

* + - * 1. Door Operation:

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

Single slide.

Bi-part slide.

* + - * 1. Traffic Operation:

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

For one-way traffic.

For two-way traffic.

* + - * 1. Glazing: Doors are field glazed with 1/4 inch (6 mm) tempered glass as specified in Section 08 83 13 - Mirrored Glass Glazing. Provide security glass stops with vinyl bead interior and exterior. Interior stops secured in place with additional screws.
        2. Locking Hardware: Provide with key cylinder on the exterior and a thumb turn on the interior in accordance with NFPA 101.

\*\* NOTE TO SPECIFIER \*\* Select one of the following paragraphs as required for the project and delete the one not required.

Bi-part sliding doors provided with a two-point Maximum Security deadlock and seven flush bolts.

Single sliding door provided with a two-point Maximum Security deadlock and three flush bolts.

* + - 1. Aluminum Frame and Extrusions: Provide with minimum .125 inch (3 mm) wall thickness in integral structural sections. Frame shall be 4-1/2 inches (114 mm) deep by 1-3/4 inches wide (44 mm) section.
      2. Aluminum Sidelights: Provide sidelight panels with through bolt reinforced construction to sizes indicated.
         1. Type:

\*\* NOTE TO SPECIFIER \*\* Delete stile and rail options not required.

Narrow Stile: 2-1/8 inch (59 mm).

Medium Stile:3-1/2 inch (89 mm).

Bottom Rail: 4 inch (102 mm).

Bottom Rail: 10 inch (254 mm).

* + - * 1. Glazing: Sidelights are field glazed with 1/4 inch (6 mm) tempered glass as specified in Section 08 83 13 - Mirrored Glass Glazing. Provide security glass stops with vinyl bead interior and exterior. Interior stops secured in place with additional screws.
      1. Header Case: Aluminum extruded header contains the TORMAX iMotion direct drive system and door mounting components over a span of 15 feet 4 inches (4674 mm) with minimal deflection.
         1. iMotion 2301 Direct Drive: For use with sliding one single door leaf weighing up to 330 pounds (150 kg) or two bi-parting door leafs weighing up to 286 pounds (130 kg) each.

Concealed Mount Header: Extruded aluminum, 8 inches wide by 7-7/8 inches high (203 mm by 200 mm). Provide with extruded aluminum hinged cover allowing it to open approximately flush with the top of the header.

* + - 1. Door Hanger Wheels:
         1. Each door is suspended from an overhead track by nylon wheels with steel lifetime lubricated ball bearings. iMotion 2301 requires four 2-1/2 inch (64 mm) diameter wheels and held on track by two 7/8 inch (22 mm) diameter nylon anti-riser wheels. Roller track is field replaceable and isolated in rubber for smooth and quite operation. Each door supported by a factory adjusted cantilever support pivot assembly that allows doors to swing outward for emergency egress and spring return closed without the need for a lower door pivot support. The door height has an adjustment of 1/2 inch (13 mm).
      2. Provide with Continuous Threshold Jamb to Jamb with Profile:

\*\* NOTE TO SPECIFIER \*\* Delete profile type options not required.

* + - * 1. Profile Type: 4-1/2 inch (114 mm) wide recessed square/square.
        2. Profile Type: 8-1/2 inch (216 mm) wide surface double bevel.
        3. Profile Type: 6-1/2 inch (165 mm) wide surface combination square/bevel.
      1. Accessories: Provide with following accessories:
         1. Weather-stripping: Provide one row nylon brush on the bottom of each sliding door panel; two rows of nylon brush on the bottom of each sidelight panel, pile-fin single wool weather-stripping at the leading edge of the active sliding door; pile-fin wool weather-stripping between the header and sliding door carrier; and nylon brush between the lead stiles of the sidelights and the pivot stiles of sliding doors.

\*\* NOTE TO SPECIFIER \*\* The following paragraphs are optional. Delete options not required.

* + - * 1. Electric Lock by TORMAX.
        2. Battery backup.
        3. Door position monitoring.
        4. I/O module.
        5. Key switch. (user interface)
        6. Key Switch: 4-position.
        7. Low voltage air curtain switch.
    1. Basis or Design: TX9300SL Slim Line Inside Slide Door Systems as engineered, manufactured, and assembled by TORMAX USA Inc. Aluminum sliding doors, swing out sidelights (unglazed), structural header case, frame, TORMAX 2203.HB-UL electromechanical drive system, TORMAX 7401 Doorway Holding Beams and TORMAX 7501 Sensors.
       1. Factory assembled components in the header, adjusted, and tested.
       2. No field wiring or operator adjustment other than connection to job-site power.
       3. Electromechanical Drive System: Automatically adjusts door speeds to compensate for various door sizes, weights, and environmental conditions.
       4. Aluminum Slide Door Panels:
          1. Corner block construction to dimension heights and widths with corresponding glazing as shown on construction documents.

\*\* NOTE TO SPECIFIER \*\* Delete stile and rail options not required.

* + - * 1. Stile, Narrow: 2-1/8 inch (54 mm).
        2. Stile Medium: 3-1/2 inch (89 mm).
        3. Bottom Rail: 4 inch (102 mm).
        4. Bottom Rail: 10 inch (254 mm).
        5. Intermediate Horizontal Rail: 1-3/4 inch (44 mm).
        6. Intermediate Horizontal Rail: 4-1/2 inch (114 mm).
        7. Security Glass Stops.

\*\* NOTE TO SPECIFIER \*\* Delete glass thickness options not required.

Glass Thickness: 1/8 inch (3 mm).

Glass Thickness: 1/4 inch (6 mm).

Glass Thickness: 3/8 inch (10 mm).

Glass Thickness: 1/2 inch (13 mm).

Glass Thickness: 5/8 inch (16 mm).

Glass Thickness: 3/4 inch (19 mm).

Glass Thickness: 7/8 inch (22 mm).

Glass Thickness: 1 inch (25 mm).

* + - * 1. Closers: Spring return. Return panels when broken out for emergency egress.
      1. Locking Hardware:

\*\* NOTE TO SPECIFIER \*\* Delete one of the first two following paragraphs, whichever is not required.

* + - * 1. Bi-Part Sliding Door Systems: Includes a two-point maximum security deadlock. Secures the lock and latch stiles together and the lock stile to the top door carrier assembly.

Maximum Security Deadlock: Provided with key cylinder on the exterior and a thumb turn on the interior in accordance with NFPA 101.

* + - * 1. Single Sliding Door: Includes a single point maximum security deadlock securing the lock stile to the vertical jamb.

Maximum Security Deadlock: Provided with key cylinder on the exterior and a thumb turn on the interior in accordance with NFPA 101.

* + - * 1. Each door panel includes a full-length interlocking extrusion that securely latches the swing out panels to the sliding panels in the fully closed position.
      1. Door Operation:

\*\* NOTE TO SPECIFIER \*\* Delete slide type, operation, and energy level options not required.

* + - * 1. Slide Type: Single slide.
        2. Slide Type: Bi-part.
        3. Operation: One-way traffic.
        4. Operation: Two-way traffic.
        5. Energy Level: Low.
        6. Energy Level: High.
        7. Sliding Door Panels: Allow "breakout" in any position. Provides instant egress at any point in the door's movement.
      1. Doors and Swing Out Sidelights: Sized to prevent pinch points at meeting stiles.
      2. Aluminum Frame:
         1. Wall Thickness: 0.125 inches (3 mm) in integral structural sections.
         2. Frame (D x W): 4-1/2 x 1-3/4 inch (114 x 44 mm).

\*\* NOTE TO SPECIFIER \*\* The transom frame is optional. Delete transom frame if not required or delete glass thickness options not required.

* + - * 1. Transom Frame: To be a pocket flush glaze gasket system.

Glass Thickness: 1/4 inch (6 mm).

Glass Thickness: 5/8 inch (16 mm).

Glass Thickness: 1 inch (25 mm).

* + - * 1. Transom Packages:

\*\* NOTE TO SPECIFIER \*\* Delete vertical transom tube option not required. The first option is standard with Bi-Part Package.

Vertical Transom Tube: 1.

Vertical Transom Tube: \_\_\_.

* + - 1. Aluminum Extrusion Finish: See :Factory Finish" Article in this specification.
      2. Aluminum Sidelights:
         1. Swing out sidelight panels with corner block construction to dimension heights and widths with corresponding glazing as shown on construction documents.

\*\* NOTE TO SPECIFIER \*\* Delete stile and rail options not required.

* + - * 1. Stile, Narrow: 2-1/8 inch (54 mm).
        2. Stile, Medium: 3-1/2 inch (89 mm).
        3. Bottom Rail: 4 inch (102 mm).
        4. Bottom Rail: 10 inch (254 mm).
        5. Intermediate Rail: 1-3/4 inch (44 mm).
        6. Intermediate Rail: 4-1/2 inch (114 mm).
        7. The panels are to have security glass stops.

\*\* NOTE TO SPECIFIER \*\* Delete glass thickness options not required.

Glass Thickness: 1/8 inch (3 mm).

Glass Thickness: 1/4 inch (6 mm).

Glass Thickness: 3/8 inch (10 mm).

Glass Thickness: 1/2 inch (13 mm).

Glass Thickness: 5/8 inch (16 mm).

Glass Thickness: 3/4 inch (19 mm).

Glass Thickness: 7/8 inch (22 mm).

Glass Thickness: 1 inch (25 mm).

* + - * 1. Each panel includes a full-length interlocking extrusion that securely latches the swing out panels to the sliding panels in the fully closed position.

Sidelight panels swing out and allow sliding doors to "breakout" to the fully open position for instant egress at any point in the door's movement per NFPA 101.

Panels contain a hydraulic dampener to control the swing of the panel in the event of a breakaway condition.

* + - 1. Header Case (D x H): 4-1/2 x 6-1/2 inches (114 x 165 mm) extruded aluminum encompassing integral door track and extruded aluminum cover.
         1. Capable of supporting a single door leaf of 286 lbs (130 kg) over a span of 9 ft (2743 mm) with minimal deflection.
         2. Capable of supporting bi-parting door leaves of 264 lbs (120 kg) each over a span of 14 ft (4267 mm) with minimal deflection.
         3. Contains the TORMAX 2203.HB-UL electromechanical drive system and door mounting components.
         4. Mounting: Concealed, inline between the jambs.
         5. Extruded Aluminum Cover: Self-locking continuous hinge, allowing cover to open flush with the top of the header case.
      2. Sliding Door Panel Suspension: From overhead tracks by four door hanger wheels.
         1. Door Hanger Wheels:

Size: 1-9/16 inch (40 mm) diameter. Wheel Material: Nylon.

Bearing Centers: Precision steel lifetime lubricated ball bearings.

* + - * 1. Sliding Doors are held on the track by two 1-1/8 inch (29 mm) diameter nylon anti-riser wheels.
        2. Roller Track: Field replaceable and isolated between a bed of rubber for smooth and quite operation.
        3. An adjustable cantilever support pivot assembly supports each door panel.

This assembly allows sliding doors to swing outward for emergency egress and spring return close without needing a lower door pivot support.

* + - * 1. Door Height Adjustment: 3/8 inches (10 mm) as required by field conditions.
      1. Guide Aluminum Threshold Track: Guides the slide panels from close to open and open to close.

\*\* NOTE TO SPECIFIER \*\* Delete the two profile options not required and then delete the threshold option not required.

* + - * 1. Profiles: 4-1/2 inch (114 mm) wide recessed square/square.

Threshold: Continuous full width.

Threshold: Partial (under sidelight panel only).

* + - * 1. Profiles: 8-1/2 inch (216 mm) wide surface double bevel.

Threshold: Continuous full width.

Threshold: Partial (under sidelight panel only).

* + - * 1. Profiles: 6-1/2 inch (165 mm) wide surface combination bevel/square.

Threshold: Continuous full width.

Threshold: Partial (under sidelight panel only).

* + - 1. TORMAX 2203.HB-UL Electromechanical Sliding door Drive System:
         1. DC motor technology and programmable microprocessor control.
         2. Programmable door closed holding brake.
         3. Position Encoder: A distance measuring system that protects against external interference to guarantee maximum operational performance.
         4. Maintains optimal performance at all times by an on-board self-adjusting closed loop fully programmable microprocessor control system.

Periodically checks operating limits and adjusts compensate for temperature, wind, dust, stack pressure and outside factors which alter system performance.

* + - * 1. Provide a dedicated 120 VAC, 15 amps single-phase power supply to electrical door operator.
      1. TORMAX MCU42 Microprocessor Control Unit System: Fully programmable.
         1. Monitors TORMAX 7401 doorway holding beams, door position, electric lock position, overhead combination sensor safety output, motor temperature, condition of battery, and emergency off button.
         2. Performs continual self-diagnostic system checks and can display faults on the optional MCU32 user interface.
         3. Torque: Factory set as prescribed by ANSI A156.10. Can be field adjusted to meet or exceed ANSI A156.38 for Low Energy Sliding Doors.
         4. Automatically calibrates opening and closing check positions, and full open and full closed position of the door system.
         5. Provides the Following:

Activators: Three programmable inputs.

Key switch.

Mode of Operation: Two inputs.

Safety: Four programmable inputs.

One additional free input.

Door Position Status: Two auxiliary output signals.

Alarm.

Electrical Accessories: Interface via LIN-bus technology.

Data Communication: RS232.

Additional modules via CAN Bus interfacing.

* + - 1. TORMAX 7401 Doorway Holding Beams: Factory installed at 24 inches (610 mm) and 48 inches (1219 mm) from finished floor.
         1. Beam Interruption: Inhibits an open door from closing.

Beam is disabled in the door-closed position.

The MCU42 microprocessor monitors the performance for proper function of each doorway holding beam every 20 seconds and before each closing cycle.

If a doorway holding beam fault is detected the doors remain open.

* + - 1. TORMAX 7501 Self-Monitoring All Active Infrared Sensor: For sliding doors.
         1. Combines active infrared technology for activation and pedestrian safety in a single housing.
         2. Intelligent Unidirectional Detection Technology:

Provides energy savings with less door hold open time.

Self-adjusts in real time avoiding unnecessary door opening caused by changing environmental conditions.

Three rows of active infrared safety light curtains for perfect protection in front of and between the door leaves.

Integrated door-learn function for the inner row with an inward direction detection of up to -8 degrees.

Two outer rows of field adjustable active infrared curtains provide door activation.

Independent setting for door operation and safety detection zones for all types of sliding doors.

May also be used for sidelight safety.

Automatic real-time regulation and precise specification of monitoring area prevents ghosting caused by environmental conditions such as bright sunlight, shadows, ground reflection. Rain, snow, or fog direction detection technology for reducing hold-open times by up to 20 percent and for reducing energy loss in buildings by up to 10 percent.

* + - 1. Reverse on Obstruction Open and Close with Safety Search Circuitry:
         1. Obstructions Encountered During Closing Cycle:

Doors stop and recycle open.

Doors cycle close at creep speed.

After Five Close Attempts: Doors reopen in part at creep speed and stall.

After obstructions haves been removed and doors are reset for normal operation a new calibration run takes place and the doors return to normal operation.

* + - * 1. Obstructions Encountered While Opening:

Doors stop, reverse direction and close.

Safety Search Feature: Allows doors to cycle open at creep speed.

After Five Opening Attempts: Doors will stall.

Doors shall be manually operable when in stall mode.

After obstructions are removed and doors are reset for normal operation a new calibration run takes place and the doors shall return to normal operation.

Reverse on Obstruction Sensitivity: Adjustable and programmable via MCU32 user interface.

\*\* NOTE TO SPECIFIER \*\* Delete the Door Motion Adjustment Paragraph if not required or delete rocker switch option not required.

* + - 1. Door Motion Adjustments:
         1. Three position rocker switch: On / off / hold open.
         2. Three position rocker switch: On / off / exit only; used with electrical lock.
         3. Rocker Switch: Two position rocker switch (on/off).

\*\* NOTE TO SPECIFIER \*\* Delete Door Motion Accessories paragraph if not required, or delete the two accessories options not required.

* + - 1. Door Motion Accessories:
         1. Key Switch: Three-position,
         2. Key Switch: Four-position.
         3. TORMAX MCU32 user interface with 6-operating modes.
      2. TORMAX MCU32 User Interface: Provides auto-diagnostics and six operating modes for system configuration.
         1. Allows the following door motion adjustments:

Opening and closing speeds and forces.

Hold open time for full door opening width.

Hold open time for reduced door opening width.

Reduced door opening width size and step control.

* + - * 1. Optimizes all other motion settings such as acceleration and braking distances.
        2. Auto-diagnostics.
        3. Protection against unauthorized manipulation by means of an integrated access code and/or on/off key switch.
        4. Provides the following six operation modes.

OFF: Door opening activators are inhibited. If the doors are open when activators are inhibited, activators and safeties shall remain functional until doors are fully closed.

AUTOMATIC: Standard two-way automatic operation (open/time delay/close).

AUTORED: Doors will automatically open at a preprogrammed reduced width.

EXIT: (One-Way Traffic) Ingress side activation sensor is inhibited when doors are in the fully closed position. This shall be accomplished without the use of switches and magnets.

OPEN: The doors will power open and stay open. Door opening width is dependent on previously selected operating mode (AUTO or AUTORED).

PARK: Doors shall be used manually. Door activators and safeties are inhibited.

\*\* NOTE TO SPECIFIER \*\* Delete accessories options not required.

* + - 1. Accessories:

\*\* NOTE TO SPECIFIER \*\* Delete one of the two following paragraphs, whichever one is not required.

* + - * 1. For Energy Loss Reduction:

Nylon brush on bottom of each sliding door panel.

Double row of wool pile weather-stripping at leading edge of active sliding door.

Wool pile weather-stripping between the header and sliding door carrier.

Nylon brush between the lead stiles of the sidelights and the pivot stiles of the sliding doors.

* + - * 1. For Energy Loss Reduction in Clean Rooms: Per ISO 14644-1 Class 2 Clean Room.

Silicon rubber weather-stripping on bottom of each sliding door panel.

Double row of silicon rubber weather-stripping at leading edge of active sliding door.

Silicon rubber weather-stripping between the header and sliding door carrier.

Silicon rubber weather-stripping between the lead stiles of the sidelights and the pivot stiles of the sliding doors.

* + - * 1. Electric Lock: By TORMAX.
        2. Battery backup.
        3. Door position monitoring.
        4. MDM-A I/O module.
        5. Key Switch: On/off (MCU32 user interface).
        6. Low voltage air curtain switch.
      1. Operating Climatic Conditions: All automatic sliding door system components shall operate between - 30 and 130 degrees F (-34 and 54 degrees C) in all climatic conditions.
    1. Basis or Design: TX9300SLAC Slim Line Inside Slide Door Systems with Automatic Locking as engineered, manufactured, and assembled by TORMAX USA Inc. Aluminum sliding doors, swing out sidelights (unglazed), structural header case, frame, TORMAX 2203.HB-UL electromechanical drive system, TORMAX 7401 Doorway Holding Beams and TORMAX 7501 Sensors.
       1. Factory assembled components in the header, adjusted, and tested.
       2. No field wiring or operator adjustment other than connection to job-site power.
       3. Electromechanical Drive System: Automatically adjusts door speeds to compensate for various door sizes, weights, and environmental conditions.
       4. Automatic Locking System:
          1. Limited access security equipment consisting of electric solenoid lock and 4-1/2 inch (114 mm) intermediate mid-rail with integrated flush mount concealed vertical rod exit panic hardware.
          2. Fail-secure electric solenoid locking device, 12 VDC, with self-contained solid-state electronic control factory prepared to the inside of TX9000 header.
          3. Solenoid Lock:

Operational in the "Off" and "Exit" mode of operation.

Engaged in the "Off" mode of operation.

With unit in the "Exit" mode, the solenoid lock retracts upon receipt of an operating signal from an actuating control allowing doors to slide open.

Upon loss of the operating signal the doors slide to the closed position and the solenoid lock self-latches in the closed position, returning the system to its locked status.

During a Power Interruption: Remains locked in the "Off" and "Exit" mode of operation, securing the doors in the closed position.

Means of Egress: Accomplished by depressing the panic bar allowing sliding doors to break out for emergency egress.

At the owner's discretion, the lock may be reprogrammed at the jobsite for fail-safe type operation.

* + - 1. Aluminum Slide Door Panels:
         1. Corner block construction to dimension heights and widths with corresponding glazing as shown on construction documents.

\*\* NOTE TO SPECIFIER \*\* Delete stile and rail options not required.

* + - * 1. Stile, Narrow: 2-1/8 inch (54 mm).
        2. Stile Medium: 3-1/2 inch (89 mm).
        3. Bottom Rail: 4 inch (102 mm).
        4. Bottom Rail: 10 inch (254 mm).
        5. Intermediate Horizontal Rail: 4-1/2 inch (114 mm) as standard.
        6. Security Glass Stops.

\*\* NOTE TO SPECIFIER \*\* Delete glass thickness options not required.

Glass Thickness: 1/8 inch (3 mm).

Glass Thickness: 1/4 inch (6 mm).

Glass Thickness: 3/8 inch (10 mm).

Glass Thickness: 1/2 inch (13 mm).

Glass Thickness: 5/8 inch (16 mm).

Glass Thickness: 3/4 inch (19 mm).

Glass Thickness: 7/8 inch (22 mm).

Glass Thickness: 1 inch (25 mm).

* + - * 1. Closers: Spring return. Return panels when broken out for emergency egress.
      1. Locking Hardware:

\*\* NOTE TO SPECIFIER \*\* Delete either of the two following paragraphs or delete both if neither is required.

* + - * 1. Bi-Part Sliding Door Systems: Includes a two-point maximum security deadlock. Secures the lock and latch stiles together and the lock stile to the top door carrier assembly.

Maximum Security Deadlock: Provided with key cylinder on the exterior and a thumb turn on the interior in accordance with NFPA 101.

* + - * 1. Single Sliding Door: Includes a single point maximum security deadlock securing the lock stile to the vertical jamb.

Maximum Security Deadlock: Provided with key cylinder on the exterior and a thumb turn on the interior in accordance with NFPA 101.

* + - * 1. Each door panel includes a full-length interlocking extrusion that securely latches the swing out panels to the sliding panels in the fully closed position.
      1. Door Operation:

\*\* NOTE TO SPECIFIER \*\* Delete slide type, operation, and energy level options not required.

* + - * 1. Slide Type: Single slide.
        2. Slide Type: Bi-part.
        3. Operation: One-way traffic.
        4. Operation: Two-way traffic.
        5. Energy Level: Low.
        6. Energy Level: High.
        7. Sliding Door Panels: Allow "breakout" in any position. Provides instant egress at any point in the door's movement.
      1. Doors and Swing Out Sidelights: Sized to prevent pinch points at meeting stiles.
      2. Aluminum Frame:
         1. Wall Thickness: 0.125 inches (3 mm) in integral structural sections.
         2. Frame (D x W): 4-1/2 x 1-3/4 inch (114 x 44 mm).

\*\* NOTE TO SPECIFIER \*\* The transom frame is optional. Delete if not required or delete glass thickness options not required.

* + - * 1. Transom Frame: To be a pocket flush glaze gasket system.

Glass Thickness: 1/4 inch (6 mm).

Glass Thickness: 5/8 inch (16 mm).

Glass Thickness: 1 inch (25 mm).

* + - * 1. Transom Packages:

\*\* NOTE TO SPECIFIER \*\* Delete vertical transom tube option not required. The first option is standard for Bi-Part Transoms.

Vertical Transom Tube: 1.

Vertical Transom Tube: \_\_\_.

* + - 1. Aluminum Extrusion Finish: See :Factory Finish" Article in this specification.
      2. Aluminum Sidelights:
         1. Swing out sidelight Panels with corner block construction to dimension heights and widths with corresponding glazing as shown on construction documents.

\*\* NOTE TO SPECIFIER \*\* Delete stile and bottom rail options not required.

* + - * 1. Stile, Narrow: 2-1/8 inch (54 mm).
        2. Stile, Medium: 3-1/2 inch (89 mm).
        3. Bottom Rail: 4 inch (102 mm).
        4. Bottom Rail: 10 inch (254 mm).
        5. Intermediate Rail: 4-1/2 inch (114 mm) as standard.
        6. The panels are to have security glass stops.

\*\* NOTE TO SPECIFIER \*\* Delete glass thickness options not required.

Glass Thickness: 1/8 inch (3 mm).

Glass Thickness: 1/4 inch (6 mm).

Glass Thickness: 3/8 inch (10 mm).

Glass Thickness: 1/2 inch (13 mm).

Glass Thickness: 5/8 inch (16 mm).

Glass Thickness: 3/4 inch (19 mm).

Glass Thickness: 7/8 inch (22 mm).

Glass Thickness: 1 inch (25 mm).

* + - * 1. Each panel includes a full-length interlocking extrusion that securely latches the swing out panels to the sliding panels in the fully closed position.

Sidelight panels swing out and allow sliding doors to "breakout" to the fully open position for instant egress at any point in the door's movement per NFPA 101.

Panels contain a hydraulic dampener to control the swing of the panel in the event of a breakaway condition.

* + - 1. Header Case (D x H): 4-1/2 x 6-1/2 inches (114 x 165 mm) extruded aluminum encompassing integral door track and extruded aluminum cover.
         1. Capable of supporting a single door leaf of 286 lbs (130 kg) over a span of 9 ft (2743 mm) with minimal deflection.
         2. Capable of supporting bi-parting door leaves of 264 lbs (120 kg) each over a span of 14 ft (4267 mm) with minimal deflection.
         3. Contains the TORMAX 2203.HB-UL electromechanical drive system and door mounting components.
         4. Mounting: Concealed, inline between the jambs.
         5. Extruded Aluminum Cover: Self-locking continuous hinge, allowing cover to open flush with the top of the header case.
      2. Sliding Door Panel Suspension: From overhead tracks by four door hanger wheels.
         1. Door Hanger Wheels:

Size: 1-9/16 inch (40 mm) diameter. Wheel Material: Nylon.

Bearing Centers: Precision steel lifetime lubricated ball bearings.

* + - * 1. Sliding Doors are held on the track by two 1-1/8 inch (29 mm) diameter nylon anti-riser wheels.
        2. Roller Track: Field replaceable and isolated between a bed of rubber for smooth and quite operation.
        3. An adjustable cantilever support pivot assembly supports each door panel.

This assembly allows sliding doors to swing outward for emergency egress and spring return close without needing a lower door pivot support.

* + - * 1. Door Height Adjustment: 3/8 inches (10 mm) as required by field conditions.
      1. Guide Aluminum Threshold Track: Guides the slide panels from close to open and open to close.

\*\* NOTE TO SPECIFIER \*\* Delete the two profile options not required. Then delete the threshold option not required.

* + - * 1. Profiles: 4-1/2 inch (114 mm) wide recessed square/square.

Threshold: Continuous full width.

Threshold: Partial (under sidelight panel only).

* + - * 1. Profiles: 8-1/2 inch (216 mm) wide surface double bevel.

Threshold: Continuous full width.

Threshold: Partial (under sidelight panel only).

* + - * 1. Profiles: 6-1/2 inch (165 mm) wide surface combination bevel/square.

Threshold: Continuous full width.

Threshold: Partial (under sidelight panel only).

* + - 1. TORMAX 2203.HB-UL Electromechanical Sliding door Drive System:
         1. DC motor technology and programmable microprocessor control.
         2. Programmable door closed holding brake.
         3. Position Encoder: A distance measuring system that protects against external interference to guarantee maximum operational performance.
         4. Maintains optimal performance at all times by an on-board self-adjusting closed loop fully programmable microprocessor control system.

Periodically checks operating limits and adjusts compensate for temperature, wind, dust, stack pressure and outside factors which alter system performance.

* + - * 1. Provide a dedicated 120 VAC, 15 amps single-phase power supply to electrical door operator.
      1. TORMAX MCU42 Microprocessor Control Unit System: Fully programmable.
         1. Monitors TORMAX 7401 doorway holding beams, door position, electric lock position, overhead combination sensor safety output, motor temperature, condition of battery, and emergency off button.
         2. Performs continual self-diagnostic system checks and can display faults on the optional MCU32 user interface.
         3. Torque: Factory set as prescribed by ANSI A156.10. Can be field adjusted to meet or exceed ANSI A156.38 for Low Energy Sliding Doors.
         4. Automatically calibrates opening and closing check positions, and full open and full closed position of the door system.
         5. Provides the Following:

Activators: Three programmable inputs.

Key switch.

Mode of Operation: Two inputs.

Safety: Four programmable inputs.

One additional free input.

Door Position Status: Two auxiliary output signals.

Alarm.

Electrical Accessories: Interface via LIN-bus technology

Data Communication: RS232.

Additional modules via CAN Bus interfacing.

* + - 1. TORMAX 7401 Doorway Holding Beams: Factory installed at 24 inches (610 mm) and 48 inches (1219 mm) from finished floor.
         1. Beam Interruption: Inhibits an open door from closing.

Beam is disabled in the door-closed position.

The MCU42 microprocessor monitors the performance for proper function of each doorway holding beam every 20 seconds and before each closing cycle.

If a doorway holding beam fault is detected the doors remain open.

* + - 1. TORMAX 7501 Self-Monitoring All Active Infrared Sensor: For sliding doors.
         1. Combines active infrared technology for activation and pedestrian safety in a single housing.
         2. Intelligent Unidirectional Detection Technology:

Provides energy savings with less door hold open time.

Self-adjusts in real time avoiding unnecessary door opening caused by changing environmental conditions.

Three rows of active infrared safety light curtains for perfect protection in front of and between the door leaves.

Integrated door-learn function for the inner row with an inward direction detection of up to -8 degrees.

Two outer rows of field adjustable active infrared curtains provide door activation.

Independent setting for door operation and safety detection zones for all types of sliding doors.

May also be used for sidelight safety.

Automatic real-time regulation and precise specification of monitoring area prevents ghosting caused by environmental conditions such as bright sunlight, shadows, ground reflection. Rain, snow, or fog direction detection technology for reducing hold-open times by up to 20 percent and for reducing energy loss in buildings by up to 10 percent.

* + - 1. Reverse on Obstruction Open and Close with Safety Search Circuitry:
         1. Obstructions Encountered During Closing Cycle:

Doors stop and recycle open.

Doors cycle close at creep speed.

After Five Close Attempts: Doors reopen in part at creep speed and stall.

After obstructions haves been removed and doors are reset for normal operation a new calibration run takes place and the doors return to normal operation.

* + - * 1. Obstructions Encountered While Opening:

Doors stop, reverse direction and close.

Safety Search Feature: Allows doors to cycle open at creep speed.

After Five Opening Attempts: Doors will stall.

Doors shall be manually operable when in stall mode.

After obstructions are removed and doors are reset for normal operation a new calibration run takes place and the doors shall return to normal operation.

Reverse on Obstruction Sensitivity: Adjustable and programmable via MCU32 user interface.

* + - 1. Door Motion Adjustments: Three position rocker switch: On / off / exit only.

\*\* NOTE TO SPECIFIER \*\* Door motion accessories are optional. Delete the two options not required or delete entire paragraphs if none of the options are required.

* + - 1. Door Motion Accessories:
         1. Key Switch: Three-position.
         2. Key Switch: Four-position.
         3. TORMAX MCU32 user interface with 6-operating modes.
      2. TORMAX MCU32 User Interface: Provides auto-diagnostics and six operating modes for system configuration.
         1. Allows the following door motion adjustments:

Opening and closing speeds and forces.

Hold open time for full door opening width.

Hold open time for reduced door opening width.

Reduced door opening width size and step control.

* + - * 1. Optimizes all other motion settings such as acceleration and braking distances.
        2. Auto-diagnostics.
        3. Protection against unauthorized manipulation by means of an integrated access code and/or on/off key switch.
        4. Provides the following six operation modes.

OFF: Door opening activators are inhibited. If the doors are open when activators are inhibited, activators and safeties shall remain functional until doors are fully closed.

AUTOMATIC: Standard two-way automatic operation (open/time delay/close).

AUTORED: Doors will automatically open at a preprogrammed reduced width.

EXIT: (One-Way Traffic) Ingress side activation sensor is inhibited when doors are in the fully closed position. This shall be accomplished without the use of switches and magnets.

OPEN: The doors will power open and stay open. Door opening width is dependent on previously selected operating mode (AUTO or AUTORED).

PARK: Doors shall be used manually. Door activators and safeties are inhibited.

* + - 1. Electric Lock: By TORMAX

\*\* NOTE TO SPECIFIER \*\* Delete accessories options not required.

* + - 1. Accessories:

\*\* NOTE TO SPECIFIER \*\* Delete one of the first two paragraphs, Whichever paragraph is not required.

* + - * 1. For Energy Loss Reduction:

Nylon brush on bottom of each sliding door panel.

Double row of wool pile weather-stripping at leading edge of active sliding door.

Wool pile weather-stripping between the header and sliding door carrier.

Nylon brush between the lead stiles of the sidelights and the pivot stiles of the sliding doors.

* + - * 1. For Energy Loss Reduction in Clean Rooms: Per ISO 14644-1 Class 2, Clean Room Standards.

Silicon rubber weather-stripping on bottom of each sliding door panel.

Double row of silicon rubber weather-stripping at leading edge of active sliding door.

Silicon rubber weather-stripping between the header and sliding door carrier.

Silicon rubber weather-stripping between the lead stiles of the sidelights and the pivot stiles of the sliding doors.

* + - * 1. Battery backup.
        2. Door position monitoring.
        3. MDM-A I/O module,
        4. Key Switch: On/off (MCU32 user interface).
        5. Low voltage air curtain switch.
      1. Operating Climatic Conditions: All automatic sliding door system components shall operate between - 30 and 130 degrees F (-34 and 54 degrees C) in all climatic conditions.
    1. TORMAX Series TX9420TL Telescoping Trackless Outside Slide: System consists of sliding aluminum doors and sidelights, header, jambs, and locking hardware. TORMAX iMotion direct drive system, synchronized 2:1 gear reduction unit, TORMAX 7501 sensors, and 7401 Doorway Holding Beams. All components factory assembled in the header, adjusted, and tested. No field wiring or operator adjustment required other than connection to job-site power.
       1. Sliding Aluminum Doors: Provide door panels with corner bock construction to sizes indicated. The outer fast sliding door panels allows "breakout" to the full open position and provides instant egress at any point in the door's movement. Provide with spring return closers to return the panel when broken out for emergency egress. Size doors and fixed sidelights to prevent pinch points at meeting stiles.
          1. Door Type:

\*\* NOTE TO SPECIFIER \*\* The 1-3/4 inch (44 mm) Intermediate Rail is not available if Automatic Locking Hardware is required. only the 4-1/2 inch (114 mm) Intermediate Rails are available. Delete stile and rail options not required.

Stile, Narrow: 2-1/8 inch (54 mm).

Stile, Medium: 3-1/2 inch (89 mm).

Bottom Rail: 4 inch (102 mm).

Bottom Rail: 10 inch (254 mm).

Intermediate Rail: 1-3/4 inch (44 mm).

Intermediate Rail: 4-1/2 inch (114 mm).

* + - * 1. Door Operation:

\*\* NOTE TO SPECIFIER \*\* Delete door operation option not required.

Single slide.

Bi-part slide.

* + - * 1. Traffic Operation:

\*\* NOTE TO SPECIFIER \*\* Delete traffic operation option not required.

For one-way traffic.

For two-way traffic.

* + - * 1. Glazing Thickness: Doors are field glazed as specified in Section 08 83 13 - Mirrored Glass Glazing. Provide with security glass stops for the following glass thickness:

\*\* NOTE TO SPECIFIER \*\* Delete glass thickness options not required.

Glass Thickness: 1/8 inch (3 mm).

Glass Thickness: 1/4 inch (6 mm).

Glass Thickness: 3/8 inch (10 mm).

Glass Thickness: 1/2 inch (13 mm).

Glass Thickness: 5/8 inch (16 mm).

Glass Thickness: 3/4 inch (19 mm).

Glass Thickness: 7/8 inch (22 mm).

Glass Thickness: 1 inch (25 mm).

\*\* NOTE TO SPECIFIER \*\* Delete one of the two following locking hardware options, whichever is not required.

* + - * 1. Locking Hardware: Provide with key cylinder on the exterior and a thumb turn on the interior in accordance with NFPA 101.

\*\* NOTE TO SPECIFIER \*\* Delete one of the two following paragraphs, whichever is not required.

Bi-part sliding doors provided with a two-point Maximum Security deadlock.

Single sliding door provided with a single point Maximum Security deadlock.

* + - * 1. Automatic Locking Hardware: Limited Access security consists of electric solenoid lock and 4-1/2 inch (117 mm) intermediate midrail with integrated flush mount concealed vertical rod exit panic hardware. Electric solenoid locking is a 115 VAC fail-secure solenoid with self-contained solid-state electronic control factory installed inside TX9000 header. Solenoid lock is operational in the "Off" and "Exit" mode of operation. Lock is engaged in the "Off" mode of operation and with the unit in the "Exit" mode, solenoid lock retracts upon receipt of an operate signal from an actuating control allowing doors to open. Upon loss of signal the doors will slide closed. Solenoid lock shall self-latch in the closed position, returning system to locked status. During a power interruption, solenoid lock shall remain locked in the "Off" and "Exit" mode of operation, securing the doors in the closed position. Egress is provided with flush mount panic bar allowing lead sliding door to break out. Lock may be reprogrammed at the job-site for fail-safe type operation.

\*\* NOTE TO SPECIFIER \*\* The two items below are optional. Select one of the following two or none if not required.

Bi-part sliding doors provided with a two-point Maximum Security deadlock.

Single sliding door provided with a single point Maximum Security deadlock.

* + - 1. Aluminum Frame:
         1. Wall Thickness: 0.125 inches (3 mm) in integral structural sections.
         2. Frame (D x W): 8 x 2 inch (204 x 51 mm).

\*\* NOTE TO SPECIFIER \*\* The Transom frame is optional. Delete transom frame if not required or delete glass thickness options not required.

* + - * 1. Transom Frame: With surface applied glazing supplied at indicated sizes. Field glazed as specified in Section 08 80 00. Provide with security glass stops.

Glass Thickness: 1/8 inch (3 mm).

Glass Thickness: 1/4 inch (6 mm).

Glass Thickness: 3/8 inch (10 mm).

Glass Thickness: 1/2 inch (13 mm).

Glass Thickness: 5/8 inch (16 mm).

Glass Thickness: 3/4 inch (19 mm).

Glass Thickness: 7/8 inch (22 mm).

Glass Thickness: 1 inch (25 mm).

* + - * 1. Transom Packages:

\*\* NOTE TO SPECIFIER \*\* Delete vertical transom tube option not required. The first option is standard for Bi-Part Transoms.

Vertical Transom Tube: 1.

Vertical Transom Tube: \_\_\_.

* + - 1. Aluminum Sidelights: Provide sidelight panels with corner block construction to sizes indicated.
         1. Panel Configuration

\*\* NOTE TO SPECIFIER \*\* Delete panel configuration option not required.

"O" Panel.

"P" Panel (non-glazed half panel).

* + - * 1. Type:

\*\* NOTE TO SPECIFIER \*\* Delete stile and rail options not required.

Stile, Narrow: 2-1/8 inch (54 mm).

Stile, Medium: 3-1/2 inch (89 mm).

Bottom Rail: 4 inch (102 mm).

Bottom Rail: 10 inch (254 mm).

Intermediate Rail: 1-3/4 inch (44 mm).

Intermediate Rail: 4-1/2 inch (114 mm). Standard with Access Control.

* + - * 1. Glazing Thickness: Sidelights are field glazed as specified in Section 08 83 13 - Mirrored Glass Glazing. Provide with security glass stops for the following glass thickness:

\*\* NOTE TO SPECIFIER \*\* Delete glass thickness options not required.

Glass Thickness: 1/8 inch (3 mm).

Glass Thickness: 1/4 inch (6 mm).

Glass Thickness: 3/8 inch (10 mm).

Glass Thickness: 1/2 inch (13 mm).

Glass Thickness: 5/8 inch (16 mm).

Glass Thickness: 3/4 inch (19 mm).

Glass Thickness: 7/8 inch (22 mm).

Glass Thickness: 1 inch (25 mm).

* + - 1. Header Case: Aluminum extruded header contains the TORMAX iMotion direct drive system and door mounting components over a span of 14 feet (4267 mm) with minimal deflection.

\*\* NOTE TO SPECIFIER \*\* Select one of the following two Direct Drive paragraphs as required for the project and delete the one not required.

* + - * 1. iMotion 2301 Direct Drive: For use with single sliding door leaf weighing up to 220 pounds (100 kg) or bi-parting sliding door leafs weighing up to 176 pounds (80 kg) each.

\*\* NOTE TO SPECIFIER \*\* Select one of the following two paragraphs as required for the project and delete the ones not required.

Concealed Mount Header: Extruded aluminum, 11-5/8 inches wide by 7-7/8 inches high (295 mm by 200 mm). Provide with extruded aluminum hinged cover allowing it to open approximately flush with the top of the header.

Surface Mount Header: Extruded aluminum, 11-5/8 inches wide by 7-7/8 inches high (295 mm by 200 mm). Provide with extruded aluminum hinged cover allowing it to open approximately flush with the top of the header.

* + - * 1. iMotion 2401 Direct Drive: For use with single sliding door leafs weighing up to 265 pounds (120 kg) or bi-parting sliding door leafs weighing up to 220 pounds (100 kg) each.

\*\* NOTE TO SPECIFIER \*\* Select one of the following two paragraphs as required for the project and delete the ones not required.

Concealed Mount Header: Extruded aluminum, 12-13/16 inches wide by 7-7/8 inches high (325 mm by 200 mm). Provide with extruded aluminum hinged cover allowing it to open approximately flush with the top of the header.

Surface Mount Header: Extruded aluminum, 12-13/16 inches wide by 7-7/8 inches high (325 mm by 200 mm). Provide with extruded aluminum hinged cover allowing it to open approximately flush with the top of the header.

* + - 1. Door Hanger Wheels:
         1. Each door is suspended from an overhead track by nylon wheels with steel lifetime lubricated ball bearings. Roller track is field replaceable and isolated in rubber for smooth and quite operation. Each door supported by a factory adjusted cantilever support pivot assembly that allows doors to swing outward for emergency egress and spring return closed without the need for a lower door pivot support. The door height has an adjustment of 1/2 inch (13 mm).

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

Nylon Wheels, iMotion 2301: Provide four 2-1/2 inch (64 mm) diameter wheels, held on track by two 7/8 inch (22 mm) diameter nylon anti-riser wheels.

Nylon Wheels, iMotion 2401: Provide eight 2-1/2 inch (64 mm) diameter nylon wheels, held on track by four 7/8 inch (22 mm) diameter nylon anti-riser wheels.

* + - 1. Synchronized 2:1 Gear Reduction Unit: Sequencing of the outer "fast" panel and "inner" slow panels shall be controlled by the 2:1 gear reduction unit. Unit shall permit both panels to arrive at the full open position together providing. Pulley or cable systems are not permitted.
      2. Accessories: Provide with following accessories:

\*\* NOTE TO SPECIFIER \*\* Select one of the following two paragraphs and delete the one not required.

* + - * 1. Weather-stripping: Provide nylon sweep on the bottom of each sliding door panel; two rows of wool pile weather-stripping at the leading edge of the active sliding door; wool pile weather-stripping between the header and sliding door carrier; and nylon brush between the lead stiles of the sidelights and the pivot stiles of sliding doors.
        2. Clean Room Seals: Per ISO 14644-1 Class2, Cleanroom Standards. Provide two rows of rubber vinyl weather-stripping at the leading edge of the active sliding door; rubber vinyl weather-stripping between the header and sliding door carrier; and rubber vinyl weather-stripping between the lead stiles of the sidelights and the pivot stiles of sliding doors. Vinyl sweep on the bottom of each sliding panel.

\*\* NOTE TO SPECIFIER \*\* The following paragraphs are optional. Delete options not required. The Electric lock option is standard with automatic locking hardware. It may be selected as an option when automatic locking hardware is not required.

* + - * 1. Electric Lock by TORMAX.
        2. Battery backup.
        3. Door position monitoring.
        4. I/O module.
        5. Key switch. (user interface)
        6. Key Switch: 4-position.
        7. Low voltage air curtain switch.
        8. Provide with Continuous Threshold Jamb to Jamb with Profile:

\*\* NOTE TO SPECIFIER \*\* Delete profile type options not required. Choose one.

Profile Type: 8 inch (203 mm) wide recessed square/square.

Profile Type: 12 inch (305 mm) wide surface double bevel.

Profile Type: 10 inch (254 mm) wide surface combination square/bevel.

* + 1. TORMAX Series TX9430 Telescoping Inside Slide: System consists of sliding aluminum doors and sidelights, header, jambs, locking hardware, aluminum guide threshold, TORMAX iMotion direct drive system, synchronized 2:1 gear reduction unit, TORMAX 7501 sensors, and 7401 Doorway Holding Beams. All components factory assembled in the header, adjusted, and tested. No field wiring or operator adjustment required other than connection to job-site power.
       1. Sliding Aluminum Doors: Provide door panels with corner block construction to sizes indicated. The outer fast and inner slow sliding door panels allow "breakout" to the full open position and provides instant egress at any point in the door's movement. Provide with spring return closers to return the panel when broken out for emergency egress. Each door panel includes full-length interlocking extrusion that securely latches the swing out panels to the sliding panels in the fully closed position. Size doors and swing-out sidelights to prevent pinch points at meeting stiles.
          1. Door Type:

\*\* NOTE TO SPECIFIER \*\* The 1-3/4 inch (44 mm) Intermediate Rail is not available if Automatic Locking Hardware is required. only the 4-1/2 inch (114 mm) Intermediate Rails are available. Delete stile and rail options not required.

Stile, Narrow: 2-1/8 inch (54 mm).

Stile, Medium: 3-1/2 inch (89 mm).

Bottom Rail: 4 inch (102 mm).

Bottom Rail: 10 inch (254 mm).

Intermediate Rail: 1-3/4 inch (44 mm).

Intermediate Rail: 4-1/2 inch (114 mm).

* + - * 1. Door Operation:

\*\* NOTE TO SPECIFIER \*\* Delete door operation option not required.

Single slide.

Bi-part slide.

Bi-part sliding doors provided with a two-point Maximum Security deadlock.

Single sliding door provided with a single point Maximum Security deadlock.

* + - * 1. Traffic Operation:

\*\* NOTE TO SPECIFIER \*\* Delete traffic operation option not required.

For one-way traffic.

For two-way traffic.

* + - * 1. Glazing Thickness: Doors are field glazed as specified in Section 08 83 13 - Mirrored Glass Glazing. Provide with security glass stops for the following glass thickness:

\*\* NOTE TO SPECIFIER \*\* Delete glass thickness options not required.

Glass Thickness: 1/8 inch (3 mm).

Glass Thickness: 1/4 inch (6 mm).

Glass Thickness: 3/8 inch (10 mm).

Glass Thickness: 1/2 inch (13 mm).

Glass Thickness: 5/8 inch (16 mm).

Glass Thickness: 3/4 inch (19 mm).

Glass Thickness: 7/8 inch (22 mm).

Glass Thickness: 1 inch (25 mm).

\*\* NOTE TO SPECIFIER \*\* Delete one of the two following locking hardware options not required.

* + - * 1. Locking Hardware: Provide with key cylinder on the exterior and a thumb turn on the interior in accordance with NFPA 101.

\*\* NOTE TO SPECIFIER \*\* Delete one of the two following paragraphs, whichever is not required.

Bi-part sliding doors provided with a two-point Maximum Security deadlock.

Single sliding door provided with a single point Maximum Security deadlock.

* + - * 1. Automatic Locking Hardware: Limited Access security consists of electric solenoid lock and 4-1/2 (117 mm) Intermediate midrail with integrated flush mount concealed vertical rod exit panic hardware. Electric solenoid locking is a 115 VAC fail-secure solenoid with self-contained solid-state electronic control factory installed inside TX9000 header. Solenoid lock is operational in the "Off" and "Exit" mode of operation. Lock is engaged in the "Off" mode of operation and with the unit in the "Exit" mode, solenoid lock retracts upon receipt of an operate signal from an actuating control allowing doors to open. Upon loss of signal the doors will slide closed. Solenoid lock shall self-latch in the closed position, returning system to locked status. During a power interruption, solenoid lock shall remain locked in the "Off" and "Exit" mode of operation, securing the doors in the closed position. Egress is provided with flush mounted panic bar allowing the lead sliding door to break out. Lock may be reprogrammed at the job-site for fail-safe type operation.

\*\* NOTE TO SPECIFIER \*\* The two items below are optional. Select one of the following two or none if not required.

Bi-part sliding doors provided with a two-point Maximum Security deadlock.

Single sliding door provided with a single point Maximum Security deadlock.

* + - 1. Aluminum Frame:
         1. Wall Thickness: 0.125 inches (3 mm) in integral structural sections.
         2. Frame (D x W): 8 x 2 inch (204 x 51 mm).

\*\* NOTE TO SPECIFIER \*\* The transom frame is optional. Delete transom frame if not required or delete glass thickness options not required.

* + - * 1. Transom Frame: With surface applied glazing supplied at indicated sizes. Field glazed as specified in Section 08 80 00. Provide with security glass stops.

Glass Thickness: 1/8 inch (3 mm).

Glass Thickness: 1/4 inch (6 mm).

Glass Thickness: 3/8 inch (10 mm).

Glass Thickness: 1/2 inch (13 mm).

Glass Thickness: 5/8 inch (16 mm).

Glass Thickness: 3/4 inch (19 mm).

Glass Thickness: 7/8 inch (22 mm).

Glass Thickness: 1 inch (25 mm).

* + - * 1. Transom Packages:

\*\* NOTE TO SPECIFIER \*\* Delete vertical transom tube option not required. The first option is standard with Bi-Part Transoms.

Vertical Transom Tube: 1.

Vertical Transom Tube: \_\_\_.

\*\* NOTE TO SPECIFIER \*\* Delete the following sidelight paragraph if not required.

* + - 1. Aluminum Sidelights: Provide swing out sidelight panels with corner block construction to sizes indicated. Each panel shall include a full-length interlocking extrusion that securely latches the swing out panels to the sliding panels in the fully closed position. Sidelights shall swing out and allow the sliding doors to "breakout" to the full open position for instant egress at any point in the door's movement per NFPA 101. Sidelight panels shall contain a hydraulic dampener to control the swing of the panel in the event of a breakaway condition.
         1. Type:

\*\* NOTE TO SPECIFIER \*\* Delete stile and rail options not required.

Stile, Narrow: 2-1/8 inch (54 mm).

Stile, Medium: 3-1/2 inch (89 mm).

Bottom Rail: 4 inch (102 mm).

Bottom Rail: 10 inch (254 mm).

Intermediate Rail: 1-3/4 inch (44 mm).

Intermediate Rail: 4-1/2 inch (114 mm). Standard with Access Control.

* + - * 1. Glazing Thickness: Sidelights are field glazed as specified in Section 08 83 13 - Mirrored Glass Glazing. Provide with security glass stops for the following glass thickness:

\*\* NOTE TO SPECIFIER \*\* Delete glass thickness options not required.

Glass Thickness: 1/8 inch (3 mm).

Glass Thickness: 1/4 inch (6 mm).

Glass Thickness: 3/8 inch (10 mm).

Glass Thickness: 1/2 inch (13 mm).

Glass Thickness: 5/8 inch (16 mm).

Glass Thickness: 3/4 inch (19 mm).

Glass Thickness: 7/8 inch (22 mm).

Glass Thickness: 1 inch (25 mm).

* + - 1. Header Case: Aluminum extruded header contains the TORMAX iMotion direct drive system and door mounting components over a span of 14 feet (4267 mm) with minimal deflection.

\*\* NOTE TO SPECIFIER \*\* Select one of the following two Direct Drive paragraphs as required for the project and delete the one not required.

* + - * 1. iMotion 2301 Direct Drive: For use with single sliding door leafs weighing up to 220 pounds (100 kg) or bi-parting sliding door leafs weighing up to 176 pounds (80 kg) each.

Concealed Mount Header: Extruded aluminum, 11-5/8 inches wide by 7-7/8 inches high (295 mm by 200 mm). Provide with extruded aluminum hinged cover allowing it to open approximately flush with the top of the header.

* + - * 1. iMotion 2401 Direct Drive: For use with single sliding door leafs weighing up to 265 pounds (120 kg) or bi-parting sliding door leafs weighing up to 220 pounds (100 kg) each.

Concealed Mount Header: Extruded aluminum, 12-13/16 inches wide by 7-7/8 inches high (325 mm by 200 mm). Provide with extruded aluminum hinged cover allowing it to open approximately flush with the top of the header.

* + - 1. Door Hanger Wheels:
         1. Each door is suspended from an overhead track by nylon wheels with steel lifetime lubricated ball bearings. Roller track is field replaceable and isolated in rubber for smooth and quite operation. Each door supported by a factory adjusted cantilever support pivot assembly that allows doors to swing outward for emergency egress and spring return closed without the need for a lower door pivot support. The door height has an adjustment of 1/2 inch (13 mm).

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

Nylon Wheels, iMotion 2301: Provide four 2-1/2 inch (64 mm) diameter wheels, held on track by two 7/8 inch (22 mm) diameter nylon anti-riser wheels.

Nylon Wheels, iMotion 2401: Provide eight 2-1/2 inch (64 mm) diameter nylon wheels, held on track by four 7/8 inch (22 mm) diameter nylon anti-riser wheels.

* + - 1. Guide Threshold Track: Provide aluminum threshold track to guide the sliding panels from close to open and open to close. Provide with the following profile:

\*\* NOTE TO SPECIFIER \*\* Select one of the following paragraphs and delete ones not required.

* + - * 1. Profile Type: 8 inch (203 mm). Recessed square/square partial threshold, 2/3 opening.
        2. Profile Type: 8 inch (203 mm). Recessed square/square continuous full width inside jamb to inside jamb.
        3. Profile Type: 10 inch (254 mm). Surface combination surface bevel/square continuous full width inside jamb to inside jamb.
        4. Profile Type: 12 inch (305 mm). Surface double bevel continuous full width inside jamb to inside jamb.
      1. Synchronized 2:1 Gear Reduction Unit: Sequencing of the outer "fast" panel and "inner" slow panels shall be controlled by the 2:1 gear reduction unit. Unit shall permit both panels to arrive at the full open position together providing. Pulley or cable systems are not permitted.
      2. Accessories: Provide with following accessories:

\*\* NOTE TO SPECIFIER \*\* Select one of the following two paragraphs and delete the one not required.

* + - * 1. Weather-stripping: Provide nylon sweep on the bottom of each sliding door panel; two rows of wool pile weather-stripping at the leading edge of the active sliding door and the back edge of the sidelight panel; wool pile weather-stripping between the header and sidelight top rail; wool pile weather-stripping between the lead stile of the sidelight and the pivot stile of the of sliding doors.
        2. Clean Room Seals: Per ISO 14544-1 Class 2, Cleanroom standards. Provide two rows of rubber vinyl weather-stripping at the leading edge of the active sliding door and rear stile of the swing out panel; rubber vinyl weather-stripping between the header and the sidelight top rails. Vinyl sweeps on the bottom of each sliding and swing out panel.

\*\* NOTE TO SPECIFIER \*\* The following paragraphs are optional. Delete options not required. The Electric lock option is standard with automatic locking hardware. It may only be selected as an option when automatic locking hardware is not being used.

* + - * 1. Electric Lock by TORMAX.
        2. Battery backup by TORMAX.
        3. Door position monitoring.
        4. I/O module.
        5. Key switch. (user interface)
        6. Key Switch: 4-position.
        7. Low voltage air curtain switch.
    1. TORMAX Series TX9500AG All Glass Outside Sliding Doors: All Glass doors and fixed sidelights glazed with 1/2 inch (12 mm) thick tempered glass, header, jambs, locking hardware, TORMAX iMotion direct drive system, TORMAX 7501 Sensors, and 7401 Doorway Holding Beams. All components are factory assembled in the header, adjusted, and tested. No field wiring or operator adjustment required other than connection to job-site power.
       1. Sliding All Glass Door Units: Provide sizes indicated with corresponding 1/2 inch (12 mm) thick tempered glazing. All Glass sliding doors shall "breakout" to the full open position and provides instant egress at any point in the door's movement. Doors shall have top 4-5/8 inch (117 mm) and bottom aluminum door rails. Size All Glass doors and fixed sidelights to prevent pinch points. Include a single-point MS deadlock securing the bottom rail to the finished floor. Provide with a key cylinder on the exterior and a thumb turn on the interior in accordance with NFPA 101.
          1. Door Type:

\*\* NOTE TO SPECIFIER \*\* Delete rail option not required.

Bottom Rail: 4-5/8 inch (117 mm).

Bottom Rail: 10 inch (254 mm).

* + - * 1. Door Operation:

\*\* NOTE TO SPECIFIER \*\* Delete door operation option not required.

Single slide.

Bi-part slide.

* + - * 1. Traffic Operation:

\*\* NOTE TO SPECIFIER \*\* Delete traffic operation option not required.

For one-way traffic.

For two-way traffic.

* + - 1. Aluminum Frame:
         1. Wall Thickness: 0.125 inches (3 mm) in integral structural sections.
         2. Frame (D x W): 4-1/2 x 1-3/4 inch (114 x 44 mm).

\*\* NOTE TO SPECIFIER \*\* The transom frame is optional. Delete transom frame if not required or delete glass thickness options not required.

* + - * 1. Transom Frame: To be a pocket flush glaze gasket system.

Glass Thickness: 1/4 inch (6 mm).

Glass Thickness: 5/8 inch (16 mm).

Glass Thickness: 1 inch (25 mm).

* + - * 1. Transom Packages:

\*\* NOTE TO SPECIFIER \*\* Delete vertical transom tube option not required. The first option is standard for Bi-Part Transoms.

Vertical Transom Tube: 1.

Vertical Transom Tube: \_\_\_.

\*\* NOTE TO SPECIFIER \*\* Delete the following sidelight paragraph if not required.

* + - 1. All Glass Fixed Sidelights: Provide All Glass fixed sidelight units to sizes indicated with corresponding 1/2 inch (12 mm) thick tempered glazing. Sidelights shall have top 4-5/8 inch (117 mm) and bottom aluminum door rails.
         1. Door Type:

\*\* NOTE TO SPECIFIER \*\* Delete rail option not required.

Bottom Rail: 4-5/8 inch (117 mm).

Bottom Rail: 10 inch (254 mm).

* + - * 1. Panel Configuration:

\*\* NOTE TO SPECIFIER \*\* Delete panel configuration option not required.

"O" Panel.

"P" Panel (non-glazed half panel).

* + - 1. Header Case: Aluminum extruded header contains the TORMAX iMotion direct drive system and door mounting components over a span of 18 feet (5486 mm) with minimal deflection.

\*\* NOTE TO SPECIFIER \*\* Select one of the following two Direct Drive paragraphs as required for the project and delete the ones not required.

* + - * 1. iMotion 2301 Direct Drive: For use with sliding one single door leaf weighing up to 330 pounds (150 kg) or two bi-parting door leafs weighing up to 286 pounds (130 kg) each.

\*\* NOTE TO SPECIFIER \*\* Select one of the following two paragraphs as required for the project and delete the one not required.

Concealed Mount Header: Extruded aluminum, 7-15/16 inches wide by 7-3/4 inches high (200 mm by 197 mm). Provide with integral extruded aluminum cover with continuous self-locking hinge allowing it to open approximately flush with the top of the header.

Surface Mount Header: Extruded aluminum, 7-15/16 inches wide by 7-3/4 inches high (200 mm by 197 mm). Provide with integral extruded aluminum cover with continuous self-locking hinge allowing it to open approximately flush with the top of the header.

* + - * 1. iMotion 2401 Direct Drive: For use with sliding one single door leaf weighing up to 992 pounds (450 kg) or two bi-parting door leafs weighing up to 661 pounds (300 kg) each.

\*\* NOTE TO SPECIFIER \*\* Select one of the following two paragraphs as required for the project and delete the ones not required.

Concealed Mount Header: Extruded aluminum, 9-1/8 inches wide by 7-3/4 inches high (232 mm by 197 mm). Provide with integral extruded aluminum cover with continuous self-locking hinge allowing it to open approximately flush with the top of the header.

Surface Mount Header: Extruded aluminum, 9-1/8 inches wide by 7-3/4 inches high (232 mm by 197 mm). Provide with integral extruded aluminum cover with continuous self-locking hinge allowing it to open approximately flush with the top of the header.

* + - 1. Door Hanger Wheels:
         1. Each door is suspended from an overhead track by nylon wheels with steel lifetime lubricated ball bearings. Roller track is field replaceable and isolated in rubber for smooth and quite operation. Each door supported by a factory adjusted cantilever support pivot assembly that allows doors to swing outward for emergency egress and spring return closed without the need for a lower door pivot support. The door height has an adjustment of 1/2 inch (13 mm).

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

Nylon Wheels, iMotion 2301: Provide four 2-1/2 inch (64 mm) diameter wheels, held on track by two 7/8 inch (22 mm) diameter nylon anti-riser wheels.

Nylon Wheels, iMotion 2401: Provide eight 2-1/2 inch (64 mm) diameter nylon wheels, held on track by four 7/8 inch (22 mm) diameter nylon anti-riser wheels.

* + - 1. Accessories: Provide with following accessories:
         1. Weather-stripping: Provide nylon sweep on the bottom of each sliding door panel; single row of wool pile weather-stripping at the leading edge of the active sliding door; wool pile weather-stripping between the header and sliding door carrier; and nylon brush weather-stripping between the lead edge of the sidelights and the pivot edge of sliding doors.

\*\* NOTE TO SPECIFIER \*\* The following paragraphs are optional. Delete options not required.

* + - * 1. Electric Lock by TORMAX.
        2. Battery backup.
        3. Door position monitoring.
        4. I/O module.
        5. Key switch. (user interface)
        6. Key Switch: 4-position.
        7. Low voltage air curtain switch.
        8. Provide with continuous threshold with the following profile.

Profile Type: 4-1/2 inch (114 mm) Recessed square/square continuous inside jamb to inside jamb.

Profile Type: 8-1/2 inch (216 mm) Surface double bevel continuous inside jamb to inside jamb.

Profile Type: 6-1/2 (165 mm) Surface combination square/bevel continuous inside jamb to inside jamb.

* + - 1. Operating Conditions:
         1. Climatic Conditions: Automatic sliding door system components are to remain operational between - 30 and 130 degrees F (-34 and 54 degrees C) in all climatic conditions.
    1. TORMAX Series TX9500AG All Glass Inside Sliding Doors: All Glass doors and swing out sidelights glazed with 1/2 inch (12 mm) thick tempered glass, header, jambs, locking hardware, TORMAX iMotion direct drive system, TORMAX 7501 Sensors, and 7401 Doorway Holding Beams. All components are factory assembled in the header, adjusted, and tested. No field wiring or operator adjustment required other than connection to job-site power.
       1. Sliding All Glass Door Units: Provide sizes indicated with corresponding 1/2 inch (12 mm) thick tempered glazing. All Glass sliding doors shall "breakout" to the full open position and provides instant egress at any point in the door's movement. Doors shall have top 4-5/8 inch (117 mm) and bottom aluminum door rails. Size All Glass doors and swing out sidelights to prevent pinch points. Include a single-point MS deadlock securing the bottom rail to the finished floor. Provide with a key cylinder on the exterior and a thumb turn on the interior in accordance with NFPA 101. The top and bottom aluminum door rails include interlocking extrusions that securely latch the swing out sidelight panels to the slide door panels in the fully closed position.
          1. Door Type:

\*\* NOTE TO SPECIFIER \*\* Delete rail option not required.

Bottom Rail Profile Height: 4 5/8 inches (117 mm).

Bottom Rail: 10 inch (254 mm).

* + - * 1. Door Operation:

\*\* NOTE TO SPECIFIER \*\* Delete door operation option not required.

Single slide.

Bi-part slide.

* + - * 1. Traffic Operation:

\*\* NOTE TO SPECIFIER \*\* Delete traffic operation option not required.

For one-way traffic.

For two-way traffic.

* + - 1. Aluminum Frame:
         1. Wall Thickness: 0.125 inches (3 mm) in integral structural sections.
         2. Frame (D x W): 4-1/2 x 1-3/4 inch (114 x 44 mm).

\*\* NOTE TO SPECIFIER \*\* The transom frame is optional. Delete transom frame if not required or delete glass thickness options not required.

* + - * 1. Transom Frame: To be a pocket flush glaze gasket system.

Glass Thickness: 1/4 inch (6 mm).

Glass Thickness: 5/8 inch (16 mm).

Glass Thickness: 1 inch (25 mm).

* + - * 1. Transom Packages:

\*\* NOTE TO SPECIFIER \*\* Delete tube options not required. The first option is standard for Bi-Part Transoms.

Vertical Transom Tube: 1.

Vertical Transom Tube: \_\_\_.

* + - 1. All Glass Swing Out Sidelights: Provide All Glass swing out sidelight units to sizes indicated with corresponding 1/2 inch (12 mm) thick tempered glazing. Top and bottom aluminum sidelite rails will include interlocking extrusions that securely latch the swing out sidelight panels to the slide door panels in the fully closed position. Sidelights shall have top 4-5/8 inch (117 mm) and bottom aluminum door rails.

\*\* NOTE TO SPECIFIER \*\* Delete rail option not required.

* + - * 1. Bottom Rail: 4-5/8 inch (117 mm).
        2. Bottom Rail: 10 inch (254 mm).
        3. All Glass Swing Out Side Lite Panels:

Swing out and allow All Glass slide door panels to "breakout" to the full open position for instant egress at any point in the door�s movement per NFPA 101.

Panels contain a hydraulic dampener to control the swing of the panel in the event of a breakaway condition.

* + - 1. Header Case: Aluminum extruded header contains the TORMAX iMotion Direct Drive system and door mounting components over a span of 18 feet (5486 mm) with minimal deflection. The direct drive system automatically adjusts door speeds to compensate for various door sizes, weights, and environmental conditions.

\*\* NOTE TO SPECIFIER \*\* Select one of the following two Direct Drive paragraphs as required for the project and delete the one not required.

* + - * 1. iMotion 2301 Direct Drive: For use with sliding one single door leaf weighing up to 330 pounds (150 kg) or two bi-parting door leafs weighing up to 286 pounds (130 kg) each.

Concealed Mount Header: Extruded aluminum, 7-15/16 inches wide by 7-3/4 inches high (200 mm by 197 mm). Provide with integral extruded aluminum cover with continuous self-locking hinge allowing it to open approximately flush with the top of the header.

* + - * 1. iMotion 2401 Direct Drive: For use with sliding one single door leaf weighing up to 992 pounds (450 kg) or two bi-parting door leafs weighing up to 661 pounds (300 kg) each.

Concealed Mount Header: Extruded aluminum, 9-1/8 inches wide by 7-3/4 inches high (232 mm by 197 mm). Provide with integral extruded aluminum cover with continuous self-locking hinge allowing it to open approximately flush with the top of the header.

* + - 1. Door Hanger Wheels:
         1. Each door is suspended from an overhead track by nylon wheels with steel lifetime lubricated ball bearings. Roller track is field replaceable and isolated in rubber for smooth and quite operation. Each door supported by a factory adjusted cantilever support pivot assembly that allows doors to swing outward for emergency egress and spring return closed without the need for a lower door pivot support. The door height has an adjustment of 1/2 inch (13 mm).

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

Nylon Wheels, iMotion 2301: Provide four 2-1/2 inch (64 mm) diameter wheels, held on track by two 7/8 inch (22 mm) diameter nylon anti-riser wheels.

Nylon Wheels, iMotion 2401: Provide eight 2-1/2 inch (64 mm) diameter nylon wheels, held on track by four 7/8 inch (22 mm) diameter nylon anti-riser wheels.

* + - 1. Guide Threshold Track: Provide aluminum threshold track to guide the slide panels from close to open and open to close. Provide in the following profile.

\*\* NOTE TO SPECIFIER \*\* Delete profile and threshold options not required. Choose one.

* + - * 1. Profile: 4-1/2 inch (114 mm) wide recessed square/square.

Threshold: Continuous full width.

Threshold: Partial (under sidelight panel only).

* + - * 1. Profile: 8-1/2 inch (216 mm) wide surface double bevel.

Threshold: Continuous full width.

Threshold: Partial (under sidelight panel only).

* + - * 1. Profile: 6-1/2 inch (165 mm) wide surface combination bevel/square.

Threshold: Continuous full width.

Threshold: Partial (under sidelight panel only).

* + - 1. Accessories: Provide with following accessories:
         1. Nylon sweep on the bottom of each sliding door and swing out sidelight; single row of wool pile weather-stripping at the leading edge of the active sliding door and pivot edge of the swing out sidelight; wool pile weather-stripping between the header and sliding door carrier; and nylon brush weather-stripping between the lead edge of the swing out sidelight panel and the pivot edge of sliding doors.

\*\* NOTE TO SPECIFIER \*\* The following paragraphs are optional. Delete options not required.

* + - * 1. Electric Lock by TORMAX.
        2. Battery backup.
        3. Door position monitoring.
        4. I/O module.
        5. Key switch. (user interface).
        6. Key Switch: 4-position.
        7. Low voltage air curtain switch.
      1. Operating Conditions:
         1. Climatic Conditions: Automatic sliding door system components are to remain operational between -30 and 130 degrees F (-34 and 54 degrees C) in all climatic conditions.

\*\* NOTE TO SPECIFIER \*\* Delete article if not required. Applies to iMotion 2301 and 2401 Drive Systems.

* 1. AUTOMATIC SLIDING DOOR DRIVE AND CONTROL SYSTEM
     1. Direct Drive System: TORMAX iMotion Direct Drive System consists of a gearless direct drive AC Synchronous motor with a frequency converter to control door speeds and a self-learning fully programmable iMotion microprocessor control unit. System includes an integrated distance measuring system that shall be protected against external interference to guarantee maximum operational performance. System maintains optimal performance at all times by use of an on-board self-adjusting closed loop fully programmable iMotion microprocessor control system that periodically checks the doors operating limits and makes automatic adjustments to compensate for temperature, wind, dust, stack pressure and other outside factors which may alter systems performance.
        1. iMotion Direct Drive Type:

\*\* NOTE TO SPECIFIER \*\* Select one of the following paragraphs as required for the weight of the doors specified above and delete the one not required.

* + - * 1. iMotion 2301 Direct Drive 1/4 HP motor.
        2. iMotion 2401 Direct Drive .40 HP motor.
      1. Control Unit: iMotion Microprocessor Control is a fully programmable system that monitors doorway holding beams, door position, electric lock position, activators, motor temperature, condition of battery, and emergency off button. Control system continual performs self-diagnostic system checks and displays faults by flashing LED's on an external illuminated seven-segmented function control panel. Torque is factory set as per ANSI A156.10. The control unit and integrated distance measuring system automatically calibrates the opening and closing check positions, and the full open and full closed position of door system. Controller provides four programmable inputs for activators, key switch, and mode of operation, four programmable inputs for safety and two auxiliary output signals for door position status, alarm, etc.
         1. Self-Monitoring Doorway Holding Beams: Doorway holding beams will be factory installed at 24 inches (610 mm) and 48 inches (1219 mm) from finished floor. When interrupted beams inhibit open door from closing. Beams are disabled in door-closed position. TORMAX iMotion microprocessor control monitors the performance for proper function of each DHB every 20 seconds and before each closing cycle. If DHB fault is detected doors will close at a creep speed.
         2. Reverse on Obstruction Open and Close with Safety Search Circuitry: Doors stop and recycle open if an obstruction is encountered during the closing cycle. Safety search feature allows doors to cycle close at creep speed. If an obstruction is encountered while opening, doors will stop, reverse direction and close. Safety search feature allows doors to cycle open at creep speed. After obstruction is removed a new calibration is run and doors return to normal operation. Reverse on obstruction sensitivity is adjustable and programmed from the function control panel.
         3. Door Motion Adjustments: An illuminated seven-segmented function control pane provides for six operating modes, system configuration and auto-diagnostics and the following adjustments; opening and closing speeds, hold open time for full door opening width, hold open time for reduced door opening width, reduced door opening width size and manual operation (free wheeling). iMotion microprocessor controller shall optimize all other motion setting such as acceleration and braking distances. Control panel provides for auto-diagnostics and is protected against unauthorized manipulation by an integrated access code and/or optional key switch.
         4. Mode of Operation: Illuminated seven-segmented function control panel provides six modes of operation.

OFF - Door opening activators inhibited. If doors are open when activators are inhibited DHB remains functional until doors are fully closed.

AUTOMATIC - Standard two way automatic operation (open/time out/close).

AUTORED - Doors automatically open at a reduced width.

EXIT - (One-Way Traffic) Egress side activation sensor is inhibited when doors are in fully closed position without use of switches and magnets.

OPEN - Doors power open and stay open. Door opening width is dependent on previously selected operating mode (AUTO or AUTORED).

MANUAL OPERATION - Doors used manually "friction free manual operation" Door activating sensors are inhibited.

* + - 1. TORMAX 7501 Self-Monitoring Sensor: Sensor is a self-monitoring, all active infrared sensor for sliding doors. It combines active infrared technology for activation and pedestrian safety in a single housing. Intelligent unidirectional detection technology provides energy savings with less door hold open time. Self-adjusts in real time avoiding unnecessary door opening caused by changing environmental conditions. Three rows of active infrared safety light curtains for perfect protection in front of and between the door leaves, with integrated door-learn function for the inner row with an inward direction detection of up to -8 degrees. Two outer rows of field adjustable active infrared curtains provide door activation. Independent setting for door operation and safety detection zones for all types of sliding doors. Sensor may also be used for sidelight safety as well. Automatic real-time regulation and the precise specification of the monitoring area prevents ghosting caused by environmental conditions such as bright sunlight, shadows, ground reflection, rain snow or fog direction detection technology for reducing hold-open times by up to 20 percent and for reducing energy loss in buildings by up to 10 percent.

\*\* NOTE TO SPECIFIER \*\* The following Factory Finish Article applies to all sliding door products listed in this specification.

* 1. FACTORY FINISH

\*\* NOTE TO SPECIFIER \*\* Delete one of the two following finish options not required.

* + 1. Finish: Anodized aluminum surfaces. Finishes are to be in accordance with Aluminum Association Standard AA DAF-45.

\*\* NOTE TO SPECIFIER \*\* Select one of the following paragraphs as required for the project and delete the ones not required. Contact the manufacturer for availability of custom finishes and insert finish type and color required.

* + - 1. AA-M12-C21-A41 Clear Architectural Class 1 anodized.
      2. AA-M12-C22-A44 Dark Bronze Architectural Class 1 anodized.
      3. AA-M12-C22-A44 Black Architectural Class 1 anodized.
      4. Custom Anodized Color: \_\_\_\_\_\_\_\_.
    1. Finish: Painted aluminum surfaces. As fabricated mechanical finish, chemically cleaned, and prepared for applied coating; with organic coating.

\*\* NOTE TO SPECIFIER \*\* Delete the coating option not required.

* + - 1. Coating: Organic.

\*\* NOTE TO SPECIFIER \*\* Delete one of the following two options.

* + - * 1. Manufacturer�s standard power coat finish.
        2. Thermosetting modified acrylic enamel.
      1. Coating: High performance organic coating.
         1. Fluoropolymer coating system with a minimum of 70 percent polyvinylidene fluoride resin.

\*\* NOTE TO SPECIFIER \*\* Delete one of the two following color options.

* + - 1. Color: As selected from manufacturer's standard range.
      2. Color: Custom color as selected by the Architect.
    1. Exposed Operator and Components: Metal cladding finish.

\*\* NOTE TO SPECIFIER \*\* Select one of the following paragraphs for the finish required and delete the one not required.

* + - 1. To match door and door hardware finish.
      2. As selected from manufacturer's standard range.

1. EXECUTION
   1. EXAMINATION
      1. Do not begin installation until the substrates have been properly prepared.
      2. Verify that other trades are complete with their required work before installing the automatic 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 automatic sliding door system.
      4. After repeated operation of the completed installation, inspect door operators and controls for optimum operating condition and safety.
      5. Adjust door equipment for correct function and smooth operation.
      6. Clean all metal surfaces promptly after installation.
      7. Remove temporary protection, clean exposed surfaces.
   4. FIELD QUALITY CONTROL
      1. Manufacturers representative to verify that installation of doors and controls are in conformance with the manufacturer's recommendations.
   5. PROTECTION
      1. Protect installed products until completion of project.
      2. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION