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The Automatic Choice

ARCHITECTURAL SPECIFICATIONS

PEDESTRIAN EXIT LANE SECURITY SYSTEM

Series SEL 1-Way Airport Security Control System
with Directional Control and Object Detection H01.01

Page 1 of 5 June 18

DIVISION 08 - OPENINGS SECTION 08 34 53 – SECURITY DOORS and FRAMES

PART I – GENERAL

1.01 SUMMARY

- A. WORK INCLUDED: Furnish complete pedestrian security exit lane control system, as specified, that has been manufactured, fabricated and installed to maintain performance criteria stated by manufacturer without defects, damage or failure.
- B. RELATED WORK:
 - 1. Concrete: Division 03, applicable sections.
 - 2. Masonry: Division 04, applicable sections.
 - 3. Openings: Division 08, applicable sections.
 - 4. Flooring: Division 09, applicable sections.
 - 4. Electrical: Division 26, applicable sections.

1.02 REFERENCES

- A. AMERICAN ARCHITECTURAL MANUFACTURERS ASSOCIATION (AAMA) 101: Appendix Dissimilar Materials.
- B. AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI):
 - 1. ANSI 156.10: Power Operated Pedestrian Doors
 - 2. ANSI Z97.1: Safety Glazing Materials Used in Buildings - Methods of Test.
- C. AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM) B221: Aluminum-Alloy Extruded Bars, Rods, Shapes and Tubes.
- D. THE ALUMINUM ASSOCIATION (AA): Aluminum Finishes Manual
- E. NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)
 - 1. NFPA 70: National Electrical Code (NEC).
 - 2. NFPA 101: Code for Safety to Life from Fire in Buildings & Structures.
- F. INTERTEK, WARNOCK HERSEY (ETL): Testing Laboratory and Certification Agency joined with ETL SEMKO
- G. UNDERWRITERS LABORATORY, INC. (USA & CANADA) UL 325: Electrical Door, Drapery, Gate, Louver, and Window Operators and Systems.
- H. U.S. Architectural & Transportation Barriers Compliance Board; <http://www.access-board.gov>.

1.03 SUBMITTALS

- A. SHOP DRAWINGS & PRODUCT DATA: Submit drawings and product data showing layout, profiles, product components including required dimensions, anchorage, accessories, finish and glazing details.
- B. QUALITY ASSURANCE AND CLOSEOUT SUBMITTALS: Submit the following:
 - 1. Manufacturer's Operation and Maintenance Data.
 - 2. Owner's Manual.
 - 3. Warranty document as specified herein.



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Page 2 of 5 June 18

1.04 QUALITY ASSURANCE

- A. INSTALLERS QUALIFICATIONS: Installer shall be factory trained and experienced to perform work of this section.
- B. MANUFACTURER'S QUALIFICATIONS: Manufacturer to have minimum (5) five years successful experience in the fabrication of automatic security doors of the type required for this project. Manufacturer capable of providing field service representation during installation, approving acceptable installer and approving application method.
- C. CERTIFICATIONS: Automatic door systems and options shall be factory certified to meet performance design criteria in accordance with the following standards:
 - 1. ANSI A156.10: Power Operated Pedestrian Doors.
 - 2. NFPA 101: Code for Safety to Life from Fire in Buildings & Structures.
 - 3. UL 325: Electrical Door, Drapery, Gate, Louver, and Window Operators and Systems.

1.05 WARRANTIES

- A. MANUFACTURER'S WARRANTY: Units to be warranted against defect in material and workmanship for a period of one year from the Date of Substantial Completion. Manufacturer's warranty is in addition to, and not a limitation of, other rights owner may have under Contract Documents.
- B. DISTRIBUTOR'S WARRANTY: One year warranty: Labor & transportation charges for defective parts replacement.

1.06 PROJECT CONDITIONS

- A. FIELD MEASUREMENTS: Verify actual dimensions/openings by field measurements before fabrication and record on shop drawings. Coordinate with fabrication and construction schedule to avoid construction delays.
- B. FINISHED FLOOR: System to be installed on finished floor, which must not include any stepped surfaces.

1.07 DELIVERY, STORAGE AND HANDLING

- A. ORDERING AND DELIVERY: Comply with factory's ordering instructions and lead time requirements. Delivery shall be in factory's original, unopened, undamaged containers with identification labels intact.
- B. STORAGE AND PROTECTION: Provide protection from exposure to harmful weather conditions and vandalism.

PART II – PRODUCTS

2.01 MANUFACTURER

HORTON AUTOMATICS, a division of Overhead Door Corporation, shall manufacture pedestrian security exit lane(s) of type(s) and size(s) specified on plans and door schedule.

2.02 EQUIPMENT

- A. MANUFACTURED DOOR AND FRAME UNITS: Shall be Series SEL Pedestrian Security Exit Lane. Units shall include frame/corridor enclosure with canopy, swing door panels, door operators and controls, electromechanical door locks, master security and sequence control, pedestrian and object detection sensors, red/green traffic control lights, and interior lighting (glass and glazing not included).



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Page 3 of 5 June 18

- B. ENCLOSURE: Shall be extruded aluminum and glass/glazing material (supplied by others) and shall be constructed maintaining proper clearances.
- C. GLASS and GLAZING: Glass stops, glazing vinyl and setting blocks for field glazing as per Safety Glazing standard ANSI Z97.1.2. General contractor to coordinate acquisition of glass, thickness and type in accordance with manufacturer's recommendations for prescribed design.
1. Door Panel Glazing (by others): Standard material to be flat safety glass in clear, 1/4" (6 mm) tempered.
 2. Enclosure Glazing (by others): Standard material to be flat safety glass in clear, 3/8" (10 mm) tempered.
- D. PANEL/DOOR: Shall be aluminum, 1-3/4" (44 mm) deep with narrow stile construction. Corner block type construction with 3/16" steel backup plate construction, secured with minimum of four hardened steel screws. Sash consists of snap-in glass stops, snap-in glazing beads and vinyl gaskets. Standard glazing prep to be for 1/4" (6 mm) glass/glazing material in doors and 3/8" (10 mm) glass/glazing material in main corridor.
- E. DOOR OPERATORS & CONTROLS: The Entry and Exit doors shall be operated by Series 4000 Automatic Swing Door Operators, isolation mounted in an extruded aluminum case for smooth and quiet operation.
1. Electro-mechanical Drive: Shall utilize a 1/8 HP D.C. permanent magnet motor working through reduction gears to the output shaft. Gear drive bearings shall be sealed and lifetime lubricated. Door position shall be continuously monitored by rotary encoder.
 2. Electronic Control: Shall be microprocessor based, with a display to facilitate setup and troubleshooting. Independent adjustment shall be provided for all speed and force settings, and time delays.
- F. DOOR LOCKS: The door closed positions shall be secured by independent, monitored electronic locks. Control of the electric locking shall be by the SEL's master control, with remote override available upon request. ANSI A156.5, Grade 1, 2-Point Locking is provided and installed in the adjacent vertical rails of the swing doors.
- G. MASTER SECURITY & SEQUENCE CONTROL: Shall be located in the canopy and will monitor pedestrian traffic flow using motion, presence and direction sensors. It will directly connect to the automatic door controls and electric locks. It will provide five operating modes for the SEL, as determined by a remote console or by key switch mounted with direct view of the SEL.
- The five operating modes are -
1. Lockdown - The SEL's doors will be closed and electric locks engaged. Interior lighting will be turned off and the Traffic Control lights will be red.
 2. All Open - Both Entry and Exit doors will be opened and remain open. Interior lighting will be on and the Traffic Control lights will be green. Maximum traffic flow can approach 2000 pedestrians per hour.
 3. Free Flow - Doors shall be closed when no pedestrians are close. Approach to the Entry doors (Secure / Air side) shall cause the doors to open and as passengers pass through the SEL the Exit doors (Non-secure / Land side) will automatically open and allow exit. *Both Entry and Exit doors can be open at the same time.* Traffic direction in the SEL is monitored by presence and direction sensors, and if a pedestrian attempts to travel through the SEL in the wrong direction (from non-secure / Land side to secure / Air side), an alarm will occur and the Entry doors will close and lock. The traffic lights remain green unless an alarm occurs. A pedestrian entering from the Secure / Air side can change direction in the SEL without an alarm, if he has not traversed beyond the mid-point of the SEL. Maximum traffic flow can approach 1500 pedestrians per hour.



4. Interlock - Doors shall be closed when no pedestrians are close. Approach to the Entry doors (Secure / Air side) shall cause the doors to open and as the pedestrians pass through into the SEL, the Entry doors will close, followed by the Exit doors (Non-secure / Land side) opening, allowing exit from the SEL. The Entry doors and Exit doors are not allowed to be open at the same time. When the SEL is clear, the Exit doors close and the sensors in the SEL check for any objects left inside. When object detection clears, the Entry doors will then open for additional traffic. Traffic lights are red when doors are closing or closed and will not open; green when doors are released to open. Maximum traffic flow can approach 500 pedestrians per hour.
5. Cleaning - The Entry doors (Secure / air side) will be closed and locked, and the Exit doors will open and remain open, allowing access to inspect and clean all surfaces of the SEL without compromising security. Traffic lights will be red.
- H. PEDESTRIAN & OBJECT DETECTION SENSORS: Motion, presence and directional sensors are used to monitor traffic flow and detect objects in the SEL. Time-of-Flight sensors to be used as the Primary means of detecting pedestrian travel direction. Systems using video technology are not permitted. In Interlock mode, when Entry and Exit doors are closed, the interior surfaces of the SEL, including ceiling and floor, are scanned for objects 2" x 2" x 2" or larger. In all operational modes, if the Exit doors are open, they will not close until the interior of the SEL is clear of pedestrians. In Free Flow and Interlock modes, directional sensors monitor traffic direction in the SEL and the system will alarm when pedestrians are detected moving in the wrong direction. Presence sensors are used to detect pedestrians in the swing path of the automatic doors and inhibit door closing at normal speed. Motion sensors are used on the approach side of the Entry doors to initiate opening of the Entry doors, and are used to alarm and inhibit operation of the SEL when approach is detected on the exit side of the Exit doors.
- I. TRAFFIC CONTROL LIGHTS: Bi-color (red/green) LED lights shall be mounted on the SEL corner posts, adjacent to the Entry and Exit doors. When the adjacent doors are open or free to open, the lights will be green. When the adjacent doors are prevented from opening, closing, or about to close, the lights will be red.
- J. INTERIOR LIGHTING: Minimum of six (6) LED light fixtures, each providing 150 lumens minimum, recessed in the ceiling. They shall be controlled by the SEL master control and shall remain on when any of the operational modes are selected.

2.03 RELATED WORK REQUIREMENTS

- A. ELECTRICAL: 120/240 VAC, 50/60 cycle (field selectable), single phase, 15 amp. Remote switch locations shall require routing of low voltage class II wiring to the operator controls. Remote switch locations shall be predetermined and wired before installation.
- B. GLASS AND GLAZING: Glass stops, glazing vinyl and setting blocks for field glazing as per Safety Glazing standard ANSI Z97.1.2. Contractor to coordinate acquisition of glass in thickness and type in accordance with manufacturer's recommendations for prescribed design.

2.04 MATERIALS, FINISHES AND FABRICATION

- A. EXTRUDED ALUMINUM: ASTM B221, 6063-T5 alloy and temper, anodized:
 1. Structural Drum/Enclosure Sections: Minimum 1/8" (3 mm) thickness.
 2. Structural Panel/Door Wing Sections: Commercial grade.
- B. FINISH (for all exposed aluminum surfaces): Shall be 204-R1 Clear: Arch. Class 2 Clear Anodized Coating, AA-MI2C22A31.



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Page 5 of 5 June 18

PART III - EXECUTION

3.01 EXAMINATION

SITE VERIFICATION OF CONDITIONS: Installer must verify that base conditions are acceptable for product installation as per manufacturer. Notify Contractor in writing of conditions detrimental to acceptable completion of work. Negative conditions to be corrected in a manner acceptable to the installer and manufacturer.

3.02 INSTALLATION

- A. **GENERAL:** Install door unit(s) plumb, level and true to line, without warp or rack of enclosure. Allow for 1/4" shim space each side. Anchor in place. Unit is free-standing with no additional support required. Adjacent construction not to bear down on SEL.
- B. **DISSIMILAR MATERIALS:** Comply with AAMA 101, Appendix Dissimilar Materials by separating aluminum materials and other corrodible surfaces from sources of corrosion or electrolytic action contact points.
- C. **WEATHER-TIGHT CONSTRUCTION:** Install enclosure with joint filler or gaskets and sealant. Coordinate installation with wall flashings and other components of construction.
- D. **ELECTRICAL:** Contractor to install all wiring to operator on a separate circuit breaker routed into canopy.

3.03 CLEANING, ADJUSTMENT AND PROTECTION

- A. **CLEANING & ADJUSTMENT:** Adjust operator and controls for optimum safety and include the following:
 - 1. Remove temporary coverings and protection of adjacent work areas.
 - 2. Remove construction debris from construction site and legally dispose of debris.
 - 3. Repair or replace damaged installed products.
 - 4. Clean product surfaces and lubricate operating equipment for optimum condition and safety.
- B. **ADVISE CONTRACTOR:** of precautions required to ensure doors will be undamaged at the time of acceptance.

Note: Horton Automatics reserves the right to make product improvements and change specifications without notice.

END OF SECTION