

## HORTON AUTOMATICS - ARCHITECTURAL SPECIFICATIONS, 6/2005

### HD-SWING™ FIRE DOOR PACKAGE - SERIES 4900DP- LE FIRE RATED DOOR & FRAME WITH EXIT DEVICE AND CONCEALED LOW ENERGY OPERATOR

#### DIVISION 8 - DOORS AND WINDOWS

#### SECTION 08465 – POWER OPERATED INTEGRATED DOOR ASSEMBLIES

*Specifier Note: Coordinate and edit articles and paragraphs below to suit project requirements. Add section numbers and titles per CSI "MasterFormat" and specifier's practice. Consult with manufacturer regarding performance requirements for units applicable to project, as well as, related equipment and accessories required.*

#### PART I - GENERAL

##### 1.01 SUMMARY

A. WORK INCLUDED: Furnish complete automatic door 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. Section 04050 - Basic Masonry Materials and Methods
2. Section 06100 - Rough Carpentry
3. Section 06200 - Finish Carpentry
4. Section 07800 - Fire and Smoke Protection
5. Section 08100 - Metal Doors and Frames
6. Section 08300 - Specialty Doors
7. Section 08400 - Entrances and Storefronts
8. Section 08700 – Finish Hardware
9. Section 08800 – Glazing
10. Section 09900 - Painting
11. Section 16100 - Wiring Methods
12. Section 16200 - Electrical Power

##### 1.02 REFERENCES

A. INTERTEK TESTING SERVICES/WARNOCK HERSEY INTERNATIONAL (ITS) – Certification Listings

B. [AMERICAN ASSOCIATION OF AUTOMATIC DOOR MANUFACTURERS \(AAADM\)](#)

C. [AMERICAN NATIONAL STANDARDS INSTITUTE \(ANSI\)](#):

1. ANSI A156.1: Hinges
2. ANSI A156.2: Locks & Lock Trim
3. ANSI A156.3: Exit Devices
4. ANSI A156.4: Door Controls / Closers
5. ANSI A156.5: Auxiliary Locks & Associated Products
6. [ANSI A156.10](#): For Power Operated Pedestrian Doors; Swing Doors section.
7. ANSI A156.13: Mortise Locks & Latches
8. ANSI A156.15: Closer / Holder / Release Devices
9. ANSI A156.19: For Power Assist and Low Energy Power Operated Doors

10. ANSI A156.26: Continuous Hinges
  11. ANSI A117.1: Americans with Disabilities Act (ADA)
  12. ANSI A250.8: Revision/Redesignation of ANSI/SDI 100-91
- D. [AMERICAN SOCIETY FOR TESTING AND MATERIALS \(ASTM\)](#):
1. [ASTM B-221](#): Aluminum-Alloy Extruded Bars, Rods, Shapes and Tubes.
  2. ASTM E-152: Standard Methods of Fire Tests of Door Assemblies
- E. [BUILDERS HARDWARE MANUFACTURERS ASSOCIATION \(BHMA\)](#):
1. Materials and Finishes –BHMA 1301
- F. [NATIONAL FIRE PROTECTION ASSOCIATION](#):
1. [NFPA 101](#): Code for Safety to Life from Fire in Buildings & Structures.
  2. NFPA 80: Standard for Fire Doors and Windows
  3. NFPA 252: Standard Methods of Fire Tests of Door Assemblies
- G. APPLICABLE MODEL BUILDING CODE
1. Uniform Building Code (UBC)
  2. International Building Code (IBC)
  3. Southern Building Code (SBC)
  4. Building Officials and Code Administrators (BOCA)
  5. California Building Code (CBC)
  6. Local Building Code
- H. [UNDERWRITERS LABORATORY, INC.](#):
1. UL10C - Fire tests of door assemblies (UBC 7-2-97)
  2. UL305 - Panic hardware
  3. [UL 325](#): Electrical Door, Drapery, Gate, Louver, and Window Operators and Systems
- I. [UNDERWRITERS LABORATORY OF CANADA \(ULC\)](#)
- J. HOLLOW METAL MANUFACTURING ASSOCIATION (HMMA)
- K. NATIONAL ASSOCIATION OF ARCHITECTURAL METAL MANUFACTURERS (NAAMM)
- L. [STEEL DOOR INSTITUTE](#)
1. SDI 100 – Standard Steel Doors and Frames (ANSI A250.8: Revision/Redesignation)
  2. SDI 105 – Recommended Erection Instructions for Steel Frames

### **1.03 SUBMITTALS**

- A. PRODUCT DATA: Submit manufacturer's complete product and installation data.
- B. SHOP DRAWINGS: Submit drawings showing layout, profiles, product components including anchorage, accessories, finish and glazing details (where required).
- C. QUALITY ASSURANCE AND CLOSEOUT SUBMITTALS: Submit the following:
1. Manufacturer's Operation and Maintenance Data.
  2. Warranty document as specified herein.
  3. AAADM inspection compliance form completed and signed by certified AAADM inspector prior to doors being placed in operation as proof of compliance with ANSI A156.10.

### **1.04 QUALITY ASSURANCE**

- A. **INSTALLERS QUALIFICATIONS:** Installer shall be factory trained, certified by AAADM, 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 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. Door frames must be properly prepared and reinforced to install hardware per manufacturer's template and installation instructions. Install door frames in accordance with SDI 105 – "Recommended Erection Instructions for Steel Frames."
- D. Hardware shall be installed by trade's people knowledgeable and skilled in the application, installation, and adjustment of commercial grade doors and door hardware. Doors and frames must be installed plumb, square, and level.

### **1.05 WARRANTIES**

- A. **MANUFACTURER'S WARRANTY:** Manufacturer's Limited Warranty against defect in material and workmanship for the period shown below 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.
  - 1. Power Operators: 1 Year
  - 2. Metal Doors and Frames: 2 Years
  - 3. Exit Device and Continuous Hinges: 5 Years
  - 4. Balance of Hardware: 2 Years
- B. **DISTRIBUTOR'S WARRANTY:** One year warranty - labor and transportation charges for defective parts replacement.

### **1.06 PROJECT CONDITIONS**

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.

### **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 automatic swing door(s) of type(s) and size(s) specified on plans and door schedule.

### **2.02 EQUIPMENT**

- A. **MANUFACTURED DOOR UNITS:** Overhead Concealed Operator, Fire Rated Door with Integrated Exit Device and Frame: The operator header is mounted directly over the door and serves as the door frame header. The operator output shaft shall connect to an arm

that transmits power to the door via a slide block connected to the arm. The arm works in a track that is mounted in the top web of the door. The door pivot is independent of the operator. Hollow metal door is hung on full mortise continuous hinge on hollow metal frame. Latching exit device shall be factory installed with pushbar inset into door.

B. OPERATOR: The Electric Operating Mechanism shall be Series 4000: Operator shall be isolation mounted and concealed in an extruded aluminum case for smooth and quiet operation.

1. Opening action shall be accomplished by a 1/8 HP D.C. permanent magnet motor working through reduction gears to the output shaft. Gear train bearings shall be sealed ball bearing types.
2. Closing action shall be accomplished by a maximum-duty Quadracoil™ spring (four independent coil springs separated by teflon discs and enclosed in an external spring box) with a lifetime warranty. Close speed control shall be supplied by dynamic braking of the motor and shall be fully adjustable. Operator to act as a manual closer when power is off or when the master control unit is removed. An On/Off/Hold Open switch shall be supplied.
3. Master Control: Shall incorporate the following features:
  - a. Adjustable time delay of 2 to 30 seconds (ANSI A156.19 requirement is 5 second minimum time delay).
  - b. Infinite adjustment to opening and open check speeds including adjusting the opening force without affecting the opening speed.
  - c. Immediate reversal of door motion without undue strain on the drive train. This will be accomplished by supplying stepped voltage to the motor. The door shall reverse when closing if an object stops the door.
  - d. Motor Protection Circuit: A locked door motor protection circuit will be supplied that will shut off current to the motor when the door is inadvertently locked or otherwise prevented from opening.
  - e. Emergency Breakout for Inswinging doors (overhead concealed): When door is in emergency breakout position, power shall be removed from the operator.

C. OPERATION: Automatic and/or Manual:

1. Automatic: Pushbutton switch actuates door open; door closes after time delay expires. Opening and closing force, measured 1" (25.4 mm) out from the lock stile of the door, not to exceed 15 pounds (67 N) of force to stop the door when operating in either direction. Operator to include the following variable adjustments so as to comply with ANSI Standard A156.19: Opening speed - 4 to 6 seconds; Closing speed - 4 to 6 seconds.
2. Manual: Push-N-Go™: Manually pushing door activates automatic opening cycle; door closes after time delay expires (approximately 30% less than after pushbutton actuation).

D. FIRE RATED DOOR FRAMES: Frames are 14-gauge cold rolled steel and shall have mitered corners, continuously welded and ground smooth on frame face and be prime coated. Door Frames shall be prepared and reinforced with 12 gauge reinforcements for applied hardware. Applied head stops shall conceal access panel.

E. FIRE RATED INTEGRATED DOOR ASSEMBLIES: Door is a 16 or 18 gauge honeycomb or steel stiffened core hollow metal door and will be a minimum of 1-3/4 inches thick. All doors will be reinforced with 14 gauge steel reinforcements for door closer and electromagnetic holder mountings. All doors shall be constructed with a U-Shaped, 16 gauge steel reinforcement channel, top and bottom, for the installation of door hardware accessories. All doors shall be supplied with an 18 gauge top cap. There shall be no seams or spot welds visible on the door faces.

1. Door assemblies shall be fire labeled as follows:

CONSTRUCTION APPLICATION	HONEYCOMB or TEMPERATURE RISE		STEEL STIFFENED	
	MAXIMUM SIZE	LABEL	MAXIMUM SIZE	LABEL
Single Door	4'0" wide X 8'0" high	Up to 3 hour	4'0" wide X 10'0" high	Up to 3 hour
	4'3" wide X 9'0" high	Up to 1-1/2 hour	4'3" wide X 9'0" high	Up to 1-1/2 hour
Pair	8'0" wide X 8'0" high	Up to 3 hour	8'0" wide X 10'0" high	Up to 3 hour
	8'6" wide X 9'0" high	Up to 1-1/2 hour	8'6" wide X 9'0" high	Up to 1-1/2 hour
Double Egress	8'0" wide X 8'0" high	Up to 3 hour	8'0" wide X 8'0" high	Up to 3 hour
	8'6" wide X 9'0" high	Up to 1-1/2 hour	8'0" wide X 10'0" high	Up to 1-1/2 hour

2. Door assemblies will meet or exceed ADA requirements, and NFPA fire codes. Integrated Assemblies shall provide a U.L. Life-Safety Listings and Certified to meet ANSI/BHMA A156.3 Grade 1 Standards for Exit Devices. Assemblies shall be listed with U.L. and / or ITS-Warnock Hersey, to meet the U.L.10C Standard. When applicable, exit devices shall carry certification with California State Fire Marshall and New York City MEA.
3. Door shall be furnished with a factory installed inset concealed vertical rod, top rod only exit device. The device is fire rated 20 minutes up to 3-hours for the opening. The exit device shall be clean and unobtrusive in design with a minimal bar height of 2-7/16". The push bar of the exit device shall not exceed a projection of 1-1/8" when in the latched position. Push bar shall be made of heavy duty aluminum extrusion, available in anodized and true architectural finishes using a metal cladding. End Caps shall be metal. 450 degree temperature rise cores available where required. When open, the exit device push pad shall not extend further than 1/2 inch from the face of the door in mechanical operation, and no more than 1/8" when in Electric Dogging (EDM) operation.
  - a. Electric Dogging: shall allow the push bar to be held in a retracted position allowing the door to be used as a push / pull. The push bar will be secured in the dogged position so that the projection of the bar is less than 1/8" from the door face. Electric Dogging shall be 24VDC, requiring less than 750 ma. A transformer and a rectifier shall be furnished as required. Dogging feature shall be wired and integrated into the fire alarm system as required. Dogging solenoid shall contain a built in micro switch for use and integration with automatic operators.
  - b. Paired opening or single openings shall be latched by the door's patented rotating top latch mechanism, interlocking the door to the frame, unless specified otherwise. A maintenance pocket in the lock edge shall allow access for attaching trim, and for lubricating mechanisms as required under normal maintenance. Assembly shall be constructed with an inset concealed exit device using a top rod only latching mechanism. The header strike post shall be hardened steel.
  - c. As specified single openings shall be latched by Mortise Lock Exit Mechanism furnished with a stainless steel latch bolt with a minimum throw of 3/4" , template to the ANSI 115.1, standard door and frame prep, 2 3/4" backset, handed and beveled as required. The Mortise Strike shall be stainless steel.
4. Electric Latch Retraction: shall be 24VDC requiring a Power Supply by exit device manufacturer. Electric Latch Retraction solenoid shall contain a built in micro switch for use and integration with automatic operators. Coordinate with wiring and integration of other products when used for access control or with automatic operators.
5. SPDT Monitor Switch: single or dual switch shall operate external signal lights, horns, monitor, or other devices as required. SPDT Monitor switches are to be wired for normally open or normally closed as required by application. Dual switch version shall provide redundancy as required by building codes or may be used for operating a second device.
6. Operating Lever Trim: shall be vandal resistant, with a clutch mechanism to prevent over torque of the lever assembly. Lever Trim shall be non-handed. Lever trim will accept a standard 1" or 1-1/8" mortise cylinder.

#### F. INTEGRATED DOOR ASSEMBLY COMPONENTS AND OPTIONS:

1. Hinges: Standard doors shall be furnished with full mortise, pin & barrel, heavy duty, continuous steel hinge with black powdercoat primer. Optional Continuous Hinges:
  - a. Stainless Steel Pinned - Full mortise
  - b. Stainless Steel, Full mortise with edge guard
  - c. Stainless Steel, Swing Clear with edge guard
2. Optional Vision Lites: Shall be available as built-in flush vision lite or low profile vision lite frame. Available configurations include:
  - a. Narrow Lite
  - b. Half Glass
  - c. Mid-Panel
3. Optional Smoke Seals available with following configurations:
  - a. Head/Jamb Seal: Adhesive (Standard) or extruded aluminum (Optional)
  - b. Meeting Stile Seal: Adhesive (Standard)
  - c. Meeting Stile Astragals: Extruded aluminum (Optional)
4. Optional Protection Plates: Shall be beveled, .050 ga. Stainless steel, 2" less door width, and be available with following configurations:
  - a. Kick Plates: 7" to 16" high
  - b. Armor Plates: 17" to 36" high
  - c. Mop Plates: 6" or under in height
  - d. Stretcher Plates: 6" to 16" high (Location varies)
5. Wire Power Transfers: Shall be factory installed into door edge and be available with following configurations:
  - a. Max. 90-degree opening
  - b. Max. 180-degree opening
  - c. Swing Clear 90-degree
6. Door Stops: Provide wall or floor stop, as required to prevent damage to walls.

#### G. TYPICAL OPENING TYPES

1. SET 1A – SINGLE SWING: Electric Dogging (Standard Black Prime Hinge)
  - 1 each Hollow Metal Frame – Single or Double Rabbet Jambs, as required
  - 1 each Integrated Door - D3677EDM, flush or vision lites as required
  - 1 each Full Mortise Continuous Hinge – FM-200-CTP
  - 1 each Lever Trim – D3080 series
  - 1 each Mortise Cylinder – By others, as required
  - 1 each Wire Transfer – D4612-1
  - 1 each Transformer D4605 (For EDM)
  - 1 each Rectifier D4603 (For EDM)
  - 1 set Smoke Seals DS88D
  - 1 each Protection Plate(s), as required
  - 1 each Door Stop, as required
  - 1 set Power Operator -4000 series
  - 2 each Actuators, as required
  - 1 set Safety Sensor(s), as required
2. SET 1B – SINGLE SWING: Electric Dogging (Optional Hinge Edge Guard)
  - 1 each Hollow Metal Frame – Single or Double Rabbet Jambs, as required
  - 1 each Integrated Door - D3677EDM, flush or vision lites as required
  - 1 each Full Mortise Continuous Hinge/Edge Guard – HG-315-CTP

- 1 each Lever Trim – D3080 series
- 1 each Mortise Cylinder – By others, as required
- 1 each Wire Transfer – D4612-1
- 1 each Transformer D4605 (For EDM)
- 1 each Rectifier D4603 (For EDM)
- 1 set Smoke Seals DS88D
- 1 each Protection Plate(s), as required
- 1 each Door Stop, as required
- 1 set Power Operator -4000 series
- 2 each Actuators, as required
- 1 set Safety Sensor(s), as required
- 3. SET 1C – SINGLE SWING: Electric Dogging (Optional Swing Clear Hinge)
  - 1 each Hollow Metal Frame – Single or Double Rabbet Jambs, as required
  - 1 each Integrated Door - D3677EDM, flush or vision lites as required
  - 1 each Swing Clear Continuous Hinge/Edge Guard – HG-329-CTP
  - 1 each Lever Trim – D3080 series
  - 1 each Mortise Cylinder – By others, as required
  - 1 each Wire Transfer – D4612-SP
  - 1 each Transformer D4605 (For EDM)
  - 1 each Rectifier D4603 (For EDM)
  - 1 set Smoke Seals DS88D
  - 1 each Protection Plate(s), as required
  - 1 each Door Stop, as required
  - 1 set Power Operator -4000 series
  - 2 each Actuators, as required
  - 1 set Safety Sensor(s), as required
- 4. SET 2A – SINGLE SWING: Electric Latch Retraction (Standard Black Prime Hinge)
  - 1 each Hollow Metal Frame – Single or Double Rabbet Jambs, as required
  - 1 each Integrated Door - D3677EL, flush or vision lites as required
  - 1 each Full Mortise Continuous Hinge – FM-200-CTP
  - 1 each Lever Trim – D3080 series
  - 1 each Mortise Cylinder – By others, as required
  - 1 each Wire Transfer – D4612-1
  - 1 each Power Supply D29-0634 (For EL)
  - 1 set Smoke Seals DS88D
  - 1 each Protection Plate(s), as required
  - 1 each Door Stop, as required
  - 1 set Power Operator -4000 series
  - 2 each Actuators, as required
  - 1 set Safety Sensor(s), as required
- 5. SET 2B – SINGLE SWING: Electric Latch Retraction (Optional Hinge Edge Guard)
  - 1 each Hollow Metal Frame – Single or Double Rabbet Jambs, as required
  - 1 each Integrated Door - D3677EL, flush or vision lites as required
  - 1 each Full Mortise Continuous Hinge/Edge Guard – HG-315-CTP
  - 1 each Lever Trim – D3080 series
  - 1 each Mortise Cylinder – By others, as required
  - 1 each Wire Transfer – D4612-1
  - 1 each Power Supply D29-0634

- 1 set Smoke Seals DS88D
- 1 each Protection Plate(s), as required
- 1 each Door Stop, as required
- 1 set Power Operator -4000 series
- 2 each Actuators, as required
- 1 set Safety Sensor(s), as required
- 6. SET 2C – SINGLE SWING: Electric Latch Retraction (Optional Swing Clear Hinge)
  - 1 each Hollow Metal Frame – Single or Double Rabbet Jambs, as required
  - 1 each Integrated Door - D3677EL, flush or vision lites as required
  - 1 each Swing Clear Continuous Hinge/Edge Guard – HG-329-CTP
  - 1 each Lever Trim – D3080 series
  - 1 each Mortise Cylinder – By others, as required
  - 1 each Wire Transfer – D4612-SP
  - 1 each Power Supply D29-0634
  - 1 set Smoke Seals DS88D
  - 1 each Protection Plate(s), as required
  - 1 each Door Stop, as required
  - 1 set Power Operator -4000 series
  - 2 each Actuators, as required
  - 1 set Safety Sensor(s), as required
- 7. SET 3A – SAME SWING PAIR: Electric Dogging (Standard Black Prime Hinge)
  - 1 each Hollow Metal Frame – Single or Double Rabbet Jambs, as required
  - 2 each Integrated Doors - D3676EDM, flush or vision lites as required
  - 2 each Full Mortise Continuous Hinges – FM-200-CTP
  - 1 or 2 each Lever Trim – D3080 series (Both leaves, or active leaf only)
  - 1 or 2 each Mortise Cylinders – By others, as required
  - 2 each Wire Transfers – D4612-1
  - 1 each Transformer D4605 (For EDM)
  - 1 each Rectifier D4603 (For EDM)
  - 1 set Smoke Seals DS88D/DS77D
  - 1 pair Meeting Stile Astragals 29-324\_P
  - 2 each Protection Plate(s), as required
  - 2 each Door Stops, as required
  - 1 set Power Operator -4000 series
  - 2 each Actuators, as required
  - 1 set Safety Sensor(s), as required
- 8. SET 3B – SAME SWING PAIR: Electric Dogging (Optional Hinge Edge Guard)
  - 1 each Hollow Metal Frame – Single or Double Rabbet Jambs, as required
  - 2 each Integrated Doors - D3676EDM, flush or vision lites as required
  - 2 each Full Mortise Continuous Hinges/Edge Guard – HG-315-CTP
  - 1 or 2 each Lever Trim – D3080 series (Both leaves, or active leaf only)
  - 1 or 2 each Mortise Cylinders – By others, as required
  - 2 each Wire Transfers – D4612-1
  - 1 each Transformer D4605 (For EDM)
  - 1 each Rectifier D4603 (For EDM)
  - 1 set Smoke Seals DS88D/DS77D
  - 1 pair Meeting Stile Astragals 29-324\_P
  - 2 each Protection Plate(s), as required

- 2 each Door Stops, as required
  - 1 set Power Operator -4000 series
  - 2 each Actuators, as required
  - 1 set Safety Sensor(s), as required
9. SET 3C – SAME SWING PAIR: Electric Dogging (Optional Swing Clear Hinge)
- 1 each Hollow Metal Frame – Single or Double Rabbet Jambs, as required
  - 2 each Integrated Doors - D3676EDM, flush or vision lites as required
  - 2 each Swing Clear Continuous Hinges/Edge Guard – HG-329-CTP
  - 1 or 2 each Lever Trim – D3080 series (Both leaves, or active leaf only)
  - 1 or 2 each Mortise Cylinders – By others, as required
  - 2 each Wire Transfers – D4612-SP
  - 1 each Transformer D4605 (For EDM)
  - 1 each Rectifier D4603 (For EDM)
  - 1 set Smoke Seals DS88D/DS77D
  - 1 pair Meeting Stile Astragals 29-324\_P
  - 2 each Protection Plate(s), as required
  - 2 each Door Stops, as required
  - 1 set Power Operator -4000 series
  - 2 each Actuators, as required
  - 1 set Safety Sensor(s), as required
10. SET 4A – SAME SWING PAIR: Electric Latch Retraction (Std. Black Prime Hinge)
- 1 each Hollow Metal Frame – Single or Double Rabbet Jambs, as required
  - 2 each Integrated Doors - D3676EL, flush or vision lites as required
  - 2 each Full Mortise Continuous Hinges – FM-200-CTP
  - 1 or 2 each Lever Trim – D3080 series (Both leaves, or active leaf only)
  - 1 or 2 each Mortise Cylinders – By others, as required
  - 2 each Wire Transfers – D4612-1
  - 1 each Power Supply D29-0634 (For EL)
  - 1 set Smoke Seals DS88D/DS77D
  - 1 pair Meeting Stile Astragals 29-324\_P
  - 2 each Protection Plate(s), as required
  - 2 each Door Stops, as required
  - 1 set Power Operator -4000 series
  - 2 each Actuators, as required
  - 1 set Safety Sensor(s), as required
11. SET 4B – SAME SWING PAIR: Electric Latch Retraction (Optional Hinge Edge Guard)
- 1 each Hollow Metal Frame – Single or Double Rabbet Jambs, as required
  - 2 each Integrated Doors - D3676EL, flush or vision lites as required
  - 2 each Full Mortise Continuous Hinges/Edge Guard – HG-315-CTP
  - 1 or 2 each Lever Trim – D3080 series (Both leaves, or active leaf only)
  - 1 or 2 each Mortise Cylinders – By others, as required
  - 2 each Wire Transfers – D4612-1
  - 1 each Power Supply D29-0634
  - 1 set Smoke Seals DS88D/DS77D
  - 1 pair Meeting Stile Astragals 29-324\_P
  - 2 each Protection Plate(s), as required
  - 2 each Door Stops, as required

- 1 set Power Operator -4000 series
  - 2 each Actuators, as required
  - 1 set Safety Sensor(s), as required
12. SET 4C – SAME SWING PAIR: Electric Latch Retraction (Optional Swing Clear Hinge)
- 1 each Hollow Metal Frame – Single or Double Rabbet Jambs, as required
  - 2 each Integrated Doors - D3676EL, flush or vision lites as required
  - 2 each Swing Clear Continuous Hinges/Edge Guard – HG-329-CTP
  - 1or 2 each Lever Trim – D3080 series (Both leaves, or active leaf only)
  - 1 or 2each Mortise Cylinders – By others, as required
  - 2 each Wire Transfers – D4612-SP
  - 1 each Power Supply D29-0634
  - 1 set Smoke Seals DS88D/DS77D
  - 1 pair Meeting Stile Astragals 29-324\_P
  - 2 each Protection Plate(s), as required
  - 2 each Door Stops, as required
  - 1 set Power Operator -4000 series
  - 2 each Actuators, as required
  - 1 set Safety Sensor(s), as required
13. SET 5A – DOUBLE EGRESS PAIR: Electric Dogging (Standard Black Prime Hinge)
- 1 each Hollow Metal Frame – Double Egress Jambs, as required
  - 2 each Integrated Doors - D3676EDM, flush or vision lites as required
  - 2 each Full Mortise Continuous Hinges – FM-200-CTP
  - 2 each Wire Transfers – D4612-1
  - 1 each Transformer D4605 (For EDM)
  - 1 each Rectifier D4603 (For EDM)
  - 1 set Smoke Seals DS88D/DS77D
  - 1 each Edge Guard/Astragal EG-T-308
  - 2 each Protection Plate(s), as required
  - 2 each Door Stops, as required
  - 1 set Power Operator -4000 series
  - 2 each Actuators, as required
  - 1 set Safety Sensor(s), as required
14. SET 5B – DOUBLE EGRESS PAIR: Electric Dogging (Optional Hinge Edge Guard)
- 1 each Hollow Metal Frame – Double Egress Jambs, as required
  - 2 each Integrated Doors - D3676EDM, flush or vision lites as required
  - 2 each Full Mortise Continuous Hinges/Edge Guard – HG-315-CTP
  - 2 each Wire Transfers – D4612-1
  - 1 each Transformer D4605 (For EDM)
  - 1 each Rectifier D4603 (For EDM)
  - 1 set Smoke Seals DS88D/DS77D
  - 1 each Edge Guard/Astragal EG-T-308
  - 2 each Protection Plate(s), as required
  - 2 each Door Stops, as required
  - 1 set Power Operator -4000 series
  - 2 each Actuators, as required
  - 1 set Safety Sensor(s), as required
15. SET 5C – DOUBLE EGRESS PAIR: Electric Dogging (Optional Swing Clear Hinge)

- 1 each Hollow Metal Frame – Double Egress Pocket Jambs, as required
  - 2 each Integrated Doors - D3676EDM, flush or vision lites as required
  - 2 each Swing Clear Continuous Hinges/Edge Guard – HG-329-CTP
  - 2 each Wire Transfers – D4612-SP
  - 1 each Transformer D4605 (For EDM)
  - 1 each Rectifier D4603 (For EDM)
  - 1 set Smoke Seals DS88D/DS77D
  - 1 each Edge Guard/Astragal EG-T-308
  - 2 each Protection Plate(s), as required
  - 2 each Door Stops, as required
  - 1 set Power Operator -4000 series
  - 2 each Actuators, as required
  - 1 set Safety Sensor(s), as required
16. SET 6A – DOUBLE EGRESS PAIR: Electric Latch Retraction (Std. Black Prime Hinge)
- 1 each Hollow Metal Frame – Double Egress Jambs, as required
  - 2 each Integrated Doors - D3676EL, flush or vision lites as required
  - 2 each Full Mortise Continuous Hinges – FM-200-CTP
  - 2 each Wire Transfers – D4612-1
  - 1 each Power Supply D29-0634 (For EL)
  - 1 set Smoke Seals DS88D/DS77D
  - 1 each Edge Guard/Astragal EG-T-308
  - 2 each Protection Plate(s), as required
  - 2 each Door Stops, as required
  - 1 set Power Operator -4000 series
  - 2 each Actuators, as required
  - 1 set Safety Sensor(s), as required
17. SET 6B – DOUBLE EGRESS PAIR: Electric Latch Retraction (Opt. Hinge Edge Guard)
- 1 each Hollow Metal Frame – Double Egress Jambs, as required
  - 2 each Integrated Doors - D3676EL, flush or vision lites as required
  - 2 each Full Mortise Continuous Hinges/Edge Guard – HG-315-CTP
  - 2 each Wire Transfers – D4612-1
  - 1 each Power Supply D29-0634
  - 1 set Smoke Seals DS88D/DS77D
  - 1 each Edge Guard/Astragal EG-T-308
  - 2 each Protection Plate(s), as required
  - 2 each Door Stops, as required
  - 1 set Power Operator -4000 series
  - 2 each Actuators, as required
  - 1 set Safety Sensor(s), as required
18. SET 6C – DOUBLE EGRESS PAIR: Electric Latch Retraction (Opt. Swing Clear Hinge)
- 1 each Hollow Metal Frame – Double Egress Pocket Jambs, as required
  - 2 each Integrated Doors - D3676EL, flush or vision lites as required
  - 2 each Swing Clear Continuous Hinges/Edge Guard – HG-329-CTP
  - 2 each Wire Transfers – D4612-SP
  - 1 each Power Supply D29-0634

- 1 set Smoke Seals DS88D/DS77D
- 1 each Edge Guard/Astragal EG-T-308
- 2 each Protection Plate(s), as required
- 2 each Door Stops, as required
- 1 set Power Operator -4000 series
- 2 each Actuators, as required
- 1 set Safety Sensor(s), as required

### **2.03 RELATED EQUIPMENT**

- A. ACTIVATING DEVICE: Shall be located on each side of the opening as per ANSI Safety Standard A117. Activating device shall be one of the following:
  - 1. Pushbutton: 1" Diameter (25 mm) round, red pushbutton switch.
  - 2. Push plate: 6" Diameter (152 mm) round, stainless steel switch.

### **2.04 RELATED WORK REQUIREMENTS**

- A. ELECTRICAL: 120 VAC, 60 cycle, 1 phase, 15 amp. Non-North American voltages can be 240 VAC (operator must have 240 volt power supply)
- B. DOOR AND HARDWARE: Labeled door and frame assembly as per NFPA 101 Safety to Life Requirements and NFPA 80 Fire Door Requirements. All hardware used must be UL listed for retarding the spread of fire or smoke.

### **2.05 FINISHES**

- A. DOOR FACE:
  - 1. Factory primed for field-applied paint (Standard)
  - 2. Factory prefinished Tnemec paint in color as selected by Architect
  - 3. Factory applied HPL plastic laminate faces in color and as selected by Architect
  - 4. 304 Stainless Steel – Satin or Mirror finish
- B. EXIT DEVICE PUSH BAR:
  - 1. Satin Stainless Steel (Standard) – BHMA 630 (US32D)
  - 2. Satin Aluminum Anodized – BHMA 628 (US28)
  - 3. Dark Bronze Anodized – BHMA 313 (10B)
  - 4. Black Anodized – BHMA 335
  - 5. Bright Stainless Steel – BHMA 629 (US32)
  - 6. Bright Brass – BHMA 605 (US3)
  - 7. Satin Brass – BHMA 606 (US4)
  - 8. Bright Bronze – BHMA 611 (US9)
  - 9. Satin Bronze – BHMA 612 (US10)
  - 10. Powdercoat finish as specified by Architect
- C. CONTINUOUS STEEL PINNED HINGES:
  - 1. Black Powdercoat (Primed for painting) – BHMA 600 (USP)
  - 2. Satin Stainless Steel – BHMA 630 (US32D)
- D. LEVER/TRIM:
  - 1. Bright Brass – BHMA 605 (US3)
  - 2. Satin Brass – BHMA 606 (US4)
  - 3. Bright Bronze – BHMA 611 (US9)

4. Satin Bronze – BHMA 612 (US10)
5. Dark Bronze – 10B
6. Bright Chrome – BHMA 626 (US26)
7. Satin Chrome – BHMA 626 (US26D)

**E. SMOKE SEALS:**

1. Adhesive Seals: Dark Brown
2. Extruded Seals: Satin Aluminum or Dark Bronze

**F. KICK PLATES: Stainless Steel – BHMA 630 (US32D)**

**PART III - EXECUTION**

**3.01 EXAMINATION**

Site Verification of Conditions: Installer must verify that base conditions previously installed under other sections are acceptable for product installation according to with manufacturer's instructions. Notify the Contractor in writing of conditions detrimental to the proper and timely completion of work. Do not start work until all negative conditions are corrected in a manner acceptable to the installer and manufacturer.

**3.02 INSTALLATION**

- A. GENERAL: Install door units plumb, level and true to line, without warp or rack of frames or sash with manufacturer's prescribed tolerances. Provide support and anchor in place.
- B. ELECTRICAL: General or electrical contractor to install all wiring to operator on a separate circuit breaker routed into header.

**3.03 CLEANING, ADJUSTMENT AND PROTECTION**

- A. CLEANING: After installation, installer to take following steps:
  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. ADJUSTMENT: Installer to adjust operator and controls for optimum condition and safety.
- C. ADVISE CONTRACTOR: of precautions required through the remainder of the construction period, to ensure that doors will be without damage or deterioration (other than normal weathering) at the time of acceptance.

**END OF SECTION**