SECTION 087813 - ALL-GLASS-ENTRANCE HARDWARE

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Pivots.
2. Push/pull operating trim.
3. Concealed closers.
4. Concealed power door operators & related accessories.
5. Top mount magnetic locks.

B. Related Requirements:

1. Section 087113 "Power Door Operators" for low-energy power operators and low-energy power-assist operators.
2. Section 088000 "Glazing" for glass.
3. Section084126.23 "Interior All-Glass Entrances"

1.2 COORDINATION

A. Floor-Recessed All-Glass-Entrance Hardware: Coordinate layout and installation with floor construction.

1. Anchoring inserts into concrete.

B. Installation Templates: Distribute for all-glass-entrance doors and other work specified to be factory prepared. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing all-glass-entrance hardware to comply with indicated requirements.

C. Security: Coordinate installation of all-glass-entrance door hardware, keying, and access control with Owner's security consultant.

D. Electrical System Roughing-In: Coordinate layout and installation of electrified all-glass-entrance door hardware with connections to power supplies and building safety and security systems.

1.3 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

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1. Conference participants to include Installer's Architectural Hardware Consultant and Owner's security consultant.

1.4 ACTION SUBMITTALS

A. Product Data: For each type of product.

1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes.
2. Include operating characteristics, electrical characteristics, and furnished accessories.

B. Shop Drawings: For all-glass-entrance door hardware.

1. Include diagrams for power, signal, and control wiring.
2. Include details of interface of electrified all-glass-entrance door hardware and building safety and security systems.
3. Door hardware to be installed on glass doors.

C. All-Glass-Entrance Door Hardware Schedule: Prepared by or under the supervision of Installer's Architectural Hardware Consultant. Coordinate all-glass-entrance door hardware schedule with all-glass-entrance doors, and related work to ensure proper size, thickness, hand, function, and finish of door hardware.

1. Submittal Sequence: Submit all-glass-entrance door hardware schedule concurrent with submissions of Product Data, Samples, and Shop Drawings. Coordinate submission of all-glass-entrance door hardware schedule with scheduling requirements of other work to facilitate the fabrication of other work that is critical in Project construction schedule.
2. Format: Use same scheduling sequence and format and use same door numbers as in door hardware schedule in the Contract Documents.
3. Content: Include the following information:

a. Identification number, location, hand, size, and material of each door.
b. Locations of each all-glass-entrance door hardware set, cross-referenced to Drawings on floor plans and to door schedule.
c. Complete designations, including name and manufacturer, type, style, function, size, quantity, function, and finish of each all-glass-entrance door hardware product.
d. Description of electrified all-glass-entrance door hardware sequences of operation and interfaces with other building control systems.
e. Fastenings and other installation information.
f. Explanation of abbreviations, symbols, and designations contained in all-glass-entrance door hardware schedule.
g. Mounting locations for all-glass-entrance door hardware.
h. List of related door devices specified in other Sections for each all-glass-entrance door.

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1.5 INFORMATIONAL SUBMITTALS

A. Product Certificates: For each type of electrified all-glass-entrance door hardware.

B. Qualification Statements: For Installer.

C. Sample warranties.

1.6 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data: For each type of all-glass-entrance door hardware.

B. Schedules: Final all-glass-entrance door hardware schedule.

C. Warranty Documentation:

1. Manufacturers' special warranties.
2. Installer's special warranties.

1.7 QUALITY ASSURANCE

A. Qualifications:

1. Installers: Supplier of products and an employer of workers trained and approved by product manufacturers and of an Architectural Hardware Consultant who is available during the course of the Work to consult Contractor, Architect, and Owner about all-glass-entrance hardware and keying.

    a. Scheduling Responsibility: Preparation of all-glass-entrance door hardware schedule.

2. Engineering Responsibility: Preparation of data for electrified all-glass-entrance door hardware, including Shop Drawings, based on testing and engineering analysis of manufacturer's standard units in assemblies similar to those indicated for this Project.
3. Architectural Hardware Consultant: A person who is experienced in providing consulting services for all-glass-entrance door hardware installations that are comparable in material, design, and extent to that indicated for this Project.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Inventory all-glass-entrance hardware on receipt and provide secure lock-up for all-glass-entrance door hardware delivered to Project site.

B. Tag each item or package separately with identification coordinated with the final all-glass-entrance door hardware schedule, and include installation instructions,

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templates, and necessary fasteners with each item or package.

1.9 WARRANTY

A. Special Warranty: Manufacturer agrees to repair or replace components of all-glass-entrance hardware that fail in materials or workmanship within specified warranty period.

1. Failures include, but are not limited to, the following:

a. Structural failures, including excessive deflection, cracking, or breakage.
b. Faulty operation of all-glass-entrance doors and all-glass-entrance door hardware.
c. Deterioration of metals, metal finishes, and other materials beyond normal weathering and use.

2. Warranty Period: Two years from date of Substantial Completion unless otherwise indicated below:

a. Concealed Overhead Closers: Five years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 SOURCE LIMITATIONS

A. Source Limitations: Obtain each type of all-glass-entrance hardware from single manufacturer.

1. Provide electrified all-glass-entrance door hardware from same manufacturer as mechanical all-glass-entrance door hardware unless otherwise indicated. Manufacturers that perform electrical modifications and that are listed by a testing and inspecting agency acceptable to authorities having jurisdiction are acceptable.

2.2 PERFORMANCE REQUIREMENTS

A. Electrified All-Glass-Entrance Door Hardware: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

B. Accessibility Requirements: For door hardware on all-glass-entrance doors in an accessible route, comply with the DOJ's "2010 ADA Standards for Accessible Design".

1. Provide operating devices that do not require tight grasping, pinching, or twisting of the wrist and that operate with a force of not more than **5 lbf**.

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2. Comply with the following maximum opening-force requirements:

   a. Interior, Hinged Doors: **5 lbf** applied perpendicular to door.

3. Adjust door closer sweep periods so that, from an open position of 90 degrees, the door will take at least 5 seconds to move to a position of 12 degrees from the latch.

2.3 PIVOTS

A. Pivots: ANSI/BHMA A156.4; components in sizes, quantities, and types recommended by manufacturer for all-glass application indicated on Drawings.

1. Manufacturers: Subject to compliance with requirements, provide products by the following:

   a. CRL C.R. Laurence.

2. Heavy Duty Adjustable Floor Mount Bottom Pivot:

   a. Type: Manufacturer's standard adjustable floor mount free swing pivot and rail mount left handed offset pivot receptor arm with cover plate to match rail.
   b. Pivot Material: Steel.
   c. Product: CRL Heavy-Duty Adjustable Dual Purpose Bottom Pivot Set. Model: CRL 8010HDP or as needed for use with specified bottom rail system, center hung door system.
   d. Coordinate with flooring installation for finish floor height, ceiling soffit finished height.
   e. Finish: 628 - Aluminum Anodized.

2.4 PUSH/PULL OPERATING TRIM

A. Push/Pull Operating Trim: Components in sizes, quantities, and types recommended by manufacturer for all-glass application indicated on Drawings.

1. Manufacturers: Subject to compliance with requirements, provide products by the following:

   a. Rockwood Hardware.

2. Ladder Pulls:

   a. Pulls for 10 mm thick tempered glass to 12 mm thick tempered glass.
   b. Profile/Style: 1-1/4-inch diameter with round mounting posts.
   c. Length: 48 inches.
   d. Mounting: Back-to-back.

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e. Minimum Pull Clearance: 1-1/2 inches from face of door.
f. Pull Material: White Oak with Stainless steel tubing.
g. Pull Diameter: 1-1/4" round OD.
h. Grade / Finish: 304 Grade; US32D, **Satin Stainless Steel ends** & mounting posts, with **White Oak** center/grip section.
i. Model: Rockwood, RM4020_Glass Straight Architectural pull with Wood Grip, flat stainless steel ends. For glass doors, Heavy Duty Back-to-Back door mounting.

2.5 CONCEALED CLOSERS

A. Concealed Closers ((Overhead, Manual)): ANSI/BHMA A156.4; in size and type as recommended by manufacturer for all-glass application indicated on Drawings.

1. Manufacturers: Subject to compliance with requirements, provide products by the following:

a. LCN An Allegion Co.

2. Heavy-Duty Concealed Overhead Closer:

a. Closer Type: Grade 2, center pivoting, with cast-iron body for installation in header channel.
b. Arm Type: Concealed end load arm, standard arm.
c. Door Swing Type: Single acting. Handed.
d. Closing Operation: Adjustable sweep and latch speeds controlled by key-operated valves.
e. Spindle: 3/4 inch high.
f. Function: Regular.
g. Backcheck: Adjustable.
h. Closing Power: Spring size 2.
i. Product: LCN 2032 -3038B Back bumper track, non-hold open (BUMP), Spring #2 for up to 42" wide door.

2.6 CONCEALED POWER DOOR OPERATORS

A. Provide the following products:

1. Manufacturer: LCN, an Allegion Company.
2. Product: LCN 2810 iQ Series. Senior Swing is a heavy-duty electromechanical swing door operator. Designed for a concealed mount on a single door application. Center pivot arm. Handed. Grade 1 (ANSI A156.19. ADA)
3. Power: 115VAC Single Phase, @60Hz, 230VAC single phase @50Hz. Provide dedicated power to operator, ref. Electrical.
4. Mounting: Recessed, concealed. Center Pivot, positive stop, push side.
5. temp
6. Provide all accessories required for a complete installation. Coordinate with Card

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Reader access control.

7. Provide recess boxes for flush mounting of actuators.
8. Actuator Product: LCN 8310-810DA Touchless actuator, double gang box. Stainless steel face, for heavy duty applications, 2-24" range for wave-to-open operation. Provide sensors for proximity, tie into magnetic locking device.
9. Provide wired connection with double gang electrical box, conduit to above ceiling. Ref. Electrical.

2.7 MAGNETIC LOCKS

A. Product: Schlage, Model: GF3000, TRD (for recessed, concealed header mount)

1. Optional Product: Schlage, Model: GF3000, BRD (for recessed in floor mount)

B. Install conduit to locks, coordinate connection with card reader access system. Ref. Electrical.

2.8 MATERIALS

A. Aluminum: ASTM B221 with strength and durability characteristics of not less than Alloy 6063-T5 for extruded bars, rods, profiles, and tubes. ASTM B209 for sheet and plate.

B. Stainless Steel Cladding: ASTM A240/A240M or ASTM A666, Type 304.

C. Stainless Steel Sheet, Strip, Plate, and Flat Bars: ASTM A240/A240M or ASTM A666 austenitic stainless steel, Type 304.

D. Stainless Steel Tubing: ASTM A240/A240M or ASTM A666 austenitic stainless steel, Type 304.

E. Stainless Steel Bars and Shapes: ASTM A276/A276M, Type 304.

F. Joint Sealants and Backings: Provide joint sealants, backings, and other related materials in accordance with Section 079200 "Joint Sealants."

2.9 FABRICATION

A. Manufacturer's Nameplate: Do not provide products that have manufacturer's name or trade name displayed in a visible location.

1. Manufacturer's identification is permitted on rim of lock cylinders only.

B. Anchors and Fasteners: Manufacturer's standard concealed anchors and fasteners. Do not use exposed fasteners.

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2.10 GENERAL FINISH REQUIREMENTS

A. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

B. Appearance of Finished Work: Variations in appearance of abutting or adjacent pieces are acceptable if they are within one-half of the range of approved Samples. Noticeable variations in the same piece are unacceptable. Variations in appearance of other components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

2.11 FINISHES

A. All-Glass-Entrance Door Hardware: Provide finishes complying with ANSI/BHMA A156.18 as indicated in all-glass-entrance door hardware schedule.

B. Provide finishes as follows for items not scheduled in all-glass-entrance door hardware schedule:

1. Aluminum:

a. Clear Anodic Finish: AAMA 611, AA-M12C22A41, Class I, 0.018 mm or thicker.

2. Stainless Steel Tubing:

a. Finish: 180-Grit Polished Finish: Uniform, directionally textured finish.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine areas and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.

B. Examine roughing-in for electrical power systems to verify actual locations of wiring connections before electrified all-glass-entrance door hardware installation.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION OF ALL-GLASS-ENTRANCE HARDWARE

A. Install each all-glass-entrance hardware item to comply with manufacturer's written instructions.

B. Set units level, plumb, and true to line, with uniform joints.

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C. Maintain uniform clearances between adjacent components.

D. Mounting Heights: Mount all-glass-entrance door hardware units at heights indicated on Drawings unless otherwise indicated or required to comply with governing regulations.

E. Key-Card Control System: Reference Electrical.

F. Boxed Power Supplies: Locate power supplies as indicated or, if not indicated, above accessible ceilings. Verify location with Architect.

1. Configuration: Provide one power supply for each door opening with electrified door hardware.

G. Set, seal, and grout floor magnet cases as required to suit hardware and substrate indicated.

3.3 ADJUSTING

A. Initial Adjustment: Adjust and check each operating item of all-glass-entrance door hardware and each all-glass-entrance door to ensure proper operation or function of every unit. Replace units that cannot be adjusted to operate as intended. Adjust all-glass-entrance door control devices to compensate for final operation of heating and ventilating equipment and to comply with referenced accessibility requirements.

1. Door Closers: Adjust sweep period to comply with accessibility requirements and requirements of authorities having jurisdiction.

B. Occupancy Adjustment: Approximately three months after date of Substantial Completion, Installer's Architectural Hardware Consultant to examine and readjust each item of all-glass-entrance door hardware, including adjusting operating forces, as necessary to ensure function of all-glass-entrance doors, door hardware, and electrified door hardware.

3.4 CLEANING AND PROTECTION

A. Clean adjacent surfaces soiled by all-glass-entrance hardware installation.

B. Clean operating items as necessary to restore proper function and finish.

C. Provide final protection and maintain conditions that ensure that all-glass-entrance hardware is without damage or deterioration at time of Substantial Completion.

3.5 MAINTENANCE SERVICE

A. Maintenance Tools and Instructions: Furnish a complete set of specialized tools and

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maintenance instructions for Owner's continued adjustment, maintenance, and removal and replacement of all-glass-entrance hardware.

3.6 ALL-GLASS-ENTRANCE DOOR HARDWARE SCHEDULE

A. Hardware Schedule, see Section 087100.

END OF SECTION 087813

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