

AWS#	2101 S Michigan Ave	02/16/18
SECTION 08710 DOOR HARDWARE		
PART 1 - GENERAL		
1.1 RELATED DOCUMENTS		
A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.		
1.2 SUMMARY		
A. Section Includes		
1. Furnishing and installation of all mechanical and electrical finish hardware necessary for all doors, and hardware as specified herein and as enumerated in hardware sets and as indicated and required by actual conditions at the building. The hardware shall include the furnishing of all necessary screws, bolts, expansion shields, drop plates, and all other devices necessary for the proper application of the hardware. Installation shall include field modification and preparation of existing doors and/or frames for new hardware being installed. Provide necessary fillers, Dutchmen, reinforcements, and fasteners for mounting new hardware and to cover existing door/frame prep.		
B. Vendors		
1. Door hardware covered in this section shall be provided and installed by the General Contractor, unless noted otherwise on the drawings.		
C. Related Sections		
1. Division 6 Section - FINISH CARPENTRY.		
2. Division 8 Section - HOLLOW METAL DOORS AND FRAMES.		
3. Division 8 Section - WOOD DOORS.		
4. Division 8 Section - ALUMINUM FRAMED STOREFRONTS.		
5. Section 08461 - SLIDING AUTOMATIC ENTRANCE DOORS for entrance doors packaged with automatic operators and controls.		
6. Section 08720 - AUTOMATIC DOOR OPERATORS for doors with low-energy operators.		
7. Division 16 Section - ELECTRICAL for electrical connections including conduit and wiring for electrified hardware.		
D. Specific Omissions: Hardware for the following is specified or indicated elsewhere, unless specifically listed in the hardware sets:		
1. Windows		
2. Cabinets of all kinds, including open wall shelving and locks.		
1.3 REFERENCES		
A. Applicable state and local building codes and standards.		
B. FIRE/LIFE SAFETY		
1. NFPA - National Fire Protection Association		
a. NFPA 70 - National Electric Code		
b. NFPA 80 - Standard for Fire Doors and Fire Windows		
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B. Note that even though an acceptable substitute manufacturer may be listed, the product must provide all the functions and features of the specified product or it will not be approved.		
Item	Scheduled Manufacturer	Acceptable Substitute
Hinges	Hager (HAG)	Ives, McKinney
Emergency Release Pivots	Ives (IVE)	Ives, McKinney
Double Lipped Strikes	Donjo (DON)	Hager, McKinney
Emergency Stop	Hager (HAG)	McKinney, Stanley
Flush Bolts & Coordinators	Ives (IVE)	Don-jo, Rockwood, Hager
Locksets	Falcon (FAL)	Schlage (SCH)
Aluminum Door Locks - Narrow Style	Adams Rite (ADA)	No Substitute
Exit Devices & Mullions	Adams Rite (ADA) or Falcon (FAL)	No Substitute
Electric Strikes	Adams Rite (ADA) or Von Duprin (VON)	No Substitute
Door Closers	Falcon (FAL)	No Substitute
Door Closers Concealed	LCN (LCN)	No Substitute
Electro-Mechanical Automatic Operators	See Section 08720	See Section 08720
Door Pulls at Aluminum Doors	Kawneer (KAW)	No Substitute
Door Trim	Ives (IVE)	Don-jo, Rockwood
Protection Plates	Ives (IVE)	Don-jo, Rockwood
Overhead Stops	Glynn-Johnson (GLY)	Rixson, Sargent
Stops	Ives (IVE)	Don-jo, Rockwood
Thresholds	Pemco (PEM)	No Substitute
Weatherstripping	Pemco	National Guard Products
Silencers	Ives (IVE)	Don-jo, Rockwood
Magnetic Holders	LCN (LCN)	Rixson, Sargent
Latch Protector	Ives (IVE)	Don-jo, Rockwood
Bi-pass Hardware	Hager (HAG)	Henderson, Stanley
Bi-fold Hardware	Hager (HAG)	Henderson, Stanley
Robe Hooks	Bobrick (BOB)	No Substitute
Cylinders & Keying	Schlage (SCH)	No Substitute
Button Mini Boxes, Cobra Locks	Schlage Electronic Security (SEC)	No Substitute
Key Cabinets	Telkee (TEL)	HFC, Lund
Auto Operators	Record-USA (REC)	Besam
Keypad Locksets	Yale (YAL)	No Substitute
C. Hand of Door: Drawings show direction of slide, swing, or hand of each door leaf. Furnish each item of hardware for proper installation and operation of door movement as shown.		
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c. NFPA 101 - Life Safety Code		
d. NFPA 105 - Smoke and Draft Control Door Assemblies		
C. UL - Underwriters Laboratories		
1. UL 10C - Positive Pressure Tests of Fire Door Assemblies		
2. UL 1784 - Air Leakage Tests of Door Assemblies		
3. UL 305 - Panic Hardware		
D. Accessibility		
1. ADA - Americans with Disabilities Act		
2. ICC (CABO) / ANSI A117.1 - Accessible and Usable Buildings and Facilities		
E. DHI - Door and Hardware Institute		
1. Sequence and Format for the Hardware Schedule		
2. Recommended Locations for Builders Hardware		
F. ANSI - American National Standards Institute		
1. ANSI/BHMA A156.1 - A156.24 - Standards for Hardware and Specialties		
1.4 SUBMITTALS		
A. General: Submit the following in accordance with Conditions of Contract and Division 1 requirements. Prior to submittal field verify existing doors and/or frames receiving new hardware and/or existing conditions receiving new openings. Verify new hardware is compatible with the existing door/frame preparation and/or existing conditions. Advise architect within the submittal package of incompatibility or issues.		
B. Catalog Cuts: Product data including manufacturers' technical product data for each item of door hardware, installation instructions, and maintenance of operating parts and finish, and other information necessary to show compliance with requirements.		
C. Final Hardware Schedule Content: Submit schedule with hardware sets in vertical format as illustrated by the Sequence of Format for the Hardware Schedule as published by the Door and Hardware Institute. Indicate complete designations of each item required for each door or opening. Include the following information:		
1. Door Index; include door number, heading number, and Architects hardware set number.		
2. Opening Lock Function Spreadsheet; list locking device and function for each opening.		
3. Type, style, function, size, and finish of each hardware item.		
4. Name and manufacturer of each item.		
5. Fastenings and other pertinent information.		
6. Location of each hardware set cross-referenced to indications on Drawings.		
7. Explanation of all abbreviations, symbols, and codes contained in schedule.		
8. Mounting locations for hardware.		
9. Door and frame sizes and materials.		
10. Name and phone number for the local manufacturer's representative for each product.		
D. Where the hardware specified is not adaptable to the finished shape or size of the members requiring hardware, furnish suitable types having the same operation and quality as the type specified, subject to the Architect's approval.		
2.2 MATERIALS		
A. Fasteners		
1. Provide hardware manufactured to conform to published templates, generally prepared for machine screw installation.		
2. Furnish screws for installation with each hardware item. Finish exposed (under any condition) screws to match hardware finish, or, if exposed in surfaces of other work, to match finish of this other work as closely as possible including "prepared for paint" surfaces to receive painted finish.		
3. Provide concealed fasteners for hardware units that are exposed when door is closed except to the extent that no standard units of type specified are available with concealed fasteners. Do not use thru-bolts for installation where bolt head or nut on opposite face is exposed in other work unless their use is the only means of reinforcing the work adequately to fasten the hardware securely. Review door specification and advise Architect if thru-bolts are required.		
4. Hardware shall be installed with the fasteners provided by the hardware manufacturer.		
B. Hinges		
1. Provide five-knuckle, ball bearing hinges of type, material, and height as outlined in the following guide for this specification:		
a. 1-3/4 inch thick doors, up to and including 36 inches wide:		
Exterior: standard weight, BB1191 stainless steel, 4 1/2 inches high		
Interior: standard weight, BB1279 steel, 4 1/2 inches high		
b. 1-3/4 inch thick doors over 36 inches wide:		
Exterior: heavy weight, BB1199 stainless steel, 4 1/2 inches high		
Interior: heavy weight, BB1168 steel, 4 1/2 inches high		
2. Provide three hinges per door leaf for doors 90 inches or less in height, and one additional hinge for each 30 inches of additional door height.		
3. Hinge Pins: Except as otherwise indicated, provide hinge pins as follows:		
a. Steel Hinges: Steel pins		
b. Non-Ferrous Hinges: Stainless steel pins		
c. Out-Swinging Exterior Doors: Non-removable pins		
d. Out-Swinging Interior Lockable Doors: Non-removable pins		
e. Interior Non-lockable Doors: Non-rising pins		
4. Adjust hinge width as required for door, frame, and/or wall conditions to allow proper degree of opening.		
5. Provide hinges with electrified option where specified. Provide with sufficient number and gage of concealed wires to accommodate electric function of specified hardware. Locate electric hinge nearest to the electrified locking component.		
6. Provide mortar guard for each electrified hinge specified, unless specified in hollow metal frame specification.		
C. Emergency Release Pivots		
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11. Operational Description of openings with any electrified hardware (locks, exits, electromechanical locks, electric strikes, automatic operators, door position switches, magnetic holders or closer/holder units, and/or access control components). Operational description should include how the door will operate on egress, ingress, and/or fire/smoke alarm connection.		
D. Templates: After final approval of the hardware schedule, provide templates for doors, frames, and other work specified to be factory prepared for the installation of door hardware.		
E. Riser and Wiring Diagrams: After final approval of the hardware schedule, submit riser and wiring diagrams as required for the proper installation of complete electrical, electromechanical, and electromechanical products.		
F. Operations and Maintenance Data: Provide in accordance with Division 1 and include the following:		
1. Complete information on care, maintenance, and adjustment; data on repair and replacement parts, and information on preservation of finishes.		
2. Catalog pages for each product.		
3. Name, address, and phone number of local representative for each manufacturer.		
4. Parts list for each product.		
5. Copy of final approved hardware schedule, edited to reflect "As installed."		
6. Copy of final keying schedule.		
7. As installed "Wiring Diagrams" for each opening connected to power, both low voltage and 110 volts.		
8. One (1) complete set of special tools required for maintenance and adjustment of hardware, including changing of cylinders.		
9. Copy of warranties including appropriate reference numbers for manufacturers to identify the project.		
G. Certificates of Compliance: Upon request of Architect or Authority Having Jurisdiction certificates of compliance for fire-rated hardware and installation instructions shall be made available.		
1.5 QUALITY ASSURANCE		
A. Items specified as "no substitute" shall be provided exactly as listed.		
B. Single Source Responsibility: Obtain each type of hardware (latch and locksets, hinges, exit devices, closers, etc.) from a single manufacturer.		
C. Fire-Rated Openings: Provide door hardware for fire-rated openings that complies with NFPA Standard No. 80 and requirements of authorities having jurisdiction. Provide only items of door hardware that are listed and are identical to products tested by Underwriters Laboratories, Intertek Testing Services, Factory Mutual, or other testing and inspecting organizations acceptable to the authorities having jurisdiction for use on types and sizes of doors indicated in compliance with requirements of fire-rated door and door frame labels.		
D. Electronic Security Hardware: When electrified hardware is included in the hardware specification, the hardware supplier must employ an individual knowledgeable in electrified components and systems, which is capable of producing wiring diagrams and consulting as needed. Coordinate installation of the electronic security hardware with the Architect and		
1. Provide emergency release pivot sets, where specified, offset-hung to allow door to swing open in opposite direction unless detailed otherwise.		
D. Double Lipped Strike		
1. Provide double lip strike, where specified, offset-hung to allow door to swing open in opposite direction unless detailed otherwise. Size for specific frame depth. Coordinate special latchbolt-hole location and/or special template, as required, to operate with the mortise lock being used as specified.		
2. Provide a compatible emergency stop/release as recommended by the manufacturer of the double lip strike or engineered to operate with the double lip strike.		
E. Emergency Stop/Release		
1. Provide emergency stop/release, where specified, for doors with double lip strikes offset-hung to allow door to swing open in opposite direction unless detailed otherwise.		
F. Flush Bolts		
1. Provide automatic and manual flush bolts with stainless steel face plates, levers, and guides and strikes. Provide 12 inch steel rods at doors up to 90 inches in height. Top rods at manual flush bolts for doors over 90 inches in height shall be increased by 6 inches for each additional 6 inches of door height. Provide dust-proof strikes at each bottom flush bolt.		
G. Coordinators		
1. Provide a bar-type coordinating device, surface applied to the underside of the stop at the frame head where pairs of doors are equipped with automatic flush bolts, an astragal, or other hardware that requires synchronized closing of the doors.		
2. Provide a filler bar of the correct length for the unit to span the entire width of the opening, and appropriate brackets for parallel arm door closers and surface vertical rod exit device strikes. Factory-prep coordinators for vertical rod devices if required.		
H. Aluminum Door Locks - Narrow Style		
1. Provide narrow style aluminum door locks as specified. Cylinders: Refer to 2.4 KEYING.		
2. Provide locks with a 1-1/8 inches, or 1-1/2 inches backset as required for door detail with a full 5/8" throw latchbolt.		
3. Provide manufacturers standard strikes unless extended lip strikes are necessary to protect trim.		
I. Cylindrical Locks - Grade 1		
1. Provide grade 1 cylindrical locks, where specified, conforming to ANSI A156.2 Series 4000, Grade 1. Cylinders: Refer to 2.4 KEYING.		
2. Provide locksets able to withstand 1500 inch pounds of torque applied to the locked outside lever without gaining access per ANSI A156.2 Abusive Locked Lever Torque Test and cycle tested to 3 million cycles per ANSI A156.2 Cycle Test.		
3. Provide locks with a standard 2-3/4 inches backset, unless noted otherwise, with a 1/2 inch latch throw. Provide proper latch throw for UL listing at pairs.		
4. Provide locksets with a separate anti-rotation throughbolts, and shall have no exposed screws. Levers shall operate independently, and shall have two external return spring cassettes mounted under roses to prevent lever sag.		
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electrical engineers and provide installation and technical data to the Architect and other related subcontractors. Upon completion of electronic security hardware installation, inspect and verify that all components are working properly.		
1.6 DELIVERY, STORAGE, AND HANDLING		
A. Tag each item or package separately with identification related to the final hardware schedule, and include installation instructions with each item or package.		
B. Each article of hardware shall be individually packaged in manufacturer's original packaging.		
C. Contractor will provide secure lock-up for door hardware delivered to the Project, but not yet installed. Control handling and installation of hardware items so that completion of Work will not be delayed by hardware losses both before and after installation.		
D. Items damaged in shipment shall be replaced promptly and with proper material and paid for by whoever did the damage or caused the damage to occur.		
E. Hardware shall be handled in a manner to avoid damage, marring, or scratching. Irregularities that occur to the hardware after it has been delivered to the Project shall be corrected, replaced, or repaired by the Contractor. Hardware shall be protected against malfunction due to paint, solvent, cleanser, or any chemical agent.		
F. General Contractor must inspect and inventory all deliveries within 24 hours of delivery. All freight damage must be signed as damaged on the Bill of Lading document and reported to the freight carrier. General Contractor must report to supplier any missing, incorrect or damaged goods immediately. Failure to report missing, damaged or incorrect material within 48 hours means the receiver has accepted the shipment as complete and correct.		
1.7 WARRANTY		
A. Provide manufacturer's warranties as specified in Division 1 and as follows:		
1. Closers: 10 years, except electronic closers, 2 years.		
2. Exit Devices: 3 years, except electrified devices, 1 year.		
3. Locksets: 3 years, except electrified locksets, 1 year.		
4. Other hardware: 1 year.		
B. No liability is to be assumed where damage or faulty operation is due to improper installation, improper use, or abuse.		
C. Products judged to be defective during the warranty period shall be replaced or repaired in accordance with the manufacturer's warranty, at no additional cost to the Owner.		
1.8 MAINTENANCE		
A. Maintenance Tools and Instructions: Furnish a complete set of specialized tools and maintenance instructions as needed for Owner's continued adjustment, maintenance, and removal and replacement of door hardware.		
PART 2 - PRODUCTS		
2.1 MANUFACTURERS		
A. Approval of manufacturers other than those listed shall be in accordance with paragraph 1.5.A.		
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5. Provide standard ASA strikes unless extended lip strikes are necessary to protect trim.		
6. Provide electrical options as scheduled. Provide power supplies, recommended and approved by the manufacturer of the electrified lock and other components requiring a power supply.		
7. Lever trim shall be solid cast levers without plastic inserts, and wrought roses on both sides. Locksets shall be thru-bolted to assure proper alignment.		
a. Lever design shall be Falcon Dane.		
b. Lever trim on the secure side of doors serving rooms considered by the authority having jurisdiction to be hazardous shall have a tactile warning.		
J. Mortise Locks - Push/Pull Trim		
1. Provide mortise locks with push/pull trim, where specified, certified as ANSI A156.13, Grade 1 Operational, Grade 1 Security, and manufactured from heavy gauge steel, containing components of steel with a zinc dichromate plating for corrosion resistance. Lock case shall be multi-function and field reversible for handing without opening the case. Cylinders: Refer to 2.4 KEYING.		
2. Provide locks with a standard 2-3/4 inches backset with a full 3/4 inch throw stainless steel mechanical anti-friction latchbolt. Deadbolt shall be a full 1 inch throw, constructed of stainless steel.		
3. Provide standard ASA strikes unless extended lip strikes are necessary to protect trim.		
4. Trim shall be push paddle mounted up and pull paddle mounted down except at psychiatric or security areas provide both paddles mounted down for safety, unless noted otherwise.		
a. Trim on the secure side of doors serving rooms considered by the authority having jurisdiction to be hazardous shall have a tactile warning.		
K. Exit Devices - Heavy Duty		
1. Exit devices shall be tested to ANSI/BHMA A156.3 Grade 1, and UL listed for Panic Exit and/or Fire Exit Hardware. Cylinders: Refer to 2.4 KEYING.		
2. Provide touchpad type exit devices, fabricated of stainless steel, or aluminum, plated to the standard architectural finishes to match the balance of the door hardware.		
3. Exit devices shall incorporate a fluid damper or other device that eliminates noise associated with exit device operation. Touchpad shall extend a minimum of one half of the door width, but not the full length of the exit device rail. End-cap will have two-point attachment to door. For all other finishes, the touch-pad finish shall be of compatible finish to exit device. Only compression springs will be used in devices, latches, and outside trims or controls.		
4. Devices to incorporate a dead-latching feature for security and/or for future addition of alarm kits and/or other electrical requirements.		
5. Vertical rod devices shall be capable of being field modified to less bottom rod devices by removal of bottom rod and adding firing pin(s), if required at fire rated openings.		
6. Provide manufacturer's standard strikes.		
7. Provide exit devices cut to door width and height. Locate exit devices at a height recommended by the exit device manufacturer, allowable by governing building codes, and approved by the Architect.		
8. Mechanism case shall sit flush on the face of all flush doors, or spacers shall be furnished to fill gaps behind devices. Where glass trims or molding projects off the face of the door, provide glass bead kits.		
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EXPIRES 11-30-2018



I hereby certify that these plans were prepared under my supervision and that they comply, to the best of my knowledge, with all the building codes and ordinances of the city of Chicago, Ill.

NO.	DATE	DESCRIPTION	ISSUE FOR BID	ISSUE FOR PERMIT
1	10/06/17	BACKGROUND		
2	02/23/18	ISSUE FOR BID		
3	03/30/18	ISSUE FOR PERMIT		

A. WILLIAM SEEGER ARCHITECTS
Chicago, Illinois 60661
Phone 312-454-0099
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Drawing Title:
1st Floor Upgrade Repairs
2101 S. Michigan Avenue
Chicago, IL

DESCRIPTION:
DOOR HARDWARE

JOB NO. 1701
DRAWN BY: AWS
CHECKED BY: AWS
DATE: 10-06-17

SHEET NO.
A0.5