

DOOR HARDWARE**PART 1 GENERAL****1.1 RELATED SECTIONS**

- .1 Section 01 33 00 - Submittal Procedures.
- .2 Section 01 61 00 - Common Product Requirements.
- .3 Section 01 74 21 – Construction/Demolition Waste Management and Disposal.
- .4 Section 01 78 00 - Closeout Submittals.
- .5 Section 08 11 00- Metal Doors & Frames.
- .6 Division 26 - Electrical wiring for magnetic strikes, electric releases, electric locks.

1.2 REFERENCES

- .1 American National Standards Institute (ANSI) / Builders Hardware Manufacturers Association (BHMA)
 - .1 ANSI/BHMA A156.1-2006, Butts and Hinges.
 - .2 ANSI/BHMA A156.26-2006, Continuous Hinges.
 - .3 ANSI/BHMA A156.13-2005, Mortise Locks and Latches.
 - .4 ANSI/BHMA A156.3-2001, Exit Devices.
 - .5 ANSI/BHMA A156.4-2000, Door Controls (Closers)
 - .6 ANSI/BHMA A156.5-2001, Auxiliary Locks and Associated Products.
 - .7 ANSI/BHMA A156.6-2005, Architectural Door Trim.
 - .8 ANSI/BHMA A156.7-2003, Template Hinge Dimensions.
 - .9 ANSI/BHMA A156.8-2005, Door Controls - Overhead Holders.
 - .10 ANSI/BHMA A156.15-2006, Closer/ Holder Release Device.
 - .11 ANSI/BHMA A156.16-2002, Auxiliary Hardware.
 - .12 ANSI/BHMA A156.18-2006, Materials and Finishes.
 - .13 ANSI/BHMA A156.19-2007, Power Assist and Low Energy Power Operated Doors.
 - .14 ANSI/BHMA A156.21-2006, American National Standards for Thresholds.
 - .15 ANSI/BHMA A156.22-2005, Door Gasketing and Edge Seal Systems.
 - .16 ANSI/BHMA A156.24-2003, Delayed Egress Locks.
 - .17 ANSI/BHMA A156.25-2002, Electrified Locking Devices.
 - .18 ANSI/BHMA A156.29-2001, American National Standards for Exit Locks, Exit Locks with Alarms, Exit Alarms, Alarms for Exits.
 - .19 ANSI/BHMA A156.30-2003, American National Standards for High Security Cylinders.

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- .20 ANSI/BHMA A156.31-2001, American National Standards for Electric Strikes and Frame Mounted Actuators.
- .2 Canadian Standards Association (CSA)
 - .1 CAN/CSA-B651-04. Accessible Design for the Built Environment.
- .3 Canadian Steel Door Manufacturer's Association (CSDMA).
 - .1 Standard Hardware Locations in Accordance with the Canadian Steel Door and Frame Association Guidelines.
 - .2 Recommended locations for Architectural Hardware for Wood Flush Doors.
- .4 National Fire Protection Agency (NFPA)
 - .1 NBC - National Building Code – Latest Edition
 - .2 NFPA-80 - Standard for Fire Doors and Windows – Latest Edition
 - .3 NFPA101 - Life Safety Code – Latest Edition
 - .4 NFPA-105 - Smoke and Draft Control – Latest Edition

1.3 SUBMITTALS

- .1 Product Data:
 - .1 Submit manufacturer's printed product literature, specifications and data sheet.
- .2 Samples:
 - .1 Identify each sample by label indicating applicable specification paragraph number, brand name and number, finish and hardware package number.
 - .2 After approval samples will be returned for incorporation in the Work.
- .3 Hardware List:
 - .1 Submit contract hardware list.
 - .2 Indicate specified hardware, including make, model, material, function, size, finish and other pertinent information.
- .4 Manufacturer's Instructions:
 - .1 Submit manufacturer's installation instructions.
- .5 Closeout Submittals
 - .1 Provide operation and maintenance data for door closers, locksets, door holders electrified hardware and fire exit hardware for incorporation into manual specified in Section 01 78 00 - Closeout Submittals.

1.4 MAINTENANCE MATERIALS

- .1 Provide maintenance materials in accordance with Section 01 78 00 - Closeout Submittals.
- .2 Supply two sets of wrenches for door closers, locksets and fire exit hardware.

DOOR HARDWARE**1.5 WARRANTY**

- .1 Provide a written manufacturer's warranty for work of this Section for failure due to defective materials for ten (10) years, dated from substantial completion certificate.
- .2 Provide a written Contractor's warranty for work of this Section for failure due to defective installation workmanship for one (1) year, dated from submittal completion certificate.

1.6 QUALITY ASSURANCE

- .1 Regulatory Requirements:
 - .1 Hardware for doors in fire separations and exit doors certified by a Canadian Certification Organization accredited by Standards Council of Canada.
 - .2 Only products meeting ANSI/BHMA standards are acceptable. Items that are equal in design, function and quality will be accepted upon approval of the Departmental Representative.
 - .3 Only recognized contract hardware distributors will be considered for the work of this section. The distributor shall have on staff a qualified Architectural Hardware Consultant recognized by the Door and Hardware Institute or a person with equivalent qualifications to assist installers and direct detailing, processing and delivery of material, and certify installation acceptance.

1.7 DELIVERY, STORAGE, AND HANDLING

- .1 Deliver, store, handle and protect materials in accordance with Section 01 61 00 - Common Product Requirements.
- .2 Store finishing hardware in locked, clean and dry area.
- .3 Package each item of hardware including fastenings, separately or in like groups of hardware, label each package as to item definition and location.

1.8 MAINTENANCE SERVICE

- .1 Provide maintenance service for one year during warranty period to maintain all barrier free entrance automatic operators as follows:
 - .1 Qualified service personal approved by manufacturer of operators.
 - .2 Site inspection every three months will all necessary adjustment made during this visit. Separate warranty service calls, if required, will only qualify as an inspection if time of call is close to the three month intervals.
 - .3 Make detailed reports of each visit and copy to Owner and Engineer.
 - .4 Cost of this service will be included as part of this Section and is not covered by any allowance amount.

DOOR HARDWARE**PART 2 PRODUCTS****2.1 HARDWARE ITEMS**

- .1 Only door locksets and latches listed on ANSI/BHMA Standards list are acceptable for use on this project.
- .2 Use one manufacturer's products only for similar items.
- .3 Examples of manufacturers listed (industry-acknowledged approved equals also acceptable):
 - .1 Hinges
 - .1 McKinney – ASSA ABLOY Door Security Solutions Canada, 160 Four Valley Drive, Vaughan, Ontario, L4H 4T9.
 - .2 Continuous Hinges
 - .1 McKinney – ASSA ABLOY Door Security Solutions Canada, 160 Four Valley Drive, Vaughan, Ontario, L4H 4T9.
 - .3 Locks
 - .1 Sargent – ASSA ABLOY Door Security Solutions Canada, 160 Four Valley Drive, Vaughan, Ontario, L4H 4T9.
 - .4 Exit Devices
 - .1 Sargent – ASSA ABLOY Door Security Solutions Canada, 160 Four Valley Drive, Vaughan, Ontario, L4H 4T9.
 - .5 Closers
 - .1 Sargent – ASSA ABLOY Door Security Solutions Canada, 160 Four Valley Drive, Vaughan, Ontario, L4H 4T9.
 - .6 Power Operators
 - .1 Besam - ASSA ABLOY Entrance Systems 4020B Sladeview Crescent. Units 3&4 Ontario, L5L 6B1
 - .7 Flush Bolts
 - .1 Rockwood Manufacturing – ASSA ABLOY Door Security Solutions Canada, 160 Four Valley Drive, Vaughan, Ontario, L4H 4T9.
 - .8 Overhead Stops
 - .1 Sargent – ASSA ABLOY Door Security Solutions Canada, 160 Four Valley Drive, Vaughan, Ontario, L4H 4T9.
 - .9 Flatware
 - .1 Rockwood Manufacturing – ASSA ABLOY Door Security Solutions Canada, 160 Four Valley Drive, Vaughan, Ontario, L4H 4T9.
 - .10 Floor/Wall Stops
 - .1 Rockwood Manufacturing – ASSA ABLOY Door Security Solutions Canada, 160 Four Valley Drive, Vaughan, Ontario, L4H 4T9.
 - .11 Weatherstrip/Thresholds

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- .1 Pemko – ASSA ABLOY Door Security Solutions Canada, 160 Four Valley Drive, Vaughan, Ontario, L4H 4T9.
- .12 Key Cabinet
 - .1 Telkee, 60 Starlifter Ave. Dover Delaware 19901-9254.
- .13 Electromagnetic Locks
 - .1 Securitron – ASSA ABLOY Door Security Solutions Canada, 160 Four Valley Drive, Vaughan Ontario, L4H 4T9.
- .14 Power Supplies
 - .1 Securitron – ASSA ABLOY Door Security Solutions Canada, 160 Four Valley Drive, Vaughan Ontario, L4H 4T9.
- .15 Electric Strikes
 - .1 HESS – ASSA ABLOY Door Security Solutions Canada, 160 Four Valley Drive, Vaughan Ontario, L4H 4T9.

2.2 DOOR HARDWARE

- .1 All fasteners to come complete with the hardware as described. Hardware supplier must be Advised immediately if required fasteners are not enclosed with hardware.
- .1 Hardware must be installed with fasteners supplied by the manufacturer.
- .2 Hinges Butts and hinges: to ANSI/BMHA A156.1, as listed in Hardware Schedule.
 - .1 Non removable pins (NRP) for all exterior and out swinging secure doors.
 - .2 Exterior hinges and hinges in wet areas of stainless steel, brass or bronze.
 - .3 Interior hinges of plated steel, unless otherwise noted.
 - .4 Size and quantity to be as the manufacturers hinge selection guide.
 - .5 Unless otherwise scheduled, supply (1) hinge for every 762mm of door height.
 - .6 The width of hinges shall be sufficient to clear all trim.
 - .7 All hinges to be five-knuckle design and ball bearing.
 - .8 All electric hinges to be supplied with Electrolynx QC plug in connectors as specified.
 - .9 Finish to Dull Chrome 26D.
 - .10 Standard of Acceptance:

.1	Specified	Acceptable Alternates
.2	<u>McKinney</u>	<u>Hager</u> <u>Stanley</u>
.3	T4A4795	BB1263 FBB278
- .2 Exit Devices: to ANSI/BMHA A156.3, Grade 1.
 - .1 Modern touch pad type, fabricated of brass, bronze, stainless steel or aluminum.
 - .2 UL listed for Accident Hazard or Fire Exit Hardware as required.
 - .3 Hex key dogging standard on non fire-rated exit devices. Cylinder dogging where specified.

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- .4 Exit devices shall be UL listed panic exit hardware. All exit devices for fire rated openings shall be ULC labeled fire exit hardware.
- .5 Include all electrified functions as specified.
- .6 Device Length as per manufacturer's guidelines.
- .7 The design of the exit device shall eliminate the necessity of removing the device from the door for standard maintenance or keying changes.
- .8 Trim as specified shall be through-bolted.
- .9 All vertical rod in pairs to be less bottom rod where noted.
- .10 Extension rods are required as per manufacturer's requirements.
- .11 Electronic exit devices to have Linx quick connectors (QC).
- .12 Exit devices to suite doors over 45mm where required.
- .13 Standard of acceptance:

.1	Specified	Acceptable Alternates	
.2	<u>Sargent</u>	<u>Corbin</u>	<u>Yale</u>
.3	8800 - Series	ED5200	7100
- .3 Door controls (closers): to ANSI/BMHA A156.4 as listed in Hardware Schedule.
 - .1 Modern type, surface applied.
 - .2 All closers for both interior and exterior doors shall be the product of one manufacturer and be matched in style.
 - .3 Surface closers shall be adjustable to provide sizes 1 through 6 and comply with ADA.
 - .4 Full rack and pinion construction.
 - .5 Closing speed, latching speed and backcheck shall be controlled by key operated valves.
 - .6 Captivated valves.
 - .7 Delayed action feature shall be available and controlled by a separate valve.
 - .8 Delayed action shall be available in addition to, not in lieu of, backcheck.
 - .9 The one piece closer body shall be of die cast aluminum alloy with 14% silicon minimum content. An increase of 15% in closing power shall be provided by means of adjustment of the arm leverage at the foot connection. (Standard Arm).
 - .10 All arms shall be finely finished with heavy duty forged steel main arm.
 - .11 Two mounting positions of the closer shall meet all requirements. Standard mountings shall provide 120° door opening and alternate mounting 180° door opening.
 - .12 All closers shall be suitable for standard, top jamb, parallel arm and track type applications when provided with proper brackets and arms.
 - .13 Closer covers shall be of high impact plastic material of flame retardant grade.
 - .14 Secured by machine screws.
 - .15 Spring power shall be continuously adjustable over the full range of closer sizes and allow for reduced opening force for the physically handicapped. Hydraulic

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regulation shall be tamper proof, non-critical valves. Closers shall have separate adjustment for latch speed, general speed and backcheck.

- .16 All closer to have a forged steel main arm and forged forearm for parallel arm closers.

- .17 Finish to Aluminum 689.

- .18 Standard of acceptance:

.1 Specified Acceptable Alternates:

.2	<u>Sargent</u>	<u>Norton</u>	<u>Corbin</u>
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.3	1431	8500	DC6200
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.4	351	7500	DC3000
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.5	421	2800ST	DC5000
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- .5 Door Stops and Holders and Auxiliary hardware: to ANSI/BMHA A156.16 designated by letter L and numeral identifiers as listed in Hardware Schedule finished to 26D.

- .1 Wall stops classification, convex or concave, cast brass or bronze. Fasteners to suite wall conditions.

.1 Standard of acceptance:

.1 Specified Acceptable Alternates

.2	<u>Rockwood</u>	<u>Standard Metal</u>	<u>Ives</u>
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.3	406	S121	WS406CV
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.4	409	S123	WS406CC
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- .6 Power assist and low energy power operated doors: to ANSI/BMHA A156.19.

- .1 Automatic operators shall be complete with all components including Operator Housing, Power Operator, Electronic Control, Soft Start, Switching Networks and all Connecting Hardware.

- .2 Size and type to be as indicated in Hardware Groups.

- .3 Operator Housing shall be complete with finished end caps prepared for mounting to door frame.

- .4 Operator shall be factory assembled with all necessary components for proper operation and switching. Relays, wiring harness and other components shall be plug-in type.

- .5 Operator controls shall include adjustable time delay, safe-swing circuit as well as provision for accessories as detailed in Hardware Groups.

- .6 All wiring shall be of the shielded type with proper number of conductor wires to install all components specified.

- .7 Operator shall include sufficient power supplies to operate all hardware and accessory items as detailed in Hardware groups. In the event additional power supplies are required it shall be added at no increase in contract price.

- .8 Complete unit shall be mounted with provisions for easy servicing or replacement without removing the door or frame.

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- .9 Confirm frame detail and if necessary provide a suitable mounting plate to install operator properly.
- .10 Standard of acceptance:
- | | | | |
|----|--------------|-----------------------|---------------|
| .1 | Specified | Acceptable Alternates | |
| .2 | <u>Besam</u> | <u>Gyro Tech</u> | <u>Horton</u> |
| .3 | SW200i | GT-20 | 4000 HD |
| .4 | SW100i | GT-8710 | 7000 |
- .7 Door Gasketing and Edge Seal Systems: to ANSI/BMHA A156.22.
- .1 Head and Jamb seal:
- .1 Extruded aluminum frame and neoprene insert, clear anodized finish.
- .2 Surface overhead stops and exit device strikes to mount on top of weatherstrip to provide continuous seal.
- .3 Adhesive backed black "Santoprene" to provide smoke, light and sound control. Fire labeled 1 1/2hrs.
- .4 Standard of acceptance:
- | | | | |
|----|--------------|-----------------------|--------------|
| .1 | Specified | Acceptable Alternates | |
| .2 | <u>PEMKO</u> | <u>KN Crowder</u> | <u>Hager</u> |
| .3 | 319S | W-14S | 878S |
| .4 | 290APK | W20N | 881S |
| .5 | 2891AS | W20S | 881S |
| .6 | S88B | W22 | 726S |
| .7 | 288B | W21 | 726S |
- .8 Power Supplies:
- .1 Dual output, field selectable 12 or 24 VDC via clearly marked toggle switch.
- .2 Supplies 1 full AMP continuous current output, even while charging back-up batteries.
- .3 SPDT AC monitoring output allows for remote monitoring of the power supply's 110V AC input.
- .4 Separate voltage inputs for load and battery allow the batteries to charge at a higher output while the load remains at exactly 12 or 24 VDC.
- .5 LED indication (AC & DC) showing power supply status UL listed low current fire alarm disconnect requires only a minimum size fire alarm relay and wire gauge Polyswitch type breakers allow for large short duration inrush current if batteries are installed (approx. 20A for 1 second) Line voltage and DC fuses Sealed lead acid-gel battery charging capability (battery not included).
- .6 UL Class 2, linear regulated power supply provides the cleanest power available sensitive, active safety and security devices.

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- .7 UL Listed.
- .8 CFAR Relay - Securitron's Fire Alarm reset module interconnects with a Securitron BPS series power supply and a fire alarm (made by others). The purpose is to provide additional safety and control in an installation where activation of the fire alarm is intended to switch off the BPS power supply.
- .9 This is often done to release power to magnetic locks which are installed on perimeter doors so as to permit safe evacuation in the event of a fire. The module has three specific functions:
 - .1 It will maintain the released condition of devices released by activation of the fire alarm even after the fire alarm resets and until the module itself is reset by key.
 - .2 It allows key controlled release of the same devices (separate from the fire alarm control).
 - .3 It signals the released or "normal" condition of the devices via a bicolor LED.
- .10 Standard of acceptance:

.1	<u>Specified</u>	<u>Acceptable Alternates</u>
.2	Securitron	Sargent
.3	AQD	Switching
- .9 Key Switches:
 - .1 Mortise Keyswitch – MKA Series.
 - .2 Standard with 12 or 24 VDC bi-color LED
 - .3 Backing bracket permits integration with any 32mm or 28mm mortise cylinder (Not Included)
 - .4 Additional switch position on backing bracket allows another switch to be activated by turning the key in the opposite direction 5 Amp rated plunger switch UL Listed.
- .10 Door Status Switch:
 - .1 Monitors door position remotely.
 - .2 SPDT concealed switch (3 wire).
 - .3 Contacts rated .25 Amp @24 VDC, requires 25mm diameter hole.
 - .4 Standard of acceptance:

.1	<u>Specified</u>	<u>Acceptable Alternates</u>
.2	<u>Sargent</u>	<u>Securitron</u>
.3	3287	DPS W/M

2.3**KEY CABINET**

- .1 Provide one wall mounted steel key cabinet with capacity for 1.5 times the number of keys with an indexed key control system to ANSI/BHMA A156.5.

DOOR HARDWARE**2.4 FASTENINGS**

- .1 Use only fasteners provided by manufacturer. Failure to comply may void warranties and applicable licensed labels.
- .2 Supply screws, bolts, expansion shields and other fastening devices required for satisfactory installation and operation of hardware.
- .3 Exposed fastening devices to match finish of hardware.
- .4 Where pull is scheduled on one side of door and push plate on other side, supply fastening devices, and install so pull can be secured through door from reverse side. Install push plate to cover fasteners.
- .5 Use fasteners compatible with material through which they pass.

2.5 KEYING

- .1 Doors, padlocks and cabinet locks to be master keyed as directed. Prepare detailed keying schedule in conjunction with Departmental Representative and owner.
- .2 Provide keys in triplicate for every lock in this Contract.
- .3 Provide six master keys for each MK or GMK group. Allow for six (6) levels of sub master keying.
- .4 Stamp keying code numbers on keys and cylinders.
- .5 Provide construction cores.
- .6 Provide all permanent cores and keys to Departmental Representative.
- .7 Supply fifty (50) blanks for each sub master group used.

2.6 FINISHES

- .1 Following finishes are indicated in hardware groups.

BHMA	CAN MATERIAL	FINISH
626	C26D Brass/Bronze	Satin Chrome
628	C28 Aluminum	Satin Alum, Anodized
630	C32D Stainless Steel	Satin Stainless Steel
652	C26D Steel	Plated Satin Chrome
689	Al All	Painted Aluminum
	Alum Aluminum	Mill Finish
	TMDFP (to match door and frame finish).	

2.7 ABBREVIATIONS

ALD	Aluminum Door and Frame
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ATMS STMS	Arm/strike To Template with Machine Screws
ASB	Arm Complete with Sex Bolts
BC	Back Check
C to C, C/L	Centerline to Centerline
Cyl	Cylinder (of a lock)
CMK	Construction Master Key
Deg.	Degree (of opening)
DEL	Delayed Action
FBB or BB	Ball bearing hinge

PART 3 EXECUTION**3.1 MANUFACTURER'S INSTRUCTIONS**

- .1 Compliance: comply with manufacturer's written data, including product technical bulletins, product catalogue installation instructions, product carton installation instructions, and data sheets.
- .2 Furnish metal door and frame manufacturers with complete instructions and templates for preparation of their work to receive hardware.
- .3 Furnish manufacturers' instructions for proper installation of each hardware component.

3.2 INSTALLATION

- .1 Install hardware to standard hardware location dimensions in accordance with Canadian Metric Guide for Steel Doors and Frames (Modular Construction) prepared by Canadian Steel Door and Frame Manufacturers' Association.
- .2 Where door stop contacts door pulls, mount stop to strike bottom of pull.
- .3 Install key control cabinet.
- .4 Use of "quick" type fasteners, unless specifically supplied by manufacturer, is unacceptable.
- .5 Remove construction when directed by Departmental Representative; install permanent cores and check operation of locks.
- .6 Wiring Diagrams:
 - .1 Provide any special information, voltage requirements and wiring diagrams to other trades requiring such information.

3.3 EXAMINATION

- .1 Visit site prior to start of installation of hardware.

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- .2 Visit will include examination of openings, site conditions and materials for conditions that prevent proper application of finish hardware.
- .3 Installation will imply conditions for installation acceptable hardware contractor to accept responsibility.

3.4 FIELD QUALITY CONTROL

- .1 Hardware contractor to have a qualified AHC representative from the manufacturer/supplier on site at Substantial Completion Inspection and at commissioning of the finished hardware. Cost of the visits to be included in contract.

3.5 ADJUSTING

- .1 Adjust door hardware, operators, closures and controls for optimum, smooth operating condition, safety and for weather tight closure.
- .2 Lubricate hardware, operating equipment and other moving parts.
- .3 Adjust door hardware to provide tight fit at contact points with frames.
- .4 Where hardware is found defective, repair or replace or correct as desired by inspection reports.

3.6 CLEANING

- .1 Perform cleaning after installation to remove construction and accumulated environmental dirt.
- .2 Clean hardware with damp rag and approved non-abrasive cleaner, and polish hardware in accordance with manufacture's instructions.
- .3 Remove protective material from hardware items where present.
- .4 Upon completion of installation, remove surplus materials, rubbish, tools and equipment barriers.

3.7 PROTECTION

- .1 All hardware shall be protected against damage from paint, plaster or other defacing materials. Whenever possible manufacturers protective covering when applied, shall not be removed until final project cleaning takes place. Material not protected by manufacture shall be covered or removed from door during painting or any other adjustments that can cause damage to hardware.

3.8 HARDWARE GROUPS

- .1 Provide hardware as specified in the previous articles in sets according to the following groups: *(insert hardware groups)*.

DOOR HARDWARE**3.9 DEMONSTRATION**

- .1 Keying System Setup and Cabinet:
 - .1 Set up key control system with file key tags, duplicate key tags, numerical index, alphabetical index and key change index, label shields, control book and key receipt cards.
 - .2 Place file keys and duplicate keys in key cabinet on their respective hooks.
 - .3 Lock key cabinet and turn over key to Departmental Representative.
- .2 Designated Staff Briefing:
 - .1 Brief designated staff regarding:
 - .1 Proper care, cleaning, and general maintenance of projects complete hardware.
 - .2 Description, use, handling, and storage of keys.
 - .3 Use, application and storage of wrenches for door closers, locksets, and fire exit hardware.
- .3 Demonstrate operation, operating components, adjustment features, and lubrication requirements.

3.10 COMMISSIONING

- .1 Site inspection or visit at Substantial Completion and training follow up and inspection at commissioning as directed by Departmental Representative.
- .2 Provide 10 month warranty service.

Hardware Schedule**Set: H1**

AA D1/D2, 1829.0 x 2134.0 x 45.0, Hollow Metal x Hollow Metal, RHR/LHR, 90

5 Hinge (heavy weight)	T4A4795 114mm	US26D	MK
1 Hinge (heavy weight)	T4A4795 114mm QC-4 (Middle Hinge)	US26D	MK
2 Exit Device	12 72 8813 ETL	US32D	SA
1 Exit Device	12 55 56 72 8813 ETL	US32D	SA
2 Permanent Core	1C7 x Keyway x Master Keyed	Std	BE
1 Door Closer (surface)	422 PCTB (Push Side)	EN	SA
1 Power Operator	SW200i	Std	BM
1 Sensor	Superscan 11 (Push Side)	Std	BM
1 Sensor	Superscan 11 (Pull Side)	Std	BM

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1	Door Switch	10SWITCH75	Std	BM
1	Switching Network	CX-33	Std	BM
1	Lock Out Relay	LE-21	Std	BE
1	Mounting Pate	Mounting Plate x Full Header	689	BM
1	Backing Plate	Backing Plate x Full Header	689	BM
2	Wall Actuator - 114mm	10BR45 - Wall Mount Actuator	32D	BM
2	Eschutcheon	10ESCUTCHEON45	32D	BM
2	Wall Stop	406 (Convex HD)	US32D	RO
1	Gasketing	2891AS x 3 Sides		PE
2	Door Bottom	420APKL x Door Width		PE
1	Key Switch	MKA2 x MKSA2	32D	SU
1	Power Supply	AQD3-1R		SU
1	Raceway Harness Wires W/Pins-2'0	93993-QC-C200P-QC12-12	Std	MK
1	Wiring Harness Wires W/Pins-25'0	93970-QC-C2500P-QC12-12	Std	MK
1	Wiring Diagrams	Wirung Diagrams (Elevations & Point to Point)	Std	SA

Notes:

FIXED MULLION BY FRAME SUPPLIER. POWER OPERATOR TO BE LOCATED ON DOOR D1.
POWER OPERATOR TO BE MOUNTED ON THE PULL SIDE. CONFIRM REVEAL.

WEATHERSEAL NOT TO BE BROKEN. MOUNT HARDWARE TO THE SURFACE OF THE WEATHERSEAL.

REQUIRES 120VAC POWER TO POWER OPERATOR LOCATION BY ELECTRICAL SUPPLIER.
REQUIRES 120VAC POWER TO POWER SUPPLY LOCATION BY ELECTRICAL SUPPLIER.
REQUIRES LOW VOLTAGE FROM POWER OPERATOR TO POWER SUPPLY LOCATION.
REQUIRES LOW VOLTAGE FROM POWER OPERATOR TO EXIT DEVICE LOCATION.
REQUIRES LOW VOLTAGE FROM POWER OPERATOR TO ACTUATOR BUTTON LOCATION.
REQUIRES LOW VOLTAGE FROM POWER SUPPLY TO EXIT DEVICE LOCATION.
REQUIRES LOW VOLTAGE WIRE FROM KEY SWITCH TO POWER SUPPLY.

MODE OF OPERATION:

THE POWER OPERATOR CAN ONLY BE ACTIVATED WHEN THE
EXIT DEVICE IS IN THE ELECTRICALLY DOGGED POSITION BY
KEY SWITCH ON THE WALL. THIS WILL ACTIVATE THE SIGNAL
SWITCH IN THE EXIT DEVICE ENABLING THE EXTERIOR ACTUATOR
BUTTON. WHEN IN THE DOGGED POSITION THE DOOR MAY BE
OPERATED MANUALLY OR BY ACTIVATING THE ACTUATOR
SWITCHES EITHER SIDE OF THE DOOR.

AFTER HOURS OPERATION:

THE EXIT DEVICE WILL BE TAKEN OUT OF THE DOGGED POSITION
DISABLING THE EXTERIOR ACTUATOR BUTTON. PUSHING THE
INTERIOR ACTUATOR BUTTON WILL RETRACT THE LATCH AND
SIMULTANEOUSLY ACTIVATE THE POWER OPERATOR. ENTRY BY KEY.
FREE EXIT AT ALL TIMES.
LOCATION OF ACTUATOR BUTTONS TO BE DETERMINED.

Set: H2

AA D3/D4, 1829.0 x 2134.0 x 45.0, Hollow Metal x Hollow Metal, RHR/LHR, 90

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6 Hinge (heavy weight)	T4A4795 114mm	US26D	MK
2 Exit Device	12 72 8813 ETL	US32D	SA
2 Permanent Core	1C7 x Keyway x Master Keyed	Std	BE
2 Door Closer (surface)	422 PCTB (Push Side)	EN	SA
2 Wall Stop	406 (Convex HD)	US32D	RO
2 Gasketing	2891AS x 3 Sides		PE
2 Door Bottom	420APKL x Door Width		PE

Notes:

FIXED MULLION BY FRAME SUPPLIER.

WEATHERSEAL NOT TO BE BROKEN. MOUNT HARDWARE TO THE SURFACE OF THE WEATHERSEAL.

END OF SECTION