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**Part 1            General**

**1.1                GENERAL REQUIREMENTS**

- .1            Comply with requirements of Division 1.
- .2            Furnish and delivery of all finish hardware necessary for all doors. Also hardware as specified herein and as enumerated in "Set Numbers" and as indicated and requested by actual conditions of the building. The hardware shall include the furnishing of all necessary screws, special screws, bolts, special bolts, expansion shields, drop plates and all other devices necessary for the proper installation of the hardware.
- .3            The Department Representative approval of the schedule will not be construed as certifying that the list is complete. Acceptance of the Hardware Schedule does not relieve the supplier of responsibility of errors or omissions.
- .4            Hardware should not be ordered unless a corrected copy of the shop drawings is reviewed and returned from the specification writer and bearing the approval of the Department Representative.
- .5            Aluminum Door hardware is to be ordered immediately after approval of shop drawings and shipped directly to the Aluminum Door supplier.
- .6            Furnish, deliver and install all finish hardware necessary for all doors, also hardware as specified herein and as enumerated in hardware group indicated by actual conditions at the project site.
- .7            The electrical hardware shall include the furnishing of plug in connections and final connections of Low voltage wiring at the door opening. Electrical hardware devices to be installed by Section 08 71 00 with all final connection with termination above the frame. Electric hardware devices for the proper operation and application of the hardware noted by connection notes in the hardware schedule. Power, conduit, low voltage wire to junction box above the frame. Connection of the card readers, maglocks and high voltage wire by the electrical section Division 16.
- .8            Division 16 to provide high voltage wiring and conduit to the door opening or power supplies including conduit to hardware locations.

**1.2                REFERENCES**

- .1            American National Standards Institute (ANSI) A117.1 Specification
  - .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.
- .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 (1995)
  - .2 NFPA-80 - 2007 - Standard for Fire Doors and Windows.
  - .3 NFPA101 - Life Safety Code (2000)
  - .4 NFPA-105 - Smoke and Draft Control

### 1.3 ABBREVIATIONS

- .1 The following abbreviations are applicable to this section:
  - .1 AHC Architectural Hardware Consultant
  - .2 ALD ALF Aluminum Door and Frame
  - .3 ATMS/STMS Arm/Strike to Template with Machine Screws
  - .4 BB or FBB Ball Bearing Hinges
  - .5 BC Back Check
  - .6 BTB Back to Back
  - .7 B3E or B4E Bevel 3 or 4 sides
  - .8 C to C, C/L Centerline to Centerline
  - .9 CDC Certified Door Consultant
  - .10 CMK Construction Masterkeyed

.11	CSC	Construction Specifications Canada
.12	CSK	Countersunk Screw Holes.
.13	Cyl.	Cylinder of a lock
.14	Deg.	Degree of opening
.15	DEL	Delay Action
.16	DHI	Door and Hardware Institute
.17	DR	Door
.18	FC	Full Cover
.19	FS	Fail Safe
.20	FSE	Fail Secure
.21	FTMS	Full template machine screws
.22	½ TMS	Half template machine screws
.23	GMK	Grand Masterkeyed
.24	KA/KD	Keyed Alike, Keyed Different
.25	HMD/PSF	Hollow Metal Door, Pressed Steel Frame
.26	LH/RH	Left Hand, Right Hand
.27	LHR/RHR	Left Hand Reverse, Right Hand Reverse
.28	MK or MKD	Master Keyed
.29	NBC	National Building Code
.30	NRP	Non removable pin
.31	TB/SB	Thru Bolts, Sex Bolts
.32	TJ	Top Jamb
.33	ULC	Underwriters Laboratories Canada
.34	WD	Wood Door

#### 1.4 SUBMITTALS

- .1 Product Data:
  - .1 Submit manufacturer's printed product literature, specifications and data sheets in accordance with Sections 01 33 00 – Submittal Procedures and 01 78 00 – Closeout Submittals.
- .2 Samples:
  - .1 Upon Departmental Representative request submit samples of door hardware in accordance with Sections 01 33 00 – Submittal Procedures and 01 78 00 – Closeout Submittals.
  - .2 Identify each sample by label indicating applicable specification paragraph number, brand name and number, finish and hardware package number.
  - .3 After approval samples will be returned for incorporation in the Work.
- .3 Hardware List:
  - .1 Submit detailed hardware list and keying schedule in accordance with Sections 01 33 00 – Submittal Procedures and 01 78 00 – Closeout Submittals.
  - .2 Hardware Schedule is to be submitted as per DHI vertical format which is in the "Sequence and Format for Hardware Schedules".

- .3 Indicate specified hardware including make, model, material, function, size, finish and other pertinent information.
- .4 Furnish other Sections with templates required for hardware preparation and installation. Issue templates when requested so as not to cause any delays but not before hardware list has received final review by Departmental Representative.
- .5 Keying Schedule to be in accordance with DHI manual "Keying Systems Names and Nomenclature". Key schedule is not to hold up the processing of the hardware list.
- .6 Wiring Diagrams will only be supplied after the final approval of the Hardware Schedule. Submit wiring diagrams as requested for proper installation of electrical, electrical-mechanical and electrical-magnetic products.
- .4 Manufacturer's Instructions: Submit manufacturer's installation instructions.
- .5 Closeout Submittals: Provide operation and maintenance data for door closers, locksets, door holders, electrified hardware and fire exit hardware for incorporation into Operations and Maintenance Manuals specified in Section 01 78 00 – Closeout Submittals.

## **1.5 WARRANTY**

- .1 Provide guarantee.
  - .1 Closers 10 year
  - .2 Mortise Locks 10 year mechanical / 2 year electrical
  - .3 Electronic Closer 2 year
  - .4 Exit Device 3 years
  - .5 Hinges Lifetime of Building
  - .6 All other Hardware 1 year

## **1.6 QUALITY ASSURANCE**

- .1 Regulatory Requirements: hardware for doors in fire separations and exit doors certified by a Canadian Certification Organization accredited by Standards Council of Canada.
- .2 Meet requirements of National Building Code of Canada and other applicable regulations.
- .3 Test Reports: certified test reports showing compliance with specified performance characteristics and physical properties.
- .4 Certificates: product certificates signed by manufacturer certifying materials comply with specified performance characteristics and criteria and physical requirements.
- .5 Pre-installation Meetings: conduct pre-installation meeting to verify project requirements, manufacturer's installation instructions and manufacturer's warranty requirements.
- .6 Upon completion of finish hardware installation, hardware supplier shall inspect work and shall certify in writing that all items and their installation are in accord with requirements of Contract Documents and are functioning properly.

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**1.7 PRODUCT DELIVERY, HANDLING & STORAGE**

- .1 Packing, Shipping, Handling and Unloading:
  - .1 Deliver, store, handle and protect materials in accordance with Section 01 61 00 - Common Product Requirements.
  - .2 Package each item of hardware including fastenings, separately or in like groups of hardware, with necessary screws, keys, instructions and installation templates.
  - .3 All items of hardware should be itemized and tagged as per the approved Finish Hardware Schedule.
  - .4 Hardware for Aluminum Doors to be shipped directly to the Aluminum Door supplier. Hardware for Aluminum Doors will be ordered immediately after approval of shop drawings. Delays in ordering the Aluminum Door hardware will not be accepted.
  - .5 Shortages will not delay installation.
  - .6 Items damaged in shipment will be replaced properly with proper material.
  - .7 All Hardware shall be handled in a manner to avoid damage, marking and scratching.
  - .8 Hardware is to be inventoried on site and confirmed by the Contractor and Hardware Supplier.
- .2 Storage and Protection:
  - .1 Store hardware in locked, clean and dry area.

**1.8 WASTE DISPOSAL AND MANAGEMENT**

- .1 Separate and recycle waste materials in accordance with Section 01 74 19.
- .2 Collect and separate metal, plastic, paper packing and corrugated cardboard and deposit in appropriate on site recycling bins.
- .3 Dispose of corrugated cardboard, plastic packaging material in appropriate on-site bin for recycling in accordance with site waste management program.

**1.9 MAINTENANCE**

- .1 Provide three sets of maintenance tools for closers, locks and exit devices as well as a complete set of installation instructions.
- .2 After the building is occupied, arrange for an appointment with the owner to instruct them of proper use, service, adjusting and maintenance of the hardware furnished in this section.
- .3 Extra Material if required.

**1.10 INSPECTION**

- .1 The hardware supplier shall arrange at least four visits to the job site.

- .1 Visit project at time of delivery of hardware and inspect the personnel who will be looking after the installation and issuing of hardware at the job site. Delivered hardware to be received, sorted and itemized at the jobsite with contractor.
- .2 Second visit will be required for key meeting with the Departmental Representative at a location at their request.
- .3 Third visit will take place when about sixty percent of hardware is installed.
- .4 Check all hardware on site and correct any errors or shortages. Co-ordinate with contractor to determine proper time for visit.
- .5 Fourth visit shall take place just prior to building turnover. All hardware shall be checked for proper installation and adjustment. Any errors shall be corrected and adjustments made. Check the key system and furnish a report along with maintenance manuals detailing any errors found.
- .6 Cost of this service will be included as part of this Section and is not covered by any allowance amount.

## **Part 2 Products**

### **2.1 HARDWARE ITEMS**

- .1 Only locksets and latchsets listed are acceptable for use on this project.
- .2 Use one manufacturer's products only for all similar items.
- .3 Manufacturer's Listed:
  - .1 Hinges
    - .1 McKinney – ASSA ABLOY Door Security Solutions Canada, 160 Four Valley Drive, Vaughan, Ontario, L4H 4T9.
  - .2 Locks
    - .1 Sargent – ASSA ABLOY Door Security Solutions Canada, 160 Four Valley Drive, Vaughan, Ontario, L4H 4T9.
  - .3 Exit Devices
    - .1 Sargent – ASSA ABLOY Door Security Solutions Canada, 160 Four Valley Drive, Vaughan, Ontario, L4H 4T9.
  - .4 Closers
    - .1 Sargent – ASSA ABLOY Door Security Solutions Canada, 160 Four Valley Drive, Vaughan, Ontario, L4H 4T9.
  - .5 Flatware
    - .1 Rockwood Manufacturing – ASSA ABLOY Door Security Solutions Canada, 160 Four Valley Drive, Vaughan, Ontario, L4H 4T9.
  - .6 Floor/Wall Stops
    - .1 Rockwood Manufacturing – ASSA ABLOY Door Security Solutions Canada, 160 Four Valley Drive, Vaughan, Ontario, L4H 4T9.
  - .7 Weatherstrip/Thresholds
    - .1 Pemko – ASSA ABLOY Door Security Solutions Canada, 160 Four Valley Drive, Vaughan, Ontario, L4H 4T9.
  - .8 Key Cabinet

.1 Telkee, 60 Starlifter Ave. Dover Delaware 19901-9254.

## 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.

.2 Hardware must be installed with fasteners supplied by the manufacturer.

.3 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>	Hager	Stanley
.3	TA2714	BB1279	FBB179
.4	TA2314	BB1191	FBB191
.5	TA3786	BB1168	FBB168
.6	TA3386	BB11699	FBB199

.4 Bored locks and Preassembled Locks and Latches:

- .1 Bored locks and latches: Locks shall exceed the requirements of ANSI/BHMA A156.2 -2003, series 4000 bored lock, grade 1, designed for function as stated in Hardware Schedule. Exceeds 1.5 times A156.2 Grade 1 requirements.
- .2 Locks shall be non-handed with bi-directional lever operation, except the "G" and "Y" lever designs.
- .3 Through-bolt mounting shall be adaptable to fit a variety of standard cylindrical lock preps.
- .4 Locks shall comply with UL10C and UBC 7-2 positive pressure requirements.
- .5 Locks required for fire doors shall be listed by Underwriters Laboratories for ratings of 3 hours (A label) and less, for doors up to 4'0" (1.2m) x 10'0" (3.0m) and pairs of doors 8'0" (2.4m) x 10'0" (3.0m). Lock levers shall be made of solid material.
- .6 Lock shall be available in a minimum of six different lever designs.
- .7 Locks shall have a 2-3/4 inch (70mm) backset standard.

- .8 Strikes shall be non-handed with a curved lip. Provide wrought boxes with strikes.
- .9 Locks shall have brass 6-pin cylinder standard.
- .10 Provide two nickel silver keys with each lock.
- .11 Finished to 26D.
- .12 Standard of Acceptance:
- |    |                |                       |             |
|----|----------------|-----------------------|-------------|
| .1 | Specified      | Acceptable Alternates |             |
| .2 | <u>Sargent</u> | <u>Corbin</u>         | <u>Yale</u> |
| .3 | 10 Line        | CL3300                | 5400LN      |
- .5 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.
- .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        |
- .6 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 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> |  |
| .3 | 1431           | 8500                   | DC6200        |  |
| .4 | 351            | 7500                   | DC3000        |  |
| .5 | 421            | 2800ST                 |               |  |
- .7 Architectural door trim: to ANSI/BHMA A156.6, as listed in Hardware Schedule, finished to stainless steel 32D.
- .1 Door protection plates: kickplates type, 1.3 mm thick stainless steel, 203mm high, unbevelled edges, width less 40mm push side, width less 25mm on pull side for single doors. Width less 25mm for pairs. Finished to stainless steel 630.
- .1 Standard of acceptance:
- |    |                 |                       |             |              |
|----|-----------------|-----------------------|-------------|--------------|
| .1 | Specified       | Acceptable Alternates |             |              |
| .2 | <u>Rockwood</u> | <u>Standard Metal</u> | <u>Ives</u> | <u>Hager</u> |
| .3 | K1050           | K10A                  | 8400        | 190S         |
- .2 Push plates: 1.3 mm thick stainless steel, size 89mm x 381mm, finished to stainless steel 630.
- .1 Standard of acceptance:
- |    |                 |                       |             |  |
|----|-----------------|-----------------------|-------------|--|
| .1 | Specified       | Acceptable Alternates |             |  |
| .2 | <u>Rockwood</u> | <u>Standard Metal</u> | <u>Ives</u> |  |
| .3 | 70RC            | K14A                  | 8200RC      |  |
- .3 Door Pulls: 19mm round pull, 228.6mm center to center pulls, with 76mm x 305mm protection plate, mount type 1, finished to stainless steel 630.
- .1 Standard of acceptance:
- |    |                 |                       |             |  |
|----|-----------------|-----------------------|-------------|--|
| .1 | Specified       | Acceptable Alternates |             |  |
| .2 | <u>Rockwood</u> | <u>Standard Metal</u> | <u>Ives</u> |  |

- |    |            |                  |      |
|----|------------|------------------|------|
| .3 | 111 x 73CL | K14 x 2409-1(RC) | 8303 |
|----|------------|------------------|------|
- .4 Door Pulls: 32mm Round Offset Pull, mount type 1, 1220mm center to center, mounting to be with a security bolt (#4B) for single application and (#5) for back to back, finished to stainless steel 630.
- |    |   |                       |                     |
|----|---|-----------------------|---------------------|
| .1 | Standard of acceptance: Standard Metal D-352 x Mnt. |                       |                     |
| .1 | Specified   | Acceptable Alternates |                     |
| .2 | <u>Rockwood</u>                                     | <u>Standard Metal</u> | <u>Ives</u>         |
| .3 | BF159   | 3018-2                | 8190-18      2018-1 |
- .8 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 | Floor stops dome style classification. Low dome or High dome. Die cast brass. Stops to be sized according to door clearances, thresholds or undercuts as noted in the Door Schedule. Fasteners to suite floor conditions. |                       |             |
| .1 | Standard of acceptance:   |                       |             |
| .1 | Specified   | Acceptable Alternates |             |
| .2 | <u>Rockwood</u>   | <u>Standard Metal</u> | <u>Ives</u> |
| .3 | 441   | S101                  | FS13        |
| .4 | 443   | S103                  | FS17        |
| .5 | 483   | S110                  | FS441       |
| .2 | 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> |
| .3 | 406   | S121                  | WS406CV     |
| .4 | 409   | S123                  | WS406CC     |
- .9 Thresholds and Weatherstripping Thresholds: to ANSI/BMHA A156.21.
- |    |  |                       |              |
|----|--|-----------------------|--------------|
| .1 | Saddle threshold 152.4 mm wide x full width of door opening, extruded aluminum mill finish, serrated surface, with thermal break of rigid PVC.   |                       |              |
| .2 | Panic threshold 93.7 mm wide x full width of door opening, extruded aluminum mill finish, serrated surface, with lip and vinyl door seal insert. |                       |              |
| .3 | Standard of acceptance:  |                       |              |
| .1 | Specified  | Acceptable Alternates |              |
| .2 | <u>PEMKO</u>   | <u>KN Crowder</u>     | <u>Hager</u> |
| .3 | 179AP  | CT-39P                | 552W         |
| .4 | 252 x 3AFG   | CT45A                 | 421S         |
| .5 | 251 x 226AFG   | CT49A                 | 515S         |
- .10 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         |
- .2 Door bottom seal:
- .1 Extruded Aluminum frame and nylon brush sweep, clear anodized finish.
- .2 Heavy duty, door seal of extruded aluminum frame and solid closed cell neoprene weather seal, recessed in door bottom, closed ends, automatic retract mechanism when door is open, clear anodized finish.
- .3 Standard of acceptance:
- | .1 | Specified    | Acceptable Alternates |              |
|----|--------------|-----------------------|--------------|
| .2 | <u>PEMKO</u> | <u>KN Crowder</u>     | <u>Hager</u> |
| .3 | 3452CNB      | W35-1                 | 770SB        |
| .4 | 18100CNB     | W24S                  | 801SB        |
| .5 | 4301         | CT-52                 | 747S         |
- .11 Intergrated Wiegand Output Access Control Locking Devices – Multi-Class.
- .1 Integrated Wiegand Output Multi-Class Mortise Locks: Wiegand output ANSI A156.13, Grade 1, mortise lockset with integrated card reader, request-to-exit signaling, door position status switch, and latchbolt monitoring in one complete unit. Hard wired, solenoid driven locking/unlocking control of the lever handle trim, 3/4" deadlocking anti-friction latch, and 1" case-hardened steel deadbolt. Lock is U.L listed and labeled for use on up to 3 hour fire rated openings. Available with or without keyed high security cylinder override.
- .1 Open architecture, hard wired platform supports centralized control of locking units with new or existing Wiegand compatible access control systems. Latchbolt monitoring and door position switch act in conjunction to report door-in-frame (DPS) and door latched (door closed and latched) conditions.
- .2 Integrated reader supports the following credentials:
- .1 125kHz proximity credentials: HID, AWID, Indala, and EM4102.
- .2 13.56 MHz proximity credentials: HID iClass, HID iClass SE, SE for MIFARE Classic, DESFire EV1.
- .3 12VDC external power supply required for reader and lock, with optional 24VDC lock solenoid. Fail safe or fail secure options.
- .4 Energy Efficient Design: Provide lock bodies which have a holding current draw of 15mA maximum, and can operate on either 12 or 24 volts. Locks are to be field configurable for fail safe or fail secure operation.

- .5 Installation requires only one cable run from the lock to the access control panel without requirements for additional proprietary lock panel interface boards or modules.
  - .6 Installation to include manufacturer's access control panel interface board or module where required for Wiegand output protocol.
  - .7 Sargent Corbin Yale
  - .8 M1 8200
- .12 Wireless Access Control Locks.
- .1 Wireless Access Control Mortise Locks: Wireless technology ANSI/BHMA A156.13 Grade 1 mortise lockset with integrated card reader, deadbolt monitoring, and request-to-exit and door position switch signaling in one complete unit. Motor driven locking/unlocking control of the lever handle trim, 3/4" stainless steel latch, and 1" 13 gauge hardened steel deadbolt (optional). Lock is U.L listed and labeled for use on up to 3 hour fire rated openings. Available with or without keyed high security cylinder override.
    - .1 Wireless access control cylindrical locks interface using local wireless connection between the lock unit and a nearby communication hub. Communication hub connected via RS-485 or Wiegand to a new or existing online electronic access control system platform.
    - .2 Fully-encrypted AES 128 wireless communication between lock and communication hub (IEEE 802.15.4, 2.4 GHz) with no proprietary programming device requirements. Locks will continue functional operation independent of wireless connection slowdown or failure.
    - .3 Integrated card reader supports 13.56 MHz HID® iCLASS contactless credentials (full authentication, all formats).
    - .4 Power Source: 6 AA alkaline batteries power supply with LED indication of locked, programming mode and low capacity warning status conditions.
    - .5 Energy Efficient Design: Provide lock bodies which have a holding current draw of 15mA maximum, and can operate on either 12 or 24 volts. Locks are to be field configurable for fail safe or fail secure operation.
    - .6 Outside lever rigid except when valid user code is entered. Emergency override access capability with optional mechanical key cylinder retraction of lock latch bolt without necessary electronic activation.
    - .7 Communication Hub: Provide the necessary number of hubs which is connected to the access control system via RS-485 or Wiegand as required by the system. Provide hubs factory paired with the locks, but allow for field configuration as needed.
    - .8 Complete installation to include manufacturer's Installation Tool and USB Radio Dongle for initial lock set-up and configuration. Electronic on-line access control system platform, including communication cabling and software, by others.
    - .9 Sargent Corbin Yale
    - .10 M1 8200

**2.3 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.

**2.4 FINISHES**

.1	<u>Description</u>	<u>Material</u>	<u>BMHA</u>
.2	Exterior Hinges	Stainless Steel Metal, Satin	630
.3	Interior Hinges	Satin Chromium Plated	626
.4	Locks	Stainless Steel Metal, Satin	630
.5	Exit Devices	Satin Chromium Plated	626
.6	Closers	Aluminum Powder Coated	689
.7	Flatware	Stainless Steel Metal, Satin	630
.8	All other items	Satin Chromium Plated	626

**2.5 KEYING**

- .1 All locks to be masterkeyed to a new factory registered masterkey system. All locks to be masterkeyed as per the owners instructions.
- .2 All cylinders to be Sargent Signature Series.
- .3 All cylinders to be construction master keyed.
- .4 All locks and cylinders to be visually keyed.
- .5 Consult with the Departmental Representative and the Owner and secure written approval of the complete keying layout prior to placing lock order with the factory.
- .6 Grand masterkeys and masterkeys shall be sent directly to the Owner by registered mail, return receipt if requested.
- .7 Supply:

- |    |                  |             |
|----|------------------|-------------|
| 1. | Grand Masterkeys | 3           |
| 2. | Masterkeys       | 3 per group |
| 3. | Change Keys/Lock | 4           |

## **2.6 KEY CONTROL**

- .1 Provide a key control system, including envelopes, labels with self-locking clips, receipt forms, 3-way visible card index, temporary markers and permanent markers and standard metal cabinet. Allow for 150% of the number of locks required on the project.
- .2 Provide complete cross index system set up by the Hardware Supplier and place keys on markers and hooks in the key cabinet as determined by the final key schedule.
- .3 Install and give instruction to owner on how the system is to be used.
- .4 Provide hinged-panel type cabinet for wall mounting.
- .5 Standard of acceptance: RWC-50-S.

## **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.
- .4 Wiring Diagrams: Provide any special information, voltage requirements and wiring diagrams to other trades requiring such information.

### **3.2 INSTALLATION**

- .1 Install door hardware in accordance with manufacturer's instructions, using special tools and jigs. Fit accurately and apply securely. Ensure that hardware is installed correctly. Issue instructions if required to Sections concerned.
- .2 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 Manufacturers' Association.
- .3 Installation is to be done by a qualified tradesman, if technical assistance is required contact the hardware supplier.

- .4 Where door stop contacts door pulls, mount stop to strike bottom of pull.
- .5 Install key control cabinet.
- .6 Use only manufacturer's supplied fasteners. Failure to comply may void manufacturer's warranties and applicable licensed labels. Use of "quick" type fasteners, unless specifically supplied by manufacturer, is unacceptable.
- .7 Remove construction cores and locks when directed by Contractor; install permanent cores and check operation of locks.
- .8 Hardware should not be installed until all finishing is complete.
- .9 All hardware to be installed level plumb and true.
- .10 All operating parts to work freely and smoothly.
- .11 Exterior thresholds to be set in exterior sealants.
- .12 Install Power Operators as per manufacturer's instructions and by a qualified installer.
- .13 Access control to be installed by a certified installer.
- .14 High voltage wiring by division 16. Low voltage wiring by access control supplier.

### **3.3 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 All defective or damaged hardware will have to be repaired or replaced at the Contractor's expense.

### **3.4 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.

### **3.5 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 Maintenance Staff Briefing:
  - .1 Brief maintenance staff regarding:
  - .2 Proper care, cleaning, and general maintenance of projects complete hardware.
  - .3 Description, use, handling, and storage of keys.
  - .4 Use, application and storage of wrenches for door closers, locksets and fire exit hardware.
  - .5 Demonstrate operation, operating components, adjustment features, and lubrication requirements.

### **3.6 FIELD QUALITY CONTROL**

- .1 An inspection report will be required 6 months after substantial completion by a qualified Architectural Hardware Consultant to note any deficiencies. The inspection should include checking each lock against the key schedule to make sure the correct locks and cylinders are on the proper doors.

### **3.7 PROTECTION**

- .1 Protection must be given to all products and finishes until such time as the owner accepts the project.

### **3.8 CERTIFICATION**

- .1 After installation, Hardware Supplier is to have a regular member of the Architectural Hardware Consultants' (AHC) Association inspect and certify in writing that all items and their installations are in accordance with specified requirements.

### **3.9 DOOR HARDWARE SETS**

- .1 The door hardware sets represent the design intent and direction of the owner and architect. They are a guideline only and should not be considered a detailed hardware schedule. Discrepancies, conflicting hardware and missing items should be brought to the attention of the architect with corrections made prior to the bidding process. Omitted items not included in a hardware set should be scheduled with the appropriate additional hardware required for proper application and functionality.
- .2 The supplier is responsible for handing and sizing all products as listed in the door hardware sets. Quantities listed are for each pair of doors, or for each single door.
- .3 Products listed in the Door Hardware Sets must meet the requirements described in the specification sections noted.

**3.10 HARDWARE SCHEDULE**

**Set: 1.0**

3 Hinge	TA2714 114mm x 102mm	US26D	MK
1 Office Lock	DG1 28 10G05 LL	US26D	SA
1 Wall Stop	406 (Convex HD)	US32D	RO

**Set: 2.0**

2 Hinge	TA2714 114mm x 102mm	US26D	MK
1 Hinge	TA2714 QC-12 114mm x 102mm	US26D	MK
1 Access Control Lock	DG1 M1-82271-24V-IPS LNL	US26D	SA
1 Wall Stop	406 (Convex HD)	US32D	RO
1 Threshold	271A x Door Width		PE
1 Gasketing	379CPK x 3 Sides		PE
1 Door Bottom	411ARL x Door Width		PE
1 Power Supply	BPS-24-1		SU
1 By Others	Honeywell Temaline Controller		00
1 Certified Installer	Installation		00
1 Wiring Diagrams	Wirung Diagrams (Elevations & Point to Point)		SA
1 Raceway Harness Wires W/Pins-3'0	93995-QC-C300P-QC12-12	Std	MK
1 Wiring Harness Wires W/Pins-15'0	93998-QC-1500P-QC12-12	Std	MK

Notes:

REQUIRES 120VAC POWER TO POWER SUPPLY LOCATION BY ELECTRICAL SUPPLIER.  
REQUIRES LOW VOLTAGE FROM POWER SUPPLY TO ELECTRIFIED LOCK LOCATION.  
REQUIRES LOW VOLTAGE AND COMMUNICATION WIRE BY ELECTRICAL SUPPLIER.  
REQUIRES CONDUIT TO BE SUPPLIED AND INSTALLED BY ELECTRICAL SUPPLIER.  
REQUIRES WIRE AND WIRE PULL BY ELECTRICAL SUPPLIER.  
REQUIRES WIRE CHASE IN THE DOOR.  
REQUIRES INSTALLATION OF HARMONY LOCK BY A CERTIFIED INSTALLER.

MODE OF OPERATION:

DOOR TO BE LOCKED AT ALL TIMES. ENTRY BY AUTHORIZED CARD OR KEY.  
ENTRY BY AUTHORIZED CARD WILL UNLOCK LEVER AND ALLOW LEVER TO  
DEPRESS AND RETRACT LATCH. STANDARD FUNCTIONALITY FOR DOOR  
CONTACTS AND REQUEST TO EXIT. LOCK HAS MECHANICAL KEY OVERRIDE.  
FREE EXIT AT ALL TIMES.

**Set: 3.0**

3	Hinge	T4A3786 114mm x 102mm	US26D	MK
1	Office Lock	DG1 28 10G05 LL	US26D	SA
1	Door Closer (surface)	421 CTB (Pull Side)	EN	SA
1	Wall Stop	406 (Convex HD)	US32D	RO
1	Sound Seals	By Wood Door Manufacturer (Gasgetting, Threshold and Auto Door Bottom)	Std	00

Notes:

Acoustical Doors to STC-45, Gasketing, Threshold and Auto Door Bottom by Door Manufacturer.  
 Doors to SR-45.

**Set: 4.0**

5	Hinge	T4A3786 NRP 114mm x 102mm	US26D	MK
1	Hinge	T4A3786 QC-12 114mm x 102mm	US26D	MK
1	Dust Proof Strike	570	US26D	RO
1	Flush Bolt (Latching)	2845 (Hollow Metal)	US32D	RO
1	Access Control Exit Device	DG1 12 63 64 M1-8976-24V-IPS ETL	US32D	SA
2	Door Closer (surface)	421 PCTB (Push Side)	EN	SA
2	Cover Plate	1431J	EN	SA
2	Kickplate	K1050 355mm x 25mm LDW	US32D	RO
2	Wall Stop	406 (Convex HD)	US32D	RO
1	Gasketing	319CS x 3 Sides		PE
1	Astragal	355CS x Height		PE
1	Position Switch	DPS-W-BK		SU
1	Power Supply	BPS-24-1		SU
1	By Others	Honeywell Temaline Controller		00
1	Certified Installer	Installation		00
1	Wiring Diagrams	Wirung Diagrams (Elevations & Point to Point)		SA
1	Raceway Harness Wires W/Pins-2'0	93993-QC-C200P-QC12-12	Std	MK
1	Wiring Harness Wires W/Pins-15'0	93998-QC-1500P-QC12-12	Std	MK

Notes:

REQUIRES 120VAC POWER TO POWER SUPPLY LOCATION BY ELECTRICAL SUPPLIER.  
 REQUIRES LOW VOLTAGE FROM POWER SUPPLY TO ELECTRIFIED LOCK LOCATION.  
 REQUIRES LOW VOLTAGE AND COMMUNICATION WIRE BY ELECTRICAL SUPPLIER.  
 REQUIRES CONDUIT TO BE SUPPLIED AND INSTALLED BY ELECTRICAL SUPPLIER.  
 REQUIRES WIRE AND WIRE PULL BY ELECTRICAL SUPPLIER.  
 REQUIRES WIRE CHASE IN THE DOOR.  
 REQUIRES INSTALLATION OF HARMONY LOCK BY A CERTIFIED INSTALLER.

MODE OF OPERATION:

DOOR TO BE LOCKED AT ALL TIMES. ENTRY BY AUTHORIZED CARD OR KEY.  
 ENTRY BY AUTHORIZED CARD WILL UNLOCK LEVER AND ALLOW LEVER TO  
 DEPRESS AND RETRACT LATCH. STANDARD FUNCTIONALITY FOR DOOR  
 CONTACTS AND REQUEST TO EXIT. LOCK HAS MECHANICAL KEY OVERRIDE.  
 FREE EXIT AT ALL TIMES.

**Set: 5.0**

3	Key	6272MK		SA
5 0	Keyblank	6275 LA		SA
5 0	Prox Card	PSC1		00
1	Molex Hand Crimp Tool	94036-QC-R003	Std	MK
1	Extraction Tool	94035-QC-R002	Std	MK
1	Molex Service Repair Kit	94034-QC-R001	Std	MK
1	Wiegand Tester	WT1	Std	MK
1	Certified Installer	Access Control Installation		00
1	Training	Training for Access Control		00
1	Key Cabinet	RWC-50-S	Std	TK

Door Index					
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Opening Numbers	Heading Numbers	Opening Numbers	Heading Numbers	Opening Numbers	Heading Numbers
201	4.0				
202	1.0				

