

PART 1 - GENERAL

1.1 REFERENCES

- .1 American National Standards Institute (ANSI)
/ Builders Hardware Manufacturers Association
(BHMA)
 - .1 ANSI/BHMA A156.1-2000, American National
Standard for Butts and Hinges.
 - .2 ANSI/BHMA A156.3-2001, Exit Devices.
 - .3 ANSI/BHMA A156.4-2000, Door Controls -
Closers.
 - .4 ANSI/BHMA A156.6-2005, Architectural
Door Trim.
 - .5 ANSI/BHMA A156.8-2005, Door Controls -
Overhead Stops and Holders.
 - .6 ANSI/BHMA A156.10-1999, Power Operated
Pedestrian Doors.
 - .7 ANSI/BHMA A156.13-2002, Mortise Locks
and Latches Series 1000.
 - .8 ANSI/BHMA A156.15-2006, Release Devices
- Closer Holder, Electromagnetic and
Electromechanical.
 - .9 ANSI/BHMA A156.16-2002, Auxiliary
Hardware.
 - .10 ANSI/BHMA A156.17-2004, Self-closing
Hinges and Pivots.
 - .11 ANSI/BHMA A156.18-2006, Materials and
Finishes.
 - .12 ANSI/BHMA A156.19-2002, Power Assist and
Low Energy Power - Operated Doors.
- .2 Canada Green Building Council (CaGBC)
 - .1 LEED Canada-NC-2009, LEED (Leadership in
Energy and Environmental Design): Green
Building Rating System Reference Package For
New Construction and Major Renovations.
- .3 Canadian Steel Door and Frame Manufacturers'
Association (CSDMA)
 - .1 CSDMA Recommended Dimensional Standards
for Commercial Steel Doors and Frames - 2009.

1.2 ACTION AND
INFORMATIONAL
SUBMITTALS

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Product Data:
 - .1 Submit manufacturer's instructions, printed product literature and data sheets for door hardware and include product characteristics, performance criteria, physical size, finish and limitations.
- .3 Samples:
 - .1 If requested, submit for review and acceptance of each unit.
 - .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 Work.
- .4 Hardware List:
 - .1 Submit contract hardware list.
 - .2 Indicate specified hardware, including make, model, material, function, size, finish and other pertinent information.
- .5 Manufacturer's Instructions: submit manufacturer's installation instructions.
- .6 Sustainable Design Submittals:
 - .1 LEED Canada-NC Version 1.0 Submittals: in accordance with Section 01 35 21 - LEED Requirements.

1.3 CLOSEOUT
SUBMITTALS

- .1 Submit in accordance with Section 01 78 00 - Closeout Submittals.
 - .2 Operation and Maintenance Data: submit operation and maintenance data for door hardware for incorporation into manual.
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| 1.4 MAINTENANCE MATERIALS <u>SUBMITTALS</u> | .1 Extra Stock Materials: .1 Supply maintenance materials in accordance with Section 01 78 00 - Closeout Submittals. .2 Tools: .1 Supply 2 sets of wrenches for door closers, locksets and fire exit hardware. |
| 1.5 QUALITY <u>ASSURANCE</u> | .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. |
| 1.6 DELIVERY, STORAGE AND <u>HANDLING</u> | .1 Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements and with manufacturer's written instructions. .2 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address. .3 Package items of hardware including fastenings, separately or in like groups of hardware, label each package as to item definition and location. .4 Storage and Handling Requirements: .1 Store materials indoors in dry location and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area. .2 Store and protect door hardware from nicks, scratches, and blemishes. .3 Protect unfinished surfaces with wrapping or strippable coating. .4 Replace defective or damaged materials with new. .5 Develop Construction Waste Management Plan related to Work of this Section and in accordance with Section 01 35 21 - LEED Requirements. |

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| 1.6 DELIVERY, STORAGE AND HANDLING (Cont'd) | .6 | Packaging Waste Management: remove for reuse or return of pallets, crates, padding, banding, and packaging materials as specified in Construction Waste Management Plan in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal and Section 01 35 21 - LEED Requirements. |
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PART 2 - PRODUCTS

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| 2.1 HARDWARE ITEMS | .1 | Use one manufacturer's products only for similar items. |
| 2.2 DOOR HARDWARE | .1 | Locks and latches: .1 Lever handles: tubular design with return on open end. .2 Roses: round. .3 Normal strikes: box type, lip projection not beyond jamb. |
| | .2 | Butts and hinges: .1 Butts and hinges: to ANSI/BHMA A156.1, as listed in Hardware Schedule. .2 Self-closing hinges and pivots: to ANSI/BHMA A156.17, as listed in Hardware Schedule. |
| | .3 | Exit devices: to ANSI/BHMA A156.3, types as listed in Hardware Schedule. .1 Auxiliary items: door co-ordinator, type 21, for pairs of doors with overlapping astragals. |
| | .4 | Door Closers and Accessories: .1 Door controls (closers): to ANSI/BHMA A156.4, as listed in Hardware Schedule. .2 Door controls - overhead holders: to ANSI/BHMA A156.8, as listed in Hardware schedule. .3 Closer/holder release devices: to ANSI/BHMA A156.15, as listed in hardware schedule. .4 Door co-ordinator: surface for pairs of doors with overlapping astragal. |
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- 2.2 DOOR HARDWARE .5 Door Operators:
 (Cont'd)
- .1 Power-operated pedestrian doors: to ANSI/BHMA A156.10.
 - .2 Power assist and low energy power operated doors: to ANSI/BHMA A156.19.
 - .6 Auxiliary locks and associated products: to ANSI/BHMA A156.5, as listed in Hardware Schedule.
 - .7 Architectural door trim: to ANSI/BHMA A156.6, as listed in Hardware Schedule.
 - .8 Auxiliary hardware: to ANSI/BHMA A156.16,
 - .9 Door bottom seal: as listed in hardware schedules.
 - .10 Thresholds: as listed in hardware schedule.
 - .11 Weatherstripping: as listed in hardware schedule.
 - .12 Astragal: as listed in hardware schedule.
- 2.3 KEY CONTROL .1 Indexed key control system: to ANSI/BHMA
CABINET A156.5, wall mounted, 50% oversized.
- 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.
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2.4 FASTENINGS
(Cont'd)

- .5 Use fasteners compatible with material through which they pass.

2.5 KEYING

- .1 Keying to be advised at shop drawing stage.
- .2 Supply keys in duplicate for every lock in this Contract.
- .3 Supply 3 master keys for each master key or grand master key group.
- .4 Stamp keying code numbers on keys and cylinders.
- .5 Keying/cylinders to be Medeco.

PART 3 - EXECUTION

3.1 INSTALLATION

- .1 Manufacturer's Instructions: comply with manufacturer's written recommendations, including product technical bulletins, product catalogue installation instructions, product carton installation instructions, and data sheets.
- .2 Supply metal door and frame manufacturers with complete instructions and templates for preparation of their work to receive hardware.
- .3 Supply manufacturers' instructions for proper installation of each hardware component.
- .4 Install hardware to standard hardware location dimensions in accordance with CSDFMA Canadian Metric Guide for Steel Doors and Frames (Modular Construction).
- .5 Where door stop contacts door pulls, mount stop to strike bottom of pull.
- .6 Install key control cabinet, where directed.
- .7 Use only manufacturer's supplied fasteners.

- 3.1 INSTALLATION .7 (Cont'd)
(Cont'd)
.1 Use of "quick" type fasteners, unless specifically supplied by manufacturer, is unacceptable.
- 3.2 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 ensure tight fit at contact points with frames.
- 3.3 CLEANING .1 Progress Cleaning: clean in accordance with Section 01 74 11 - Cleaning.
.1 Leave Work area clean at end of each day.
.2 Clean hardware with damp rag and approved non-abrasive cleaner, and polish hardware in accordance with manufacturer's instructions.
.3 Remove protective material from hardware items where present.
.4 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11 - Cleaning.
.2 Waste Management: separate waste materials for reuse and recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal and Section 01 35 21 - LEED Requirements.
.1 Remove recycling containers and bins from site and dispose of materials at appropriate facility.
- 3.4 DEMONSTRATION .1 Keying System Setup and Cabinet:
.1 Set up key control system with file key tags, duplicate key tags, numerical index,
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- 3.4 DEMONSTRATION .1 (Cont'd)
(Cont'd)
- .1 (Cont'd)
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:
.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.
- 3.5 PROTECTION .1 Protect installed products and components from damage during construction.
- .2 Repair damage to adjacent materials caused by door hardware installation.
- 3.6 HARDWARE GROUPS .1 Door opening numbers quoted herein apply to MCTS unless otherwise indicated.
- .2 Hardware Groups:
HG X0
Hardware by door supplier.
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3.6 HARDWARE GROUPS .2 Hardware Groups: (Cont'd)
(Cont'd)

HG X1

1 CONTINUOUS HINGE 661 HD X AL X CE X CS
1 RIM TYPE EXIT DEVICE SD-EL98L-NL-17
LEVER-CYL-3'-996L
TRIM-630
1 AUTOMATIC OPERATOR GT500 X 628
1 POWER SUPPLY PS873BK
1 KEY SWITCH CM170/6 X 630
1 SWITCH NETWORK CX-11
1 MOTION DETECTOR OA-202C
1 LOCKOUT RELAY LO-21
1 TRANSFORMER 142101-12/24V-40VA
1 JAMB SWITCH CM-25/4 X 630
1 GUIDE RAIL CE-810-605-E-3-AL
1 THRESHOLD 273X3FG WITH 1842 STOP STRIP X AL
1 SET WEATHER STRIPPING 316 PK - PG X AL
1 DECAL CE-714 ACCESSIBLE SYMBOL
1 DECAL CE-715 CAUTION AUTO DOOR

Note:

Prox Card Reader Request to Exit Sensor and Controller, By Div. 26. When Exit Device is dogged open by control panel, free access both sides, push/pull operation.

Key by-pass in event of power failure.

Vestibule Push Button to operate automatic operators at all times.

Exterior Push Button to operate automatic operators during business hours only.

Card Reader to operate automatic operators at all times.

Card Reader Exterior side to bypass alarm and release Exit Device during secure hours.

Locate Card Reader and Push Button as indicated.

Key Switch to turn operator off or on for security and maintenance. Install 1200 mm C/L Fr. Fin. fl.

Confirm actual size of threshold from site conditions.

Hook-up of Low Voltage Items by Equip. Installer.

All 12-24 V connections to be by plug connectors.

Requires (conduit) 12/24 V to ea. push button from Auto Op.

3.6 HARDWARE GROUPS .2 Hardware Groups: (Cont'd)
(Cont'd)

Requires (conduit) 12/24V from power supply to centre of active door hinge.
Requires (conduit) 12/24V from power supply to door hinge.
Requires 120 VAC to header for Auto Operator.
Requires (conduit) 120 VAC to Power Supply.
120V Electrical Wiring and Conduit by Division 26.
Requires (conduit) 12/24V to door monitoring system by Division 26.

HG X2

1 CONTINUOUS HINGE 661HD X AL X CS
1 RIM TYPE EXIT DEVICE 98L X 03 LEVEL X CYL
X 996L TRIM X C32D
1 CLOSER 4041 X CUSH X AL
1 THRESHOLD 273 X 3FG WITH 1842V STOP STRIP
X AL
1 SET WEATHERSTRIPPING 316PK-PG X AL

HG X3

RHR ACTIVE
2 CONTINUOUS HINGES 661 HD X AL X CS
1 RIM TYPE EXIT DEVICE 98L X 03 LEVER X CYL X
996L TRIM X C26D
1 DOOR CLOSER X HD X PA X CUSH X H/O X AL
1 O/H STOP X HO X HD X C26D
1 SET MANUAL FLUSH BOLTS X C 26D
1 OVERLAPPING ASTRAGAL X STAINLESS STEEL X
WEATHERSTRIP
1 THRESHOLD 273 X 3 FG WITH 1842 STOP STRIP
X AL
1 SET WEATHERSTRIPPING 316 PR-PG X AL

HG X4

1 CONTINUOUS HINGE 661 HD X AL X CS
1 EXIT DEVICE 98L X 03 LEVEL X CYL
1 ELECTRIC STRIKE X 24 X VDC X FAIL SAFE X
C26D
1 CLOSER 4041 X CUSH X AL
1 THRESHOLD 273 X 3FG WITH 184 2V STOP STRIP
X AL
1 SET WEATHERSTRIPPING 316PK-PG X AL

3.6 HARDWARE GROUPS .2 Hardware Groups: (Cont'd)
(Cont'd)

Notes:

Prox Card Reader and Request to Exit Sensor by Divison 26. Prox Card Reader located as indicated by Division 26, to operate electric striker.

HX X5

1 CONTINUOUS HINGE 661 HD X AL X CS
1 STOREROOM FUNCTION LOCKSET X LEVER X CYL X C26D KEYED TO THE INTERIOR
1 CLOSER X PULL SIDE MOUNT X HD X STOP X AL
1 THRESHOLD 273 X 3FG WITH 1842V STOP STRIP X AL
1 SET WEATHERSTRIPPING 316 PG X AL

HG 0

Hardware by door supplier.

HG 1

3 HINGES 114 MM X 101 MM X BB X STD WGT X C26D
1 EXIT DEVICE SD-EL98L-17 LEVEL-CYL-3'-996L TRIM-630
1 AUTOMATIC OPERATOR GT500 X 628 (ACTIVE LEAF)
1 POWER SUPPLY PS873BK
1 KEY SWITCH CM170/6 X 630
1 SWITCH NETWORK CX-11
1 MOTION DETECTOR OA-202C
1 LOCKOUT RELAY LO-21
1 TRANSFORMER 142101-12/24V-40VA
1 JAMB SWITCH CM-25/4 X 630
1 DECAL CE-714 ACCESSIBLE SYMBOL
1 DECAL CE-715 CAUTION AUTO DOOR.

Notes:

Free exiting at all times.
Door locked and unlocked by key.
When key switch is in auto position, pushing either operator button releases door and opens it.
Confirm size and location of each push button switch from site conditions, adjust size and type to suit site conditions.
Hook-up of Low Voltage Items by Equip. Installer.

3.6 HARDWARE GROUPS .2 Hardware Groups: (Cont'd)
(Cont'd)

All 12-24V connections to be by plug connectors.
Requires (conduit) 12/24V to each push button from Auto Operator.
Requires (conduit) 12/24V from power supply to centre of active door hinge.
Requires 120 VAC to heater for Auto Operator.
Requires (conduit) 120 VAC to Power Supply.
120V electrical wiring and conduit by Division 26.

HG 2

3 HINGES 114MM X 101MM X BB X STD WGT X C26D
1 STOREROOM FUNCTION LOCKSET X LEVER CYL X C26D
1 DOOR CLOSER X HD X PUSH SIDE X AL
1 FLOOR STOP
(OH STOP X C26D FOR OPENINGS 106 AND 210)

HG 3

3 HINGES 114MM X 101MM X BB X STD WGT X C26D
1 CLASSROOM FUNCTION LOCKSET X LEVER CYL X C26D
1 FLOOR STOP X C26D

HG 4

3 HINGES 114MM X 101MM X BB X STD WGT X C26D
1 PASSAGE SET X LEVER C26D
1 FLOOR STOP X C26D

HG 5

3 HINGES 114MM X 101MM X BB X NRP X STD WGT X C26D
1 STOREROOM FUNCTION LOCKSET X LEVER X CYL X C26D
1 ELECTRIC STRIKE X C26D X 24 VDC
1 DOOR CLOSER X HD X PA X STOP X AL

Notes:

Prox Card Reader Request to Exit Sensor by Division 26.
Prox Card Reader located as indicated by Division 26 to operate electric strike.
Key bypass in event of power failure.

3.6 HARDWARE GROUPS .2 Hardware Groups: (Cont'd)
(Cont'd)

HG 6

3 HINGES 114MM X 101MM X BB X STD WGT X C26D
1 RIM TYPE EXIT DEVICE X LEVER X CYL X C26D
1 CLOSER X PA X STOP X AL

HG 7

RESCUE HARDWARE

1 SET TOP AND BOTTOM SELF-CLOSING PIVOTS X
HEAVY DUTY X C26D
1 INSTITUTIONAL PRIVACY LOCK 50-8267-P LEVER
X C26D
(PRIVACY SET WITH VISUAL OCCUPANCY
INDICATOR, RESCUE WITHOUT THE USE OF "TOOLS")
1 FLOOR STOP X C26D
1 SET GASKET X AL X VINYL SWEEP STRIP

HG 8

3 HINGES 114MM X 101MM X BB X STD WGT X C26D
1 RIM TYPE EXIT DEVICE X LEVER X CYL X C26D
1 DOOR CLOSER X PA X STOP X AL
1 SET GASKET S88BL
(EXIT DEVICES LESS CYL FOR OPENINGS 131,
200 X 215)

HG9

RHR ACTIVE (LHR ACTIVE FOR OPNG 112 IN C&P
BUILDING)
6 HINGES 114MM X 101MM X BB X STD WGT X C26D
1 STOREROOM FUNCTION LOCKSET X LEVER X CYL X
C26D
1 SET CONSTANT LATCHING FLUSH BOLTS X C26D
1 DOOR CLOSER X HD X PUSH SIDE X AL
1 O/H DOOR STOP X C26D
1 SET GASKET X S88BL
1 OVERLAPPING ASTRAGAL X STEEL X HOT DIPPED
GALVANIZED

HG 10

3 HINGES 114MM X 101MM X BB X STD WGT X C26D
1 STOREROOM FUNCTION LOCKSET X CYL X C26D
1 ELECTRIC STRIKE X 24 VDC X FAIL
SAFE X C26D
1 DOOR CLOSER X HD X PA X STOP X AL

3.6 HARDWARE GROUPS .2 Hardware Groups: (Cont'd)
(Cont'd)

Notes:

Prox Card Reader and Request to Exit Sensor by Division 26.

Prox Card Reader located as indicated by Division 26, to operate electric strike. Key bypass in event of power failures.

HG 11

3 HINGES 114MM X 101MM X BB X STD WGT X C26D
1 RIM TYPE EXIT DEVICE X LEVER X CYL X C26D
1 SURFACE MOUNT MAG LOCK X 1200# X AL
DOOR CLOSER X HD X PA X STOP X AL

Notes:

Request to Exit Sensor by Division 26.

Pull Station located as indicated by Division 26, to operate mag lock
Pull station by Division 26.

HG 12

3 HINGES 114 MM X 101 MM X BB X NRP X STD WGT X C26D
1 STOREROOM FUNCTION LOCKSET X CYL X C26D
1 DOOR CLOSER X HD X PULL SIDE MOUNT X AL
1 FLOOR STOP
(Keyed differently and not master keyed for Opening No. 109 in C&P Building)

HG13

3 HINGES 114 MM X 101 MM X BB X NRP X C26D
1 RIM TYPE EXIT DEVICE X LEVER X CYL X C26D
1 ELECTRIC STRIKE X 24 X VDC X FAIL SAFE X C26D
1 DOOR CLOSER X HD X PA X STOP X AL

Notes:

Prox Card Reader and Request to Exit Sensor by Division 26.

Prox Card Reader located as indicated by Division 26, to operate electric strike.