

1. GENERAL

1.1. RELATED REQUIREMENTS

- .1 Section 08 11 00 – Metal Doors and Frames
- .2 Section 08 42 29 – Automatic Entrances
- .3 Section 08 44 23 – Structural Sealant Glazed Curtain Walls

1.2. REFERENCES

- .1 ANSI/BHMA A156.1-[2000], American National Standard for Butts and Hinges.
- .2 ANSI/BHMA A156.2-[2003], Bored and Preassembled Locks and Latches.
- .3 ANSI/BHMA A156.3-[2001], Exit Devices.
- .4 ANSI/BHMA A156.4-[2000], Door Controls - Closers.
- .5 ANSI/BHMA A156.5-[2001], Auxiliary Locks and Associated Products.
- .6 ANSI/BHMA A156.6-[2005], Architectural Door Trim.
- .7 ANSI/BHMA A156.8-[2005], Door Controls - Overhead Stops and Holders.
- .8 ANSI/BHMA A156.10-[1999], Power Operated Pedestrian Doors.
- .9 ANSI/BHMA A156.13-[2002], Mortise Locks and Latches Series 1000.
- .10 ANSI/BHMA A156.14-[2002], Sliding and Folding Door Hardware.
- .11 ANSI/BHMA A156.16-[2002], Auxiliary Hardware.
- .12 ANSI/BHMA A156.17-[2004], Self-closing Hinges and Pivots.
- .13 ANSI/BHMA A156.18-[2006], Materials and Finishes.
- .2 Canadian Steel Door and Frame Manufacturers' Association (CSDMA)
 - .1 CSDMA Recommended Dimensional Standards for Commercial Steel Doors and Frames - 2009.

1.3. 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 Submit for review and acceptance of each unit.
 - .2 Samples will be returned for inclusion into work.
 - .3 Identify each sample by label indicating applicable specification paragraph number, brand name and number, finish and hardware package number.
 - .4 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 Test Reports: certified test reports showing compliance with specified performance characteristics and physical properties.
- .6 Manufacturer's Instructions: submit manufacturer's installation instructions.

1.4. 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.

1.5. MAINTENANCE MATERIALS SUBMITTALS

- .1 Supply maintenance materials in accordance with Section 01 78 00 - Closeout

- .2 Tools:
 - .1 Supply 2 sets of wrenches for door closers, locksets and fire exit hardware.

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 Certificates: product certificates signed by manufacturer certifying materials comply with specified performance characteristics and criteria and physical requirements.

1.7. **DELIVERY, STORAGE AND HANDLING**

- .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 off ground 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 prefinished surfaces with wrapping.
 - .4 Replace defective or damaged materials with new.

2. **PRODUCTS**

2.1. **DOOR HARDWARE**

- .1 Locks and Latches
 - .1 Bored and preassembled locks and latches: to ANSI/BHMA A156.2, series 4000 bored lock, designed for function as stated in Hardware Schedule.
 - .2 Interconnected locks and latches: to ANSI/BHMA A156.12, series 5000 interconnected lock, designed for as stated in Hardware Schedule.
 - .3 Mortise locks and latches: to ANSI/BHMA A156.13, series 1000 mortise lock, designed for function as stated in Hardware Schedule.
 - .4 Lever handles: as specified design.
 - .5 Normal strikes: box type, lip projection not beyond jamb.
 - .6 Cylinders: key into keying system as directed.
- .2 Butts and Hinges
 - .1 Butts and hinges: to ANSI/BHMA A156.1, listed in Hardware Schedule.
 - .2 Self-closing hinges and pivots: to ANSI/BHMA A156.17, listed in Hardware Schedule.
 - .3 Strap and tee hinges and hasps: to ANSI/BHMA A156.20, listed in Hardware Schedule
- .3 Door Closers and Accessories
 - .1 Door controls/closers: to ANSI/BHMA A156.4, listed in Hardware Schedule.
 - .2 Door controls - overhead holders: to ANSI/BHMA A156.8, listed in Hardware Schedule.
 - .3 Closer/holder release devices: to ANSI/BHMA A156.15, listed in hardware schedule.
- .4 Door Operators
 - .1 Power-operated pedestrian doors: to ANSI/BHMA A156.10.
 - .2 Power assist and low energy power operated doors: to ANSI/BHMA A156.19.
- .5 Architectural Door Trim
 - .1 Architectural door trim: to ANSI/BHMA A156.6, listed in Hardware Schedule

- .2 Door protection plates: kick plate, 1.27 mm thick stainless steel, listed in Hardware Schedule

2.2. 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.

2.3. KEYING

- .1 Door locks to be keyed alike in groups by address
- .2 Supply keys in duplicate for every lock in this Contract.
- .3 Supply construction keying.
- .4 Supply master keys for all public entrances/areas.

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 manufacturers' instructions for proper installation of each hardware component.
- .3 Pre-fit hardware prior to application of final finishes, remove and reinstall hardware once finish is complete ensuring proper fit and function.
- .4 Supply metal door and frame manufacturers with complete instructions and templates for preparation of their work to receive hardware.
- .5 Install surface mounted hardware with fasteners as supplied by the manufacturer where proper reinforcing is sufficient to securely attach. Self-threading fasteners are permitted only as indicated in manufacturers printed instructions and included in standard packaging for items. Pre-drill wood doors to accept fasteners and provide secure installation. Failure to comply may void manufacturer's warranties and applicable licensed labels.
- .6 Install hardware to standard hardware location dimensions in accordance with CSDFMA Canadian Metric Guide for Steel Doors and Frames (Modular Construction).
- .7 Location of locks latches and operating trim: established in accordance with DHI (Door and Hardware Institute) "Recommended Locations for Architectural Hardware for Standard Steel Doors" and "Recommended Locations for Architectural Hardware for Flush Wood Doors"
- .8 Locate surface mounted door closers on the room side of door opposite corridors where possible. Method of installation to provide positive latching and ease of operation without conflicting with other hardware installed at opening.
- .9 Where door stop contacts door pulls, mount stop to strike bottom of pull.
- .10 Install floor stops only where application does not permit installation of wall stops.
- .11 Install key control cabinet as directed by Contract Administrator.
- .12 Use only manufacturer's supplied fasteners.
 - .1 Use of "quick" type fasteners, unless specifically supplied by manufacturer, is unacceptable.
- .13 Remove construction cores and locks when directed by Contract Administrator.
 - .1 Install permanent cores and ensure locks operate correctly.

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.

3.4. 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 Contract Administrator.
- .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 SCHEDULE

- .1 Protect installed products and components from damage during construction.

HARDWARE SET 1

For use on door(s): D100a (main entry ext)

1	EA	THRESHOLD	CT-100 & CT-106	627	KNC
1	EA	MULTITECH READER	MT11	BLK	SCE
ACCESS CONTROL-WORK OF DIVISION 28					
BALANCE OF HARDWARE BY MANUFACTURER					

Door unlocked by valid credential at reader.

HARDWARE SET 2

For use on door(s): D100b (main entry int)

1	EA	THRESHOLD	CT-100 & CT-106	627	KNC
BALANCE OF HARDWARE BY MANUFACTURER					

HARDWARE SET 3

For use on door(s): D101 (west ext)

1	EA	CONT. HINGE	DSPFMHD3 83	710	PEM
1	EA	POWER TRANSFER	EPT10 CON	689	VON
1	EA	ELEC PANIC HDW	LX-CDSI-35A-EO-CON	626	VON
1	EA	MORTISE CYLINDER	1E74	626	BEST
1	EA	RIM CYLINDER EXT	1E72	690	BEST
1	EA	OH STOP	100S	630	GLY
1	EA	SURF. AUTO OPER	9542 MS	CLR	LCN
1	EA	36" NARROW INGRESS'R SWITCH, LOGO 3		710	WIKK
1	EA	36" NARROW INGRESS'R SWITCH, LOGO 3		628	WIKK
1	EA	THRESHOLD	CT-410	627	KNC
1	EA	DOOR CONTACT	679-05HM	BLK	SCE
1	EA	RELAY MODULE	RB6		
1	EA	WIRE HARNESS	CON-192		VON
1	EA	WIRE HARNESS	CON-6		VON
1	EA	WIRE HARNESS	CON-6W		VON

SEALS BY DOOR SUPPLIER

Free Egress at all times. Pressing Push Bar retracts latchbolts. No exterior trim, keyed cylinder exterior retracts latchbolt. One internal SPDT switch monitors the latchbolt position. Dogging by key cylinder with visible security indicator locks down the pushbar or crossbar so the latchbolt remains retracted.

Door Position Switch monitors whether the door is open or closed.

HARDWARE SET 4

For use on door(s): D102a (mpr north), D105 (tutorial)

1	EA	PATCH PIVOT BOT	OPF10	630	CRL
1	EA	PATCH PIVOT TOP	OPF20	630	CRL
1	SET	LONG DOOR PULL	PR 9266F 24" P	630	IVE
1	EA	AUTO OPERATOR	ED400 IG	628	DRM
2	EA	36" NARROW INGRESS'R SWITCH, LOGO 3		628	WIKK
1	EA	WALL STOP	WS406/407CVX	630	IVE
1	EA	MAGNETIC LOCK	40 HDB40 CWB40	630	SCE
1	EA	WIRELESS READER	R100-1H	BLK	SEC
1	EA	MOTION SENSOR	SCANII	BLK	SCE

ACCESS CONTROL WORK OF DIVISION 28

SEE MISC ITEMS FOR EMERGENCY RELEASE SWITCH AND POWER

Magnetic lock secured when powered (Fail Safe). Door Status Monitor monitors whether the door is open or closed. Magnetic Bond Sensor monitors door is secure at optimal holding force. Motion sensor/PIR provided on the egress side to detect an occupant approaching the doors

HARDWARE SET 5a

For use on door(s): D102b (mpr south)

1	EA	PATCH PIVOT BOT	OPF10	630	CRL
1	EA	PATCH PIVOT TOP	OPF20	630	CRL
1	SET	LONG DOOR PULL	PR 9266F 24" P	630	IVE
1	EA	FLR CLOSER	BTS80D	630	DRM
1	EA	WALL STOP	WS406/407CVX	630	IVE
1	EA	MAGNETIC LOCK	40 HDB40 CWB40	630	SCE
1	EA	MOTION SENSOR	SCANII	BLK	SCE
SEE MISC ITEMS FOR EMERGENCY RELEASE SWITCH AND POWER					

Magnetic lock secured when powered (Fail Safe). Door Status Monitor monitors whether the door is open or closed. Magnetic Bond Sensor monitors door is secure at optimal holding force. Motion sensor/PIR provided on the egress side to detect an occupant approaching the doors.

HARDWARE SET 5b

For use on door(s): D104 (office)

1	EA	PATCH PIVOT BOT	OPF10	630	CRL
1	EA	PATCH PIVOT TOP	OPF20	630	CRL
1	SET	LONG DOOR PULL	PR 9266F 24" P	630	IVE
1	EA	FLR CLOSER	BTS80D	630	DRM
1	EA	WALL STOP	WS406/407CVX	630	IVE
1	EA	MAGNETIC LOCK	40 HDB40 CWB40	630	SCE
1	EA	MOTION SENSOR	SCANII	BLK	SCE
1	EA	WIRELESS READER	R100-1H	BLK	SEC
ACCESS CONTROL WORK OF DIVISION 28					
SEE MISC ITEMS FOR EMERGENCY RELEASE SWITCH AND POWER					

Magnetic lock secured when powered (Fail Safe). Door Status Monitor monitors whether the door is open or closed. Magnetic Bond Sensor monitors door is secure at optimal holding force. Motion sensor/PIR provided on the egress side to detect an occupant approaching the doors.

HARDWARE SET 6

For use on door(s): D103 (mpr storage)

2	EA	PIVOT SET	7255 SET	626	IVE
1	EA	POWER TRANSFER	EPT2	689	VON
2	EA	MANUAL FLUSH BOLT	FB458	626	IVE
1	EA	DUST PROOF STRIKE	DP2	626	IVE
1	EA	STOREROOM LOCK	L9080P 06A	626	IVE
1	EA	ELECTRIC STRIKE	6223 FSE	630	VON
2	EA	OH STOP	410S	630	GLY
1	EA	MULTITECH READER	MT11	BLK	SCE
2	EA	DOOR CONTACT	679-05HM	BLK	SCE
ACCESS CONTROL WORK OF DIVISION 28					

Latch bolt by inside push trim. Less Outside knob/lever. Auxiliary latch deadlocks latch bolt when door is locked. Inside lever is always free for immediate egress. Door unlocked by valid credential at reader.

HARDWARE SET 7a

For use on door(s): D106 (universal w/c)

3	EA	HINGE	3CB1 4.5x4	652	IVE
1	EA	CYL X TURN D LOCK	L9460F 06A L283-722 XL11-886	626	SCH
1	EA	MONITORED STRIKE	LML-2		SEC
1	EA	AUTO OPERATOR	9131 WMS	628	LCN
2	EA	36" NARROW INGRESS'R SWITCH, LOGO 3		628	WIKK
1	EA	WALL STOP	WS406/407CVX	630	IVE
1	EA	DOOR BOTTOM	CT-51F 39"	627	KNC

Inside knob or lever retracts deadbolt. Outside knob or lever is fixed. Lock Indicator will read OCCUPIED/VACANT. Locking Deadbolt shunts signal to actuators. Automatically Opens & Closes Door.

HARDWARE SET 7b

For use on door(s): D112 (staff w/c)

3	EA	HINGE	3CB1 4.5x4	652	IVE
1	EA	STOREROOM LOCK	L9080P 06A	626	SCH
1	EA	ELECTRIC STRIKE	6211 FSE CON	630	VON
1	EA	AUTO OPERATOR	9131 WMS	628	LCN
2	EA	36" NARROW INGRESS'R SWITCH, LOGO 3		628	WIKK
1	EA	WALL STOP	WS406/407CVX	630	IVE
1	EA	DOOR BOTTOM	CT-51F 39"	627	KNC
1	EA	MULTITECH READER	MT11	BLK	SCE
1	EA	PUSH BUTTON	PUSH TO LOCK	630	CAM
1	EA	DOOR CONTACT	679-05HM	BLK	SCE
1	EA	LOCK RELAY	CX-EMF-2		CAM
1	EA	WIRE HARNESS	CON-192		VON
ACCESS CONTROL WORK OF DIVISION 28					
SEE MISC ITEMS FOR POWER SUPPLY					

Inside knob or lever retracts latchbolt. Outside knob or lever is fixed. Push to lock button prevents entry while occupied. Egress provided by depressing auto operator actuator, or by turning inside lever. Exiting resets electronic system to unoccupied. Presentation of valid credential provides entry by pulling door or depressing actuator for auto operator.

HARDWARE SET 8

For use on door(s): D111 (janitor), D114 (storage)

3	EA	HINGE	3CB1 4.5x4 NRP	652	IVE
1	EA	STOREROOM LOCK	L9080P 06A	626	SCH
1	EA	ELECTRIC STRIKE	6210 FSE	630	VON
1	EA	SURFACE CLOSER	1461	689	LCN
1	EA	KICK PLATE (INT)	8400 10" x 1 1/2" LDW B-CS	630	IVE
1	EA	WALL STOP	WS406/407CVX	630	IVE
3	EA	SILENCER	SR64	GRY	IVE
1	EA	MULTITECH READER	MT11	BLK	SCE
1	EA	DOOR CONTACT	679-05HM	BLK	SCE
ACCESS CONTROL WORK OF DIVISION 28					

Latch bolt retracted by key outside or by knob/lever inside. Outside knob/lever always inoperative.

Auxiliary latch deadlocks latch bolt when door is locked. Inside lever is always free for immediate egress. Electric strike is released when power is applied (Fail Secure). Self-Closing. Door unlocked by valid credential at reader. Door position switch monitors whether door is open/closed.

HARDWARE SET 9

For use on door(s): D113 (tech room)

6	EA	HINGE	3CB1 4.5x4 NRP	652	IVE
2	EA	MANUAL FLUSH BOLT FB458		626	IVE
1	EA	CLOSET LOCK w/DB	L9465P 06A	626	SCH
2	EA	OH STOP	410S	630	GLY
2	EA	SILENCER	SR64	GRY	IVE

Latch bolt retracted by knob/lever from either side. Deadbolt thrown or retracted by key outside.

HARDWARE SET 10

For use on door(s): D116 (staff room)

3	EA	HINGE	3CB1 4.5x4	652	IVE
1	EA	STOREROOM LOCK	L9080P 06A	626	SCH
1	EA	ELECTRIC STRIKE	6210 FSE	630	VON
1	EA	AUTO OPERATOR	9131 WMS	628	LCN
2	EA	36" NARROW INGRESS'R SWITCH, LOGO 3		628	WIKK
1	EA	WALL STOP	WS406/407CVX	630	IVE
3	EA	SILENCER	SR64	GRY	IVE
1	EA	MULTITECH READER	MT11	BLK	SCE
1	EA	DOOR CONTACT	679-05HM	BLK	SCE
ACCESS CONTROL WORK OF DIVISION 28					

Latch bolt retracted by key outside or by knob/lever inside. Outside knob/lever always inoperative. Auxiliary latch deadlocks latch bolt when door is locked. Inside lever is always free for immediate egress. Electric strike is released when power is applied (Fail Secure). Automatically Opens & Closes Door. Door unlocked by valid credential at reader. Door position switch monitors whether door is open/closed.

HARDWARE SET 11

For use on door(s): D117a (mech ext)

3	EA	HINGE	3CB1 4.5x4 NRP	630	IVE
1	EA	STOREROOM LOCK	L9080P 06A	626	SCH
1	EA	OH STOP	90S	630	GLY
1	EA	KICK PLATE (INT)	8400 10" x 1 1/2" LDW B-CS	630	IVE
1	SET	WEATHERSTRIP	W-20N 1-36" 2-84"	628	KNC
1	EA	DOOR SWEEP	W-13S 36"	628	KNC
1	EA	THRESHOLD	CT-407	627	KNC
1	EA	DOOR CONTACT	679-05HM	BLK	SCE

Latch bolt retracted by key outside or by knob/lever inside. Outside knob/lever always inoperative. Auxiliary latch deadlocks latch bolt when door is locked. Inside lever is always free for immediate egress. Door position switch monitors whether door is open/closed.

HARDWARE SET 12

For use on door(s): D117b (crawl space)

2	EA	SPRING HINGE	3SP1 4.5x4	652	IVE
1	EA	STOREROOM LOCK	D80PD ORB	626	SCH

1	SET	WEATHERSTRIP	W-21 4-sides		
	BLK	KNC			

Outside knob fixed. Entrance by key only. Inside knob always unlocked.

HARDWARE SET 13

For use on door(s): D118 (ext gate)

3	EA	HINGE	Z9500-RH	630	ZER
1	EA	SGL CYL DEADLATCH	B250PD	626	SCH

Deadlocking latch bolt retracted by key from outside or by inside turn unit. Rotating turn unit and activating hold-back feature keeps latch retracted.

MISC ITEMS

2	KEY SWITCH	653-04 NS L2 CYL (mpr/tutorial mag lock release)	630	SCE
1	PUSH BUTTON	701BK AA L2 (all mag lock emergency release)	630	SCE
1	POWER SUPPLY	PS914 900-8F-FA (all doors w/indicated power req's except D112)	LGR	FAL
1	POWER SUPPLY	PS902 (for D112)	LGR	SCE

Locate Emergency Release as directed for authorized personnel.
Signal from Smoke / Fire Alarm releases magnetic locks.

END OF SECTION.