

DOOR HARDWARE

GENERAL INFORMATION

- 1.1 CU Morningside, Manhattanville, Nevis and Lamont Dougherty Campus' have specific hardware requirements. Standardized door hardware, systems, and components are described herein. Any deviation from these standards must be approved in writing by Columbia University's Facilities Management (CUF) prior to specifying. It is the intent of this section to provide guidelines to be coordinated with all applicable building codes, life safety codes, and ADA requirements.
- 1.2 The campus / facility keying system is maintained by CUF. New construction locksets are to be equipped with a removable construction core.

DESIGN REQUIREMENTS

- 2.1 Requests for substitutions may be granted at the discretion of a VP, CPM only. Formal submissions are to include:
 - the reason for the substitution,
 - comparative cost evaluation with CU standard products
 - sufficient detail to enable a quality evaluation
 - Finish selection shall be approved by Project Manager.
- 2.2 Warranties - Hardware manufacturers shall provide full replacement warranty as listed below. Replacement warranty shall not include any labor cost.
 - a. Locksets - 3 years
 - b. Balance of hardware 1 year

Hinges

Item Description	Manufacturer	Catalog Series	Notes
Butt Hinges	Ives	5BB1 5BB1HW 5BB1TW4/6/8	No Substitution

Notes:

- NRP (non-removable pin) hinges on out-swinging doors with keyed locks.
- NRP and Security Stud hinges on exterior doors with butt hinges.
- 4 ½" x 4 ½" for doors up to 3'0" wide, 5" x 4 ½" for doors over 3'0" wide.
- Provide HW (heavy weight) hinges at high traffic doors.
- Electric transfer hinges for interior doors only.

Butt Hinges: Ives

5BB1 / 5BB1HW for high traffic doors



Meets ANSI/BHMA A156.1
A8112 – Steel
A5112 – Stainless Steel
A2112 – Brass

5BB1 5 Knuckle, Ball Bearing Full Mortise Hinge

- For standard weight doors
- Medium frequency usage
- 2 ball bearing
- Packed with wood and metal screws

Options

- NRP, Non-Removable Pin ← For outswinging doors
- SH, Security Stud ← For exterior doors
- HT, Hospital Tip
- RC, Round Corners - 1/4" or 5/8" Radius
- SEC, Security Fasteners - Pin-in-Socket

Dimensions

Size (Inches)	Size (mm)	Gauge	Size (Inches)	Size (mm)	Gauge	
3.5 x 3.5	80 x 102	0.130	5 x 4.5	127 x 114	0.146	For doors over 3' wide
4 x 4	102 x 102	0.130	5 x 5	127 x 127	0.146	
4.5 x 4	114 x 102	0.134				
4.5 x 4.5	114 x 114	0.134				For doors up to 3' wide

Item Description	Manufacturer	Catalog Series	Notes
Continuous Hinges	Ives	224HD	No Substitution

Notes:

- For retrofitting new doors into existing frames.
- For doors in high traffic public spaces (e.g. corridor doors, delivery doors, etc.)
- Use 224HD-EPT prep where Von Duprin EPT-10 electric power transfer is used
- 90 minute fire rating

Continuous Hinges: Ives

224HD for delivery doors and high traffic public spaces



224HD Full Mortise Aluminum Geared Continuous Hinge

- Non Handed
- Door Edge Protector
- 48" Maximum Door Width
- 1/16" Door Inset
- Beveled or Square Edge Doors

For Doors Weighing up to 450 pounds without reinforcing,
600 pounds with reinforcing

Standard lengths 83", 85", 95", 120"

Standard Mounting Hardware

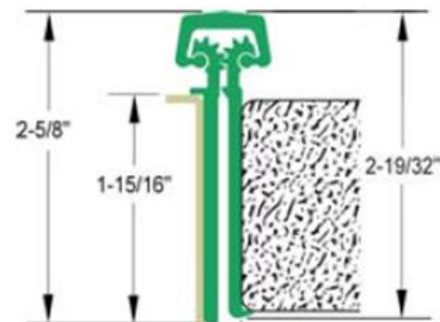
12-24 X 3/4" Steel Self Drilling, Self Tapping Screws

Optional WD - Wood Screws or SEC - Security Fasteners Available

Finishes

Clear (CL), Dark Bronze (DB)

Custom Anodizing and Painting are available, consult factory.



5/16" Clearance for square Edge Door
1/32" Clearance For Beveled Edge Door

Power Transfer

Item Description	Manufacturer	Catalog Series	Notes
Electric Power Transfers	Von Duprin	EPT-10	Not for retrofit use in wood doors. No Substitution.

Notes:

- Provide at all new construction electrified hardware openings – frames must be appropriately prepped when manufactured. Coordinate with manufacturer for template requirements.

Electric Power Transfer: Von Duprin

EPT 10

for power transfer in new doors (do not use in historic wood doors)



Harness options.

Harness Length	Connector	Pinned
3"	WH-3	WH-3P
6"	WH-6	WH-6P
12"	WH-12	WH-12P
26"	WH-26	WH-26P
32"	WH-32	WH-32P
38"	WH-38	WH-38P
44"	WH-44	WH-44P
50"	WH-50	WH-50P
192"	WH-192	WH-192P

WH-6E Wire extension used as final connection point from wire run to power source. Equipped with Quick Connects at one end and stripped leads on the other.

- Wire harness shipped with Quick Connect at one end and exposed pin heads at the other. Recommended for applications requiring field installation of existing doors
- Wire harness shipped with Quick Connect at one end and stripped leads on the other. The "E" option makes final termination from the wire harness to the power source.

Refer to the Quick Connect User Guide for more information.

Locksets and Latchsets

Item Description	Manufacturer	Catalog Series	Notes
Cylinders and Keying	Mul-T-Lock	225 ICC SH	BY OWNER , No Substitution
Cylinder Housing and Construction	Schlage	20-057 ICX Rim Cylinder	No Substitution

Notes:

- Facility keying system is maintained on-site. All cylinder and keying requirements must be coordinated through the Lock Shop and Manufacturers Representative.
- Locksets shown here are a representative sample depicting style and finish. Select proper lock function to suit the use.
- New locksets are to be equipped with a Schlage Interchangeable construction core.

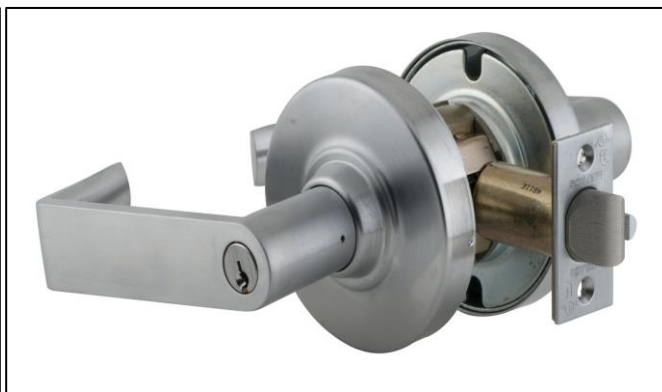
Item Description	Manufacturer	Catalog Series	Notes
Locks and Latches	Schlage	Mortise: L-Series (doors on public corridors) Cylindrical: ND-Series (moderate security required))	No Substitution

Notes:

- New construction locksets to be equipped with a removable construction core. (Schlage 20-057 ICX)
- Instructional classrooms require L9070 or L9071 Classroom Security function locksets. (*Note: c l a s s r o o m security function locksets require two lock cylinders*)
- Lever style will be "06" for mortise locksets and "RHODES" for cylindrical locksets.



L90



060A

Item Description	Manufacturer	Catalog Series	Notes
Stand-alone electronic Access Control Locks	Schlage Electronics	AD-200	No Substitution

Notes:

- **Stand-alone electronic access control locks are not supported by CUF.**
- Use keypad + proximity reader head unless otherwise specified by Facilities Department.
- Lever style will be "RHODES"; JD full size removable core less core.
- Product requires Schlage SMS Express Software (or higher version) .



Item Description	Manufacturer	Catalog Series	Notes
Stand-alone Electronic Access Control Software	Schlage Electronics	SMS-Express	No Substitution

Notes:

- AD and CO Series offline electronic locks require Schlage Security Management Software (SMS Express) for programming and administration.
- SMS Express software allows only one administrator to be signed on to the system at any given time. User Names and Passwords will be determined and assigned by Facilities Management.
- SMS Express software shall be installed on a local host computer only

Exit Devices

Item Description	Manufacturer	Catalog Series	Notes
Exit Devices	Precision	2200 Series	No Substitution

Notes:

- Provide rim devices on single door application.
- Provide rim devices and keyed removable mullions on paired doors applications.
- Use surface mounted vertical rod devices, less bottom rod, on cross-corridor pairs of doors.
- Provide cylinder dogging on non-fire rated doors that require exit devices.

2200 APEX SURFACE VERTICAL ROD SERIES

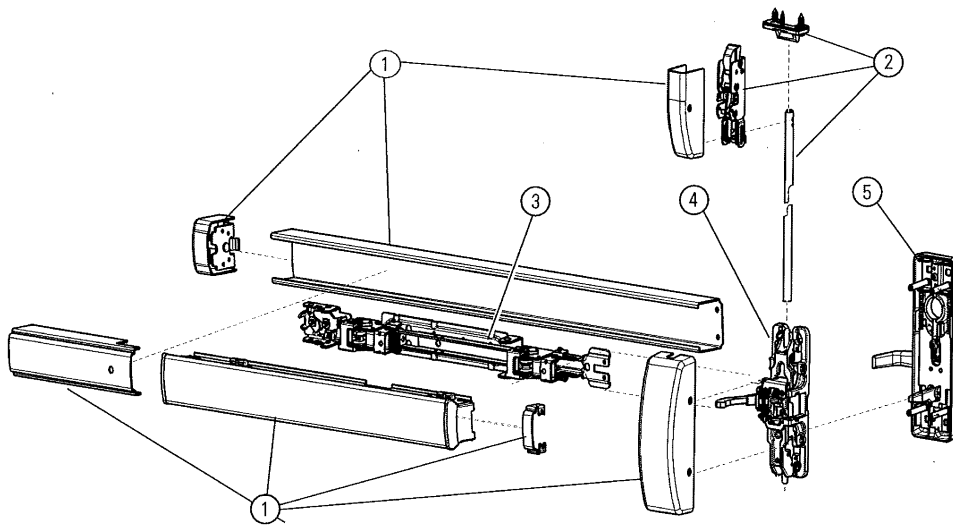


Figure 2.2 2200 Apex Surface Vertical Rod (SVR) Exit Device

Removable Mullions

Item Description	Manufacturer	Catalog Series	Notes
Removable Mullions	Von Duprin	KR4954/9954	No Substitution

Notes:

- Lockable, steel, key removable. Key is not required to reinstall mullion.
- Provide mullion stabilizers at each opening.
- Provide Von Duprin MT-54 storage kit for each mullion to secure device when removed from the opening.
- Provide manufacturer's quick-connection fittings when electric or monitor strikes are used for mullion removal without damaging electrical connections.



Keyed Removable Steel Mullions makes removal faster and easier by a single operation of the mortise cylinder. Once mullion is removed, large equipment or furniture can freely pass through the opening. The unit will self lock when reinstalled, without use of the cylinder key. Uses a 1 1/4" mortise cylinder with a straight cam.



Standard mortise cylinder for use with exit hardware such as Adams Rite style deadlatch hardware and exit device trim that requires a standard mortise cylinder.

Magnetic Locks

Item Description	Manufacturer	Catalog Series	Notes
Magnetic Locks	Schlage Electronics	450 Series	No Substitution

Notes:

- By special permission only. Obtain approval from Lock Shop, Public Safety, and the Fire Safety Director prior to specifying.
- Lifetime Warranty
- Auto Voltage Selection
- For all exterior doors when emergency backup power is available and for interior secured doors. Connect to Class E Fire Alarm System.

Magnetic Locks: Schlage

450 Series



6000 SERIES ELECTRIC STRIKE FINISHES

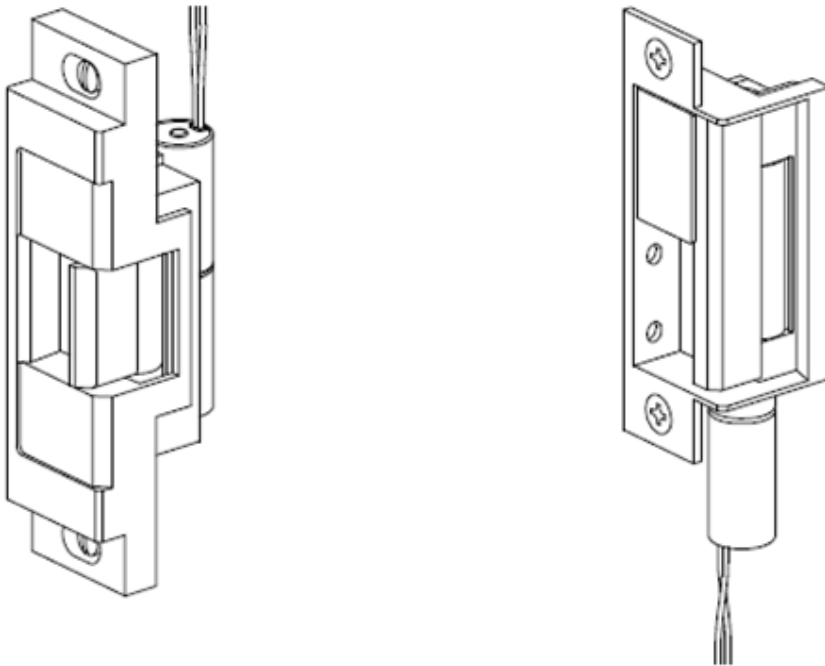
US Number	BHMA Number	Color
US3	605	Brass, polished
US4	606	Brass, dull
US10	612	Bronze, dull
US10B	640	Brass, dull (oxidized)
US32	629	Chrome, polished
US32D	630	Chrome, dull

Electric Strikes

Item Description	Manufacturer	Catalog Series	Notes
Electric Strikes	Von Duprin	6000 Series	Select product series appropriate for the application.

Electric Strike: Von Duprin

6000 Series



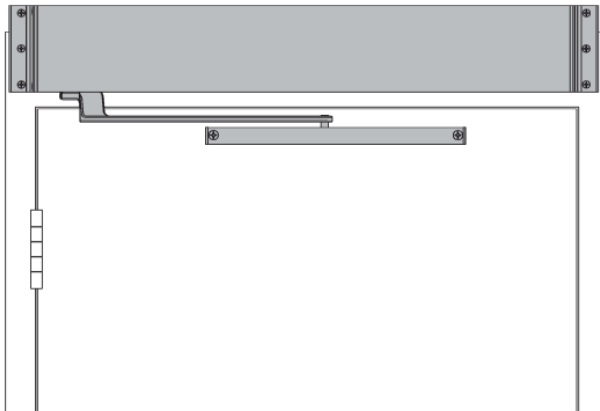
Door Closers

Item Description	Manufacturer	Catalog Series	Notes
Door Closers	LCN	9530 (Pull side) 9540 (Push side)	No Substitution

Notes:

- **For power actuated doors**
- Provide non-sized closers, to meet maximum opening force requirements of ADA.
- Provide rocker switch for On/Off/Hold-open operation.
- Connect to emergency power for all egress doors.
- Mount closers on non-corridor side of openings for interior doors.
- Mount closers on inside of exterior doors.
- Use handing specific closers for all new construction applications

SINGLE DOOR, SURFACE MOUNT (PULL) OFFSET PIVOT/BUTT HINGE



The 9530 SENIOR SWING by LCN is an ADA door operator that is a two-in-one swing door operator. SENIOR SWING operators when activated, opens doors automatically for wheelchair access, yet allows for manual operation for regular pedestrian traffic.

- ▶ **Push 'N Go permits non-switch activation**
- ▶ **Power Boost provides additional latching force**
- ▶ **Electromechanical unit with microprocessor control**
- ▶ **Digital keypad for easy setup**
- ▶ **Meets International Building Code requirements and ANSI A156.19**
- ▶ **UL approved for fire doors**

Item Description	Manufacturer	Catalog Series	Notes
Door Closers	LCN	4011 (Pull side) 4111 (Push side) 4510 (Pull side) 4210 (Push side)	No Substitution
Concealed Door Closer	LCN	3130 (Concealed)	By VP approval only

Notes:

- **For non-power actuated doors**
- Provide cast iron body, forged arms and parallel arms, and non-ferrous covers.
- Provide non-sized closers to meet maximum opening force requirements of ADA.
- Provide drop plates, brackets or adapters for closer arms as required.
- Mount closers on non-corridor side of openings for interior doors.
- Mount closers on inside of exterior doors.
- Use Spring Cush (SCUSH) arm where stop arm is specified.



LCN 4011/4111/4510/4210



LCN 3130

Item Description	Manufacturer	Catalog Series	Notes
Door Closers	LCN	4040XP	No Substitution

Notes:

- **For replacement closers**
- Non-handed
- Non-specific



LCN 4040XP

Accessories

Item Description	Manufacturer	Catalog Series	Notes
Flush Bolts	Ives	FB458 261 262	No Substitution

Notes:

- Manual flush bolts as necessary for code compliance.

Item Description	Manufacturer	Catalog Series	Notes
Coordinators	Ives	COR Series	No Substitution

Notes:

- Provide filler bars, closer mounting brackets, carry bars, special templating and preparation where applicable.

Item Description	Manufacturer	Catalog Series	Notes
Protection Plates	Ives	8400 Series	No Substitution

Notes:

- Material: Stainless steel .050" thick with countersunk holes, beveled four edges.
- Size: 8" Kick plates, 6" Mop plates, 36" Armor plates.
- Width: 2" less door width at single doors when mounted on push side.
 - 1" less door width at pairs and when mounted on pull side of single doors.

Item Description	Manufacturer	Catalog Series	Notes
Overhead Stops / Holders	Glynn Johnson	900 Series 100 Series	No Substitution

Notes:

- Use special template with closers to allow offset arms for surface applied stops.
- Install overhead stops where conditions limit the use of wall stops and where floor stops would create a tripping hazard.

Item Description	Manufacturer	Catalog Series	Notes
Thresholds and Gasketing	NGP		Pemko Reese

Notes:

- Provide aluminum extrusion, 1" wider than door frame depth.
- Provide saddle-type wherever possible.
- Provide gasketing as required for smoke and fire-rated doors.

Item Description	Manufacturer	Catalog Series	Notes
Push/Pulls	Ives	8200 Series Push Plates 8302 Series Pulls 9103EZ Series Push/Pull Combo Bars	No Substitution

Notes:

- Provide 4" x 16" minimum plate size, except when limited by door stile width.
- Use concealed type mounting method wherever possible

Item Description	Manufacturer	Catalog Series	Notes
ADA Actuator	MS Sedco	59H 59J	Or equal

Notes:

- 4" x 4" preferred size, 1 ½" x 4" allowed when 4" style is impractical.
- Blue faceplate for high contrast required.
- Use concealed type mounting method wherever possible



Item Description	Manufacturer	Catalog Series	Notes
Wall / Floor Stops	Ives	WS400 FS430 WS40	No Substitution

FS436 Dome Stop

Features:

- For doors without threshold.
- Heavy-Duty Cast Dome Stops constructed of brass, bronze or aluminum.
- Gray, non-marring rubber bumper.
- Packed with wood screw and plastic anchor, specify Tampin (TPN) or lead expansion shield (LS), if required.
- Meets ANSI/BHMA 156.6, L12141 for brass or bronze and L32141 for aluminum.
- Finishes: US3, US4, US5, US10, US10B, US14, US15, US15A, US26, US26D and US28.

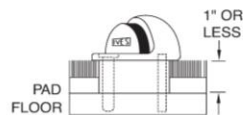


Product No.	Overall Height	Base Height	Base Diameter
FS436	1"	3/16"	1-3/4" x 2" Oval

R435 Riser

Features:

- Extruded aluminum, mill finish.
- For conversion of FS436 Dome Stop to carpet installation.
- Packed with wood screws, lead shield and stud. Specify Tampin (TPN) if required.
- Available in 1/4", 3/8", 1/2", 5/8", 3/4" and 1" height.



Product No.	Size
R435	1" x 1-3/8" Oval

FS438 Dome Stop

Features:

- For doors with threshold or undercut doors.
- Heavy-Duty Cast Dome Stops constructed of brass, bronze or aluminum.
- Gray, non-marring rubber bumper.
- Packed with wood screw and plastic anchor, specify Tampin (TPN) or lead expansion shield (LS), if required.
- Meets ANSI/BHMA 156.6, L12141 for brass or bronze and L32141 for aluminum.
- Finishes: US3, US4, US5, US10, US10B, US14, US15, US15A, US26, US26D, US28.



Product No.	Overall Height	Base Height	Base Diameter
FS438	1-3/8"	9/16"	1-3/4" x 2" Oval

**WS401 CVX & WS402 CVX
WS401 CCV & WS402 CCV**

Features:

- Constructed in heavy-duty cast brass or aluminum base.
- Special retainer cup makes rubber tamper resistant.
- The WS401CVX unit is designed with a convex rubber bumper, packed with wood screw and plastic anchor.
- The WS401CCV unit is designed with a concave rubber bumper which avoids damage to locks with projecting buttons, packed with wood screw and plastic anchor.
- The WS402CVX unit is designed with a convex rubber bumper packed with screw and drywall anchor.
- The WS402CCV unit is designed with a concave rubber bumper which avoids damage to locks with projecting buttons and is packed with screw and drywall anchor.
- WS401CVX & WS402CVX meets ANSI/BHMA 156.16 L12101 for brass and L32101 for aluminum.
- WS401CCV & WS402CCV meets ANSI/BHMA 156.16 L12251 for brass and L32251 for aluminum.
- Finishes: US3, US4, US5, US10, US10B, US14, US15, US15A, US26, US26D, US28.

Product No.	Mounting Hardware	Base Diameter	Base Thickness	Overall Projection
WS401CVX	Wood screw, plastic anchor	2-1/2"	3/8"	1"
WS401CCV	Wood screw, plastic anchor	2-1/2"	3/8"	1"
WS402CVX	Screw, Drywall Anchor	2-1/2"	3/8"	1"
WS402CCV	Screw, Drywall Anchor	2-1/2"	3/8"	1"



WS401CVX & WS402CVX

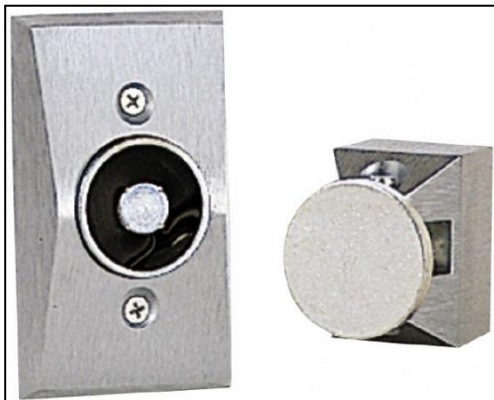


WS401CCV & WS402CCV

Item Description	Manufacturer	Catalog Series	Notes
Magnetic Door Holder	LCN	SEM7840	No Substitution

Notes:

- If used on fire doors, must be connected to Class E system.



CONSTRUCTION REQUIREMENTS

3.1 Submittals:

- a. Product Data: Submit two (2) copies of the manufacturer's data for each item of hardware. Include all information necessary to show compliance with requirements.
- b. Hardware Schedule: Submit three (3) copies of the hardware schedule [architect, project manager, Lock Shop]. Follow Door and Hardware Institute (DHI) guidelines for schedule format. At the end of the schedule list each door number with appropriate heading number and hardware set number. Allow 5 work days for Lock Shop review. Furnish final schedule after samples, manufacturer's data sheets have been approved.
- c. Keying Schedule: Provide a key schedule to the CU Lock Shop showing all key numbers and the spaces to which each permits entry. Lock Shop will review within 5 working days. After final approval has been received, the schedule along with the key gathering envelopes containing keys for each lock endorsed with lock number and space designation shall be turned over to the CU Lock Shop.
- d. Samples: Prior to submittal of the final hardware schedule, submit one (1) sample of each exposed hardware unit for Architect and CU Lock Shop review.

3.2 Supplier:

- a. Finish hardware shall be furnished by those having a minimum of 5 years of builders hardware experience and shall have in their employ at least one certified Architectural Hardware Consultant (AHC) to correctly interpret the plans, detailed drawings and specifications.

MAINTENANCE GUIDELINES

4.1 General Notes

- a. All door frame modifications, such as cutting frames for electrified strikes, recessed door contacts, and butt transfer hinges must comply with NFPA 80 Standards.
- b. All other electrified hardware devices shall be maintained by CUF, such as door closers, hinges, etc.

4.2 Electrified mortise locksets

- a. Installation: CUF Operations, CPM and DPS.
- b. Maintenance: Department of Public Safety (DPS) services and replaces existing locksets and Card Access System application maintenance. Any replacements will be "in kind" and covered under a DPS maintenance program.
- c. *Note: All electrified Mortise locks shall be installed as provided by the manufacturer with no modifications.*

4.3 Non-electrified exit devices

- a. Installation: CUF Operations or CPM
- b. Maintenance: CUF services and replaces “in kind” if needed.

4.4 Electrified exit devices

- a. Installation: CUF Operations or CPM
- b. Maintenance: CUF services and replaces mechanical components and electrical components of the exit device. Electronic components of the access control system including power supply repair and replacement is covered under a DPS maintenance program.

4.5 Electric strikes

- a. Installation: CUF Operations or CPM; DPS. All new installations are to be reviewed by Design and Compliance for egress code compliance.
- b. Maintenance: DPS services and replaces existing electric strikes. Any replacements will be “in kind” and covered under a DPS maintenance program.

4.6 Magnetic locks

- a. Installation: CUF Operations or CPM. Magnetic locks may only be used on exterior doors when generator power is available for emergency backup.
- b. Maintenance: Magnetic locks are not covered under any service agreement. Repair and/or replacement is by CUF.