Harris County Fire Code

Electronic Lock Procedures

Based on the current adopted edition of the
International Building & Fire Code with Harris County Amendments

For New Electronic Locking Systems

March 31, 2009

For more information about these procedures please contact:
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713-316-3580
Harris County Fire Code
Electric Locks Process Overview

TERMINOLOGY

The following terminology is provided for clarification:

**Electromagnetic Lock (also known as a “mag lock”)**
Has an electromagnet body and an armature plate, which are held together by an electromagnetic force. A magnetic lock is fail-safe and unlocks automatically when power is switched off or fails. Requires access controlled egress system. Access controlled egress has a motion detector and a redundant manual switch to allow egress.

**Strike plate**
A metal plate of box that is pierced or recessed to receive the bolt or latch of the lock.

**ADA Compliant**
This includes handles or other shapes that can be operated without grasping, twisting, etc. Acceptable: lever handles, panic or fire exit hardware, push/pull latches. See code chapter 10 IBC current adopted edition

**Electric Strike**
An electrical device that replaces a regular lock strike and allows opening of the door from a remote location or by special access equipment.

**Electrified Exit Hardware**
Door hardware that when locked, the power circuit is closed. Unlocks when power circuit is opened or power fails (fail-safe). When unlocked, retracts latch bolt. Push bar or pad inside retracts latch bolt for egress.

**Electrified Lock Set (mortise, cylindrical, etc.)**
Door hardware locked when power circuit is closed. Unlocks when power circuit is opened or power fails (Fail-Safe). When unlocked, retracts latch bolt. Latch inside retracts latch bolt for egress.

**Electrified Deadbolt**
It is an electromechanical deadbolt, latch bolt, pin or other similar device, which retracts or extends electromechanically to keep a door in a closed position.

**Jamb Mounted Egress Controller (Hi Tower, Gemini, etc.)**
Fail-safe deadbolt in jamb activates stop works in lock. When power is switched off or fails, bolt retracts and stop works moves to unlocked position.

**Fail Safe**
Shall mean that the loss of power to the part of the system that locks the door(s) shall automatically unlock the door(s).

**Fail Secure**
Shall mean that the loss of power to the locking system will allow the door(s) to remain locked.
Plan Submittal and Permit Requirements

Approved plan(s) are required for the installation and acceptance of all electronic locking systems. Contents of the submittal will include:

Preferred submission is a digital copy of the plans on CD (DWF or PDF) or for paper submission (which is less preferred): Three (3) copies of the plans plus the following information below must be submitted to the Harris County Permits Division section Fire Code. The department is located at 10555 Northwest Freeway Suite 170 Houston TX, 77092.

1. **Floor Plan** - Show all doors and devices to be installed with sufficient detail to include:
   a. **Height** – The height of each device as well as the side of the door on which the device will be installed.
   b. **Exiting pattern of the floor** – On which the door is located, including all surrounding areas, the exit stairs, etc.
   c. **Complete list of symbols** – Provide a complete list of symbols, including accurate devices names, door numbers, sizes, and fire ratings of doors on which devices are to be installed.
   d. **Contact Information** - Building address, floor numbers, contractor name, submitter name, address, and phone number.
   e. **Materials List** - All parts, components, or wiring. Include cut sheets verifying the listing of each item.
   f. **Wiring Diagram** - Including risers and details of fire alarm system modules.
   g. **Power Supplies** - Any power supplies associated with the installation; showing the fail-safe feature.
   h. **Signage** - For the stair door unlocking system.
   i. **Unlock simultaneously** - All egress doors shall unlock simultaneously upon activation of any one of the following: 1) a smoke detector or a sprinkler waterflow, 2) the manual switch at the building entrance lobby area, or 3) upon power failure.
   j. "Cloud" in all new or relocated electric locks & symbols to scale.
   k. Provide a narrative description of electronic locking releasing sequences. Include “Fail Safe” or “Fail Secure” notations as required by code. All “Fail Secure” egress door(s) shall be reviewed on case by case basis and approved by the Building Code Official.
   l. Provide a one-line diagram of the electrical circuitry for the locks showing the direction of in-line switches for all releasing devices.
   m. All Fail Safe magnetic locks, re-entry stairs, elevator lobbies, and electronic locking devices shall be subordinate to any fire alarm system.

2. **Locks**
   a. The Electrified Locksets, Electrified Exit Hardware or Jamb Mounted Egress Controller types of locks are most suitable for access control systems.
   b. The Electromagnetic lock or mag lock is NOT permitted on the stairwell doors because it does not allow the stair door to remain unlocked from the egress side. There may be exceptions in some situations where pre-approval by the Building Code Official may be obtained before submission of the plans for review.
   c. A fail-safe Electric Strike is NOT permitted on the stair door for use in a stairwell unlocking system, because a fail-safe strike would not allow the door to be self-latching.
   d. Electrified deadbolts and similar devices are NOT permitted since they can restrict egress if they fail mechanically.

3. **Door, Frames and Hardware Labeling Maintained**
   a. When installing fail-safe electronic locking mechanisms on rated egress enclosures that have been rated in accordance with a recognized product testing and certification agency, all work shall be done in a manner so as to not alter or void the existing fire rating of the door opening.
   b. When installing fail-safe electronic locking mechanisms on rated egress enclosures of pre-fire code, non-labeled “archaic” doors and frames, all work shall be done in a manner as to substantially maintain the effective fire-resistance capability of the existing door assembly.
   c. If the existing door assembly cannot be retrofitted in a manner as described in (a) or (b), it is the responsibility of the building owner to install a new door assembly in accordance with the Chapter 7 of the International Building Code or to re-label the affected door, frame or hardware in accordance with a recognized product testing and certification agency.
4. **Testing**
   
a. Pre-inspection by the contractor shall be documented and completed prior to an initial inspection by the Harris County Fire Marshal’s office. Once the pre-inspection has been conducted by the contractor, the contractor will affix assigned approved stickers in the jam of each permitted electronically locked door. Documentation shall be provided to the Fire Marshal onsite.
   
b. An initial acceptance test of the system will be conducted in conjunction with the building and fire protection systems.
   
c. Please visit our inspection website: [www.eng.hctx.net/permits/firecode.htm](http://www.eng.hctx.net/permits/firecode.htm)

5. **Stairwell Electrical and Installation Requirements**
   
a. Smoke detectors shall be installed outside the stairwell, 2 to 5 feet from the stair door. (The detector distance from the stair door is not applicable when the entire corridor is protected by smoke detectors.)
   
b. Installation of smoke detectors inside the stairwell and above each floor landing is required when the stairs construction is of combustible material.
   
c. A two-way communication system is required inside specific stairwells. There will be one on the lowest level and then one on each floor, which is a multiple of five, such as: floors 5, 10, 15, 20, and up.
   
d. The wiring for the two-way communication system and the smoke detectors can be in the same conduit. When permitted by the fire alarm system manufacturer, low voltage door lock wiring can also be shared in the same conduit. (But must not exceed the maximum density of wires allowed in the conduit.)
   
e. Sprinkler waterflow may be used to unlock the stair doors in lieu of smoke detectors when the building is **fully protected** by an automatic sprinkler system and all waterflow switches are connected to the fire alarm panel.
   
f. Battery shall be sized for 60 hours standby and 15 minutes alarm.
   
g. Wiring shall conform to Article 760 of the Electrical code and shall be in approved raceway.
   
h. The Addressable Control Panel shall be listed UL 864. Class A or Style 7.0 addressable loop, as defined in NFPA 72 current reference edition, can utilize a second building stairwell with or without the 2-hour fire protection for the horizontal portion of the loop.
   
i. All equipment shall be designed and installed to meet all voltage and operational specifications per the manufacturers’ recommendations.
   
j. All equipment shall be listed by a nationally recognized testing laboratory.
   
k. All penetrations into the stairwell enclosure shall be fire-stopped with UL Listed 2-hour fire stopping.

6. **System becomes inoperable**
   
   a. If, at any time after a fail-safe electronic release system is installed, the system becomes unable to operate for any reason, the building owner or property manager shall immediately unlock all egress doors, contact the Harris County Fire Marshal’s Office (within 4 hours) and notify the Harris County Fire Marshal’s Office once the system is restored to full operational capacity.
   
   b. If, at any time after a fail-secure electronic locking system is installed, the system becomes unable to operate for any reason, the building owner or property manager shall immediately (within 1 hour) contact the Harris County Fire Marshal’s Office and notify the Harris County Fire Marshal’s Office once the system is restored to full operational capacity.
SECTION 403

HIGH-RISE BUILDINGS

403.1 Applicability.

The provisions of this section shall apply to buildings with an occupied floor located more than 75 feet (22 860 mm) above the lowest level of fire department vehicle access.

Exception: The provisions of this section shall not apply to the following buildings and structures:

1. Airport traffic control towers in accordance with Section 412.
2. Open parking garages in accordance with Section 406.3.
4. Low-hazard special industrial occupancies in accordance with Section 503.1.1.
5. Buildings with an occupancy in Group H-1, H-2 or H-3 in accordance with Section 415.

403.12 Stairway door operation.

Stairway doors other than the exit discharge doors shall be permitted to be locked from stairway side. Stairway doors that are locked from the stairway side shall be capable of being unlocked simultaneously without unlatching upon a signal from the fire command center.

403.12.1 Stairway communications system.

A telephone or other two-way communications system connected to an approved constantly attended station shall be provided at not less than every fifth floor in each required stairway where the doors to the stairway are locked.

SECTION 407

GROUP I-2

407.2 Corridors.

Corridors in occupancies in Group I-2 shall be continuous to the exits and separated from other areas in accordance with Section 407.3 except spaces conforming to Sections 407.2.1 through 407.2.4.

407.3.1 Corridor doors.

Corridor doors, other than those in a wall required to be rated by Section 508.2 or for the enclosure of a vertical opening or an exit, shall not have a required fire protection rating and shall not be required to be equipped with self-closing or automatic-closing devices, but shall provide an effective barrier to limit the transfer of smoke and shall be equipped with positive latching. Roller latches are not permitted. Other doors shall conform to Section 715.4.
407.3.2 Locking devices.

Locking devices that restrict access to the patient room from the corridor, and that are operable only by staff from the corridor side, shall not restrict the means of egress from the patient room except for patient rooms in mental health facilities.

SECTION 408

GROUP I-3

408.1 General.

Occupancies in Group I-3 shall comply with the provisions of this section and other applicable provisions of this code (see Section 308.4).

408.4 Locks.

Egress doors are permitted to be locked in accordance with the applicable use condition. Doors from an area of refuge to the exterior are permitted to be locked with a key in lieu of locking methods described in Section 408.4.1. The keys to unlock the exterior doors shall be available at all times and the locks shall be operable from both sides of the door.

408.4.1 Remote release.

Remote release of locks on doors in a means of egress shall be provided with reliable means of operation, remote from the resident living areas, to release locks on all required doors. In Occupancy Conditions 3 or 4, the arrangement, accessibility and security of the release mechanism(s) required for egress shall be such that with the minimum available staff at any time, the lock mechanisms are capable of being released within 2 minutes.

Exception: Provisions for remote locking and unlocking of occupied rooms in Occupancy Condition 4 are not required provided that not more than 10 locks are necessary to be unlocked in order to move occupants from one smoke compartment to a refuge area within 3 minutes. The opening of necessary locks shall be accomplished with not more than two separate keys.

408.4.2 Power-operated doors and locks.

Power-operated sliding doors or power-operated locks for swinging doors shall be operable by a manual release mechanism at the door, and either emergency power or a remote mechanical operating release shall be provided.

Exception: Emergency power is not required in facilities with 10 locks or less complying with the exception to Section 408.4.1.

408.4.3 Redundant operation.

Remote release, mechanically operated sliding doors or remote release, mechanically operated locks shall be provided with a mechanically operated release mechanism at each door, or shall be provided with a redundant remote release control.

408.4.4 Relock capability.

Doors remotely unlocked under emergency conditions shall not automatically relock when closed unless specific action is taken at the remote location to enable doors to relock.
SECTION 1003
GENERAL MEANS OF EGRESS

1003.7 Elevators, escalators and moving walks.

Elevators, escalators and moving walks shall not be used as a component of a required means of egress from any other part of the building.

Exception: Elevators used as an accessible means of egress in accordance with Section 1007.4.

SECTION 1011
EXIT SIGNS

1011.1 Where required.

Exits and exit access doors shall be marked by an approved exit sign readily visible from any direction of egress travel. Access to exits shall be marked by readily visible exit signs in cases where the exit or the path of egress travel is not immediately visible to the occupants. Exit sign placement shall be such that no point in a corridor is more than 100 feet (30 480 mm) or the listed viewing distance for the sign, whichever is less, from the nearest visible exit sign.

Exceptions:

1. Exit signs are not required in rooms or areas that require only one exit or exit access.
2. Main exterior exit doors or gates that are obviously and clearly identifiable as exits need not have exit signs where approved by the building official.
3. Exit signs are not required in occupancies in Group U and individual sleeping units or dwelling units in Group R-1, R-2 or R-3.
4. Exit signs are not required in sleeping areas in occupancies in Group I-3.
5. In occupancies in Groups A-4 and A-5, exit signs are not required on the seating side of vomitories or openings into seating areas where exit signs are provided in the concourse that are readily apparent from the vomitories. Egress lighting is provided to identify each vomitory or opening within the seating area in an emergency.

SECTION 1008
DOORS, GATES AND TURNSTILES

1008.1 Doors.

Means of egress doors shall meet the requirements of this section. Doors serving a means of egress system shall meet the requirements of this section and Section 1017.2. Doors provided for egress purposes in numbers greater than required by this code shall meet the requirements of this section.

Means of egress doors shall be readily distinguishable from the adjacent construction and finishes such that the doors are easily recognizable as doors. Mirrors or similar reflecting materials shall not be used on
means of egress doors. Means of egress doors shall not be concealed by curtains, drapes, decorations or similar materials.

1008.1.3.4 Access-controlled egress doors.

The entrance doors in a means of egress in buildings with an occupancy in Group A, B, E, M, R-1 or R-2 and entrance doors to tenant spaces in occupancies in Groups A, B, E, M, R-1 and R-2 are permitted to be equipped with an approved entrance and egress access control system which shall be installed in accordance with all of the following criteria:

1. A sensor shall be provided on the egress side arranged to detect an occupant approaching the doors. The doors shall be arranged to unlock by a signal from or loss of power to the sensor.

2. Loss of power to that part of the access control system which locks the doors shall automatically unlock the doors.

3. The doors shall be arranged to unlock from a manual unlocking device located 40 inches to 48 inches (1016 mm to 1219 mm) vertically above the floor and within 5 feet (1524 mm) of the secured doors. Ready access shall be provided to the manual unlocking device and the device shall be clearly identified by a sign that reads “PUSH TO EXIT.” When operated, the manual unlocking device shall result in direct interruption of power to the lock— independent of the access control system electronics—and the doors shall remain unlocked for a minimum of 30 seconds.

4. Activation of the building fire alarm system, if provided, shall automatically unlock the doors, and the doors shall remain unlocked until the fire alarm system has been reset.

5. Activation of the building automatic sprinkler or fire detection system, if provided, shall automatically unlock the doors. The doors shall remain unlocked until the fire alarm system has been reset.

6. Entrance doors in buildings with an occupancy in Group A, B, E or M shall not be secured from the egress side during periods that the building is open to the general public.

1008.1.8 Door operations.

Except as specifically permitted by this section egress doors shall be readily openable from the egress side without the use of a key or special knowledge or effort.

1008.1.8.3 Locks and latches.

Locks and latches shall be permitted to prevent operation of doors where any of the following exists:

1. Places of detention or restraint.

2. In buildings in occupancy Group A having an occupant load of 300 or less, Groups B, F, M and S, and in places of religious worship, the main exterior door or doors are permitted to be equipped with key-operated locking devices from the egress side provided:

   2.1. The locking device is readily distinguishable as locked,
2.2. A readily visible durable sign is posted on the egress side on or adjacent to the door stating: **THIS DOOR TO REMAIN UNLOCKED WHEN BUILDING IS OCCUPIED.** The sign shall be in letters 1 inch (25 mm) high on a contrasting background.

2.3. The use of the key-operated locking device is revocable by the building official for due cause.

3. Where egress doors are used in pairs, approved automatic flush bolts shall be permitted to be used, provided that the door leaf having the automatic flush bolts has no doorknob or surface-mounted hardware.

4. Doors from individual dwelling or sleeping units of Group R occupancies having an occupant load of 10 or less are permitted to be equipped with a night latch, dead bolt or security chain, provided such devices are openable from the inside without the use of a key or tool.

**1008.1.8.4 Bolt locks.**

Manually operated flush bolts or surface bolts are not permitted.

Exceptions:

1. On doors not required for egress in individual dwelling units or sleeping units.

2. Where a pair of doors serves a storage or equipment room, manually operated edge- or surface-mounted bolts are permitted on the inactive leaf.

**1008.1.8.5 Unlatching.**

The unlatching of any door or leaf shall not require more than one operation.

Exceptions:

1. Places of detention or restraint.

2. Where manually operated bolt locks are permitted by Section 1008.1.8.4.

3. Doors with automatic flush bolts as permitted by Section 1008.1.8.3, Exception 3.

4. Doors from individual dwelling units and sleeping units of Group R occupancies as permitted by Section 1008.1.8.3, Exception 4.

**1008.1.8.6 Delayed egress locks.**

Approved, listed, delayed egress locks shall be permitted to be installed on doors serving any occupancy except Group A, E and H occupancies in buildings that are equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or an approved automatic smoke or heat detection system installed in accordance with Section 907, provided that the doors unlock in accordance with Items 1 through 6 below. A building occupant shall not be required to pass through more than one door equipped with a delayed egress lock before entering an exit.

1. The doors unlock upon actuation of the automatic sprinkler system or automatic fire detection system.

2. The doors unlock upon loss of power controlling the lock or lock mechanism.

3. The door locks shall have the capability of being unlocked by a signal from the fire command center.
4. The initiation of an irreversible process which will release the latch in not more than 15 seconds when a force of not more than 15 pounds (67 N) is applied for 1 second to the release device. Initiation of the irreversible process shall activate an audible signal in the vicinity of the door. Once the door lock has been released by the application of force to the releasing device, relocking shall be by manual means only.

Exception: Where approved, a delay of not more than 30 seconds is permitted.

5. A sign shall be provided on the door located above and within 12 inches (305 mm) of the release device reading: **PUSH UNTIL ALARM SOUNDS. DOOR CAN BE OPENED IN 15 [30] SECONDS.**

6. Emergency lighting shall be provided at the door.

**1008.1.8.7 Stairway doors.**

Interior stairway means of egress doors shall be openable from both sides without the use of a key or special knowledge or effort.

Exceptions:

1. Stairway discharge doors shall be openable from the egress side and shall only be locked from the opposite side.

2. This section shall not apply to doors arranged in accordance with Section 403.12.

3. In stairways serving not more than four stories, doors are permitted to be locked from the side opposite the egress side, provided they are openable from the egress side and capable of being unlocked simultaneously without unlatching upon a signal from the fire command center, if present, or a signal by emergency personnel from a single location inside the main entrance to the building.

**1017.3 Dead ends.**

Where more than one exit or exit access doorway is required, the exit access shall be arranged such that there are no dead ends in corridors more than 20 feet (6096 mm) in length.

Exceptions:

1. In occupancies in Group I-3 of Occupancy Condition 2, 3 or 4 (see Section 308.4), the dead end in a corridor shall not exceed 50 feet (15 240 mm).

2. In occupancies in Groups B and F where the building is equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1, the length of dead-end corridors shall not exceed 50 feet (15 240 mm).

3. A dead-end corridor shall not be limited in length where the length of the dead-end corridor is less than 2.5 times the least width of the dead-end corridor.
F.A.Q’s

Building Code Gray Areas:

The following issues are not clearly addressed in the International Building Code, so there are many interpretations on what is allowed.

1. Skybridge Doors - This type of door includes dead-end corridors & blocked exits.
   a) Question: Are hard-wired fire pull stations O.K. to eliminate the dead end?
      Answer: Yes, a double pole double throw pull station would be required to break the contact.

2. Enclosed Elevator Lobbies – These doors are blocked exits.
   a) Question: Are hard-wired fire pull stations O.K. to eliminate the dead end?
      Answer: Yes, a double pole double throw pull station would be required to break the contact.
   b) Question: Do strikes, electric mortise and other electromechanical locks have to be permitted?
      Answer: Yes, all electronic locking devices will require a permit and inspection.

3. Many unscrupulous security companies will incorrectly install these type locks and not permit them. They can create dead end corridors, blocked 1st & 2nd exits, and man-traps.
   a) Question: If permitting is enforced, is an inspection required if there is free mechanical egress shown on the plans?
      Answer: Yes, all electronic locking devices will require a permit and inspection.
   b) Question: Are shear electromagnetic locks allowed?
      Answer: Yes, all UL listed or approved electronic locking device will be accepted, however the Building Code Official reserves the right to require another type of locking device, if deemed necessary.
   c) Question: Are delay egress locks allowed?
      Answer: the IBC 2006 ed. section 1008.1.8.6 allows the installation of delay egress lock in certain occupancy.
   d) Question: Are drop-bolt electric locks allowed?
      Answer: Yes, all UL listed or approved electronic locking device will be accepted, however the Building Code Official reserves the right to require another type of locking device if deemed necessary.
e) **Questions:** Are touch-sense bars allowed?

- Can these be used in high occupancy areas (churches, schools, hospitals)?
- Touch-sense is solid state, not electromechanical?

**Answer:** yes, touch-sense bars shall be allowed, however they may not be a substitute for panic hardware.

f) **Question:** When do mag-locks not require a motion detector?

- Doors not in the path of egress

**Answer:** If the mag-lock is in the common path of egress and/or means of egress there shall be 2 means of releasing the magnetic locking device. Doors that are not in any part of the means of egress shall be allowed to have magnetic locking devices without motion detectors as long as there is a manual button on the egress side of the door.

g) **Questions:** Do outside pedestrian gates with mag-locks have to be permitted?

- Do they need motion detectors?

**Answer:** Yes, if the gate is in the path of egress, before the exit discharge then the electronic locking device would require a permit. Electronic locking devices added to perimeter fencing that is not in any part of the means of egress, shall follow the requirements of 1024.6 IBC 2006 ed. and not required to be permitted.

h) **Question:** Is battery back-up OK?

**Answer:** Yes, battery back is acceptable when the electronic locking system is interconnected to a fire alarm system with secondary power supply shall have sufficient capacity to operate the fire alarm system under quiescent load (system operating in a non-alarm condition) for a minimum of 60 hours and, at the end of that period, shall be capable of operating all alarm notification appliances used for evacuation or to direct aid to the location of an emergency for 15 minutes. *If there is standby generator then the requirements are null.

i) **Question:** If a door is not in the path of egress (no exit sign and it could just as well have been a wall) do you need an exit device at all?

**Answer:** No, as long as that door is not required as a common path of egress.

j) **Question:** Is reader in/out with no egress device OK if the door is not in the path of egress from either side?

**Answer:** Yes, as long as that door is controlled by the fire alarm system and is approved as either fail safe or fail secure.
k) **Question:** On permit plans, do existing electric locks have to be shown?
**Answer:** Yes, we need to know what exists and what is being added to ensure code compliance.

l) **Question:** Will the county issue stickers for inspected electric lock doors?
**Answer:** Yes, the plan review department will issue the exact number of stickers for approved doors.

m) **Question:** If a company takes over a security system for service maintenance, does it need to be re-permitted?
**Answer:** Yes, existing doors will have 12 months to be brought up to meet the current code criteria and be inspected.

n) **Question:** If a company takes over a security system and retrofits the system, does it need to be re-permitted?
**Answer:** Yes, if the original head-end system is removed and placed by another product. Then the system will need a new permit and inspection.

o) **Question:** Can fire alarm sirens & strobes be turned off during the field inspection?
**Answer:** Yes, during an inspection the audible and visual device may be disabled for testing purposes. Once the testing is finish the audible and visual device shall be enabled and function as per the current adopted version of the NFPA 72.

p) **Question:** What is the minimum distance that a motion detector will sense motion to deactivate a locked door?
**Answer:** 5 to 6 feet from an electronically locked door.
**ELECTRIC LOCK SYMBOLS**

- **EXIT SIGN**
- **FIRE PULL STATION**
- **SMOKE DETECTOR**
- **CAMERA MONITORED 24/7 WITH REMOTE UNLOCK.**
- **TWO-WAY COMMUNICATION DEVICE MONITORED 24/7 WITH UNLOCK SWITCH AT THE FIRE COMMAND CENTER.**

**SIGN #1** - READS: "PUSH TO EXIT" ADJACENT TO EXIT BUTTON. LETTERS WITH CONTRASTING BACKGROUND.

**SIGN #2** - READS: "THIS DOOR TO REMAIN UNLOCKED WHEN BUILDING IS OCCUPIED" ADJACENT TO DOOR. CAPITAL LETTERS 1" INCH MINIMUM HEIGHT ON CONTRASTING BACKGROUND.

**SIGN #3** - READS: "PUSH/PULL TO RELEASE DOOR IN AN EMERGENCY" ADJACENT TO FIRE PULL STATION. LETTERS RAISED 1/32" UPPER CASE, 5/8" MINIMUM HEIGHT ON CONTRASTING BACKGROUND WITH GRADE 2 BRAILLE AS PER TEXAS ACCESSIBILITY STANDARDS (TAS) OF THE ARCHITECTURAL BARRIERS ACT, ARTICLE 9.02, TEXAS CIVIL STATUTES, EFFECTIVE APRIL 1, 1994.

**SIGN #4** - READS: "PUSH UNTIL ALARM SOUNDS. DOOR CAN BE OPENED IN 15 SECONDS" WITHIN 12 INCHES OF RELEASE DEVICE.

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**ELECTRIC LOCK HARDWARE SCHEDULE**

<table>
<thead>
<tr>
<th>DEVICE</th>
<th>MAKE</th>
<th>MODEL</th>
<th>THEORY OF OPERATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>CR CARD</td>
<td>Reader</td>
<td></td>
<td>HOLD CARD IN FRONT OF READER TO DISENGAGE ELECTRIC LOCK(S)</td>
</tr>
<tr>
<td>KP Keypad</td>
<td></td>
<td></td>
<td>INPUT CODE IN KEYPAD TO DISENGAGE ELECTRIC LOCK</td>
</tr>
<tr>
<td>EXIT BUTTON</td>
<td></td>
<td></td>
<td>PRESS BUTTON TO DISENGAGE ELECTRIC LOCK</td>
</tr>
<tr>
<td>MOTION DETECTOR</td>
<td></td>
<td></td>
<td>DEVICE DISENGAGES ELECTRIC LOCK TO PROVIDE ONE MOTION EXIT</td>
</tr>
<tr>
<td>MAG LOCK</td>
<td>failsafe</td>
<td></td>
<td>LOCKS AND UNLOCKS DOOR WITH ENTRY OR EXIT DEVICE</td>
</tr>
<tr>
<td>ELECTRIC STRIKE</td>
<td>failsafe</td>
<td></td>
<td>LOCKS DOOR WITH ENTRY DEVICE. TURN HANDLE FOR ONE MOTION EXIT</td>
</tr>
<tr>
<td>ELECTRIC MORTISE</td>
<td>failsafe</td>
<td></td>
<td>LOCKS DOOR WITH ENTRY DEVICE. TURN HANDLE FOR ONE MOTION EXIT</td>
</tr>
<tr>
<td>DELAY EGRESS MAG LOCK</td>
<td>failsafe</td>
<td></td>
<td>PUSH DOOR FOR 1 SECOND TO INITIATE IRREVOCABLE RELEASE OF DELAY LOCK IN 15 SECONDS W/ MANUAL RESET.</td>
</tr>
<tr>
<td>ELECTRIC STRIKE</td>
<td>failsecure</td>
<td></td>
<td>LOCKS DOOR WITH ENTRY DEVICE. TURN HANDLE FOR ONE MOTION EXIT</td>
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<td>ELECTRIC MORTISE</td>
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<tr>
<td>EXIT BAR</td>
<td></td>
<td>failsecure</td>
<td>PRESS BAR TO DISENGAGE ELECTRIC LOCK</td>
</tr>
</tbody>
</table>

Please provide Fail Safe or Fail Secure operation.