

HOUSTON FIRE DEPARTMENT LIFE SAFETY BUREAU (LSB)

LSB STANDARD 04, REV. 04 ACCESS CONTROL GATES



Note: A vertical bar in the left-hand margin denotes revisions to the previous version.

SUPERSEDES: LSB Standard 04, Rev 03 Effective 12/31/2010

Effective Date: 5/01/2012



LSB Standards are established in accordance with provisions of the City of Houston Fire Code. They are subject to the administrative sections covering alternative materials and methods, modifications, and the Board of Appeals.

TABLE OF CONTENTS

SECTION 4.1 -- GENERAL	1
4.1.1 Scope.	1
4.1.2 Purpose.	1
SECTION 4.2 -- DEFINITIONS	2
4.2.1 Access Control Gate or Barrier.	2
4.2.2 Fire Apparatus Access Road.	2
4.2.3 "Fail-safe" Operation.	2
4.2.4 Falcon Padlock.	2
4.2.5 Falcon Lock Mortise Cylinder.	2
4.2.6 Gate Operation.	2
4.2.7 Private drives.	2
4.2.8 Private street or road.	2
4.2.9 Public street.	3
4.2.10 Reader / Reader appliance.	3
4.2.11 "9-1-1" Box.	3
SECTION 4.3 -- GENERAL REQUIREMENTS	3
4.3.1 Approval required.	3
4.3.2 Gate Width Operations.	3
4.3.2.1 Gates on dedicated Private Streets, at the entrance to Residential Development Projects.	3
4.3.2.2 Gates on Private Drives at entrances to Residential Development projects.	4
4.3.3 Gate opening devices and approvals.	5
4.3.4 Existing gates and barriers.	6
4.3.5 Gates on High Voltage Fence.	6
4.3.6 Vertical Clearance.	6
4.3.7 Approval Requirement.	6
4.3.7.1 Letter of Explanation.	6
4.3.7.2 Requirements for Drawings (Plans) of Gates/barriers.	7
4.3.7.3 Additional information as may be required.	7
4.3.8 Permits required.	8
APPENDIX A	9
AUTOMATIC AND MANUAL SWING COMBINATION GATE	9
APPENDIX B	13
MANUAL SWING AND AN AUTOMATIC SLIDE GATE	13
APPENDIX C	15
13-FOOT AUTOMATIC SLIDE GATES	15
APPENDIX D	16
14-FOOT AUTOMATIC SLIDE GATES	16
APPENDIX E	17
OPTIONAL - APPROVED FALCON MORTISE CYLINDER.	17
APPENDIX F	20
"9-1-1" BOX AND "RE-SET" BOX.	20
APPENDIX G	21
AUTOMATIC SYSTEM USING A MICRO-SWITCH	21
APPENDIX H	22

“9-1-1” AND “Fail-safe” system on electric gates	22
APPENDIX I	23
“Fail-safe” CABLE ASSEMBLY ON ELECTRICALLY OPERATED SWING GATE	23
APPENDIX J	24
“Fail-safe” EMERGENCY ILLUSTRATION.....	24
APPENDIX K	25
FOLD DOWN HINGE SYSTEM.....	25
APPENDIX L	26
SPRING-LOADED “DROP ROD” ASSEMBLY	26
APPENDIX M	27
ACCESS CONTROL BARRIERS	27
Any device or construction that restricts a fire department access road. Examples of devices or construction below:.....	27
APPENDIX N	28
Performance Standards.....	28
APPENDIX O	29
PROCEDURE FOR SUBMITTAL FOR GATE (BARRIER) APPROVALS	29
REFERENCES	34

LSB STANDARD 04, REV 04

ACCESS CONTROL GATES

SECTION 4.1 --- GENERAL

4.1.1 Scope.

This standard provides a method of providing and maintaining adequate and unobstructed emergency access for fire department apparatus and personnel to buildings, structures, hazardous occupancies or other premises, as may be required by the Fire Marshal, Chief of the Houston Fire Department and the *Fire Code*, within the City of Houston.

4.1.2 Purpose.

The purpose shall be to provide clarification of requirements and guidance to the person charged with providing and maintaining required fire department access to premises in compliance with the *Fire Code*. The provisions of this Standard are general in nature and are not intended to override the specific requirements of City of Houston *Code of Ordinances* or the *Fire Code*.

This standard is subject to periodic review and updates, to accommodate changes in local need or requirements, changes in nationally recognized standards, in related technology, or where required by state or federal regulations.

Notice: Where references in this Standard are made to products manufactured by “Falcon Locks” and related 9-1-1 boxes, certain products manufactured by the “Knox Company” have been approved for voluntary use in lieu of “Falcon Lock” products and the 9-1-1 boxes.

Approved items manufactured by the “Knox Company” may be referenced online at www.knoxbox.com.

The following is a list of acceptable “Knox Company” products that are allowed to be used inside the City of Houston City Limits.

- Elevator Box
- Electrical Shutdown Box
- Keyswitch
- Padlock
- FDC 2 ½” Locking Cap
- SecureCap
- Cabinets (1300 Series)
- 3200 Series Box, Single-Key Style, ONLY with the hinged lid.
- 4100 Series Box

The Fire Marshal’s final approval and a permit are required for the installation and use of any “Knox Company” or “Falcon Lock” product.

SECTION 4.2 --- DEFINITIONS

4.2.1 Access Control Gate or Barrier.

Any gate or barrier placed across a fire apparatus access road to restrict other vehicles or use. Access control barriers may include, but are not limited to: chains, bars, barricades, or similar devices or construction. Tire spikes shall not be used to restrict a fire apparatus access road. Where a swing gate or swing barrier is provided it shall swing in the direction towards the property.

4.2.2 Fire Apparatus Access Road.

A designated road or lane provided so that fire department apparatus can approach or obtain entrance to a building, structure or other property in event of a fire or other emergency situation.

4.2.3 “Fail-safe” Operation.

A manual operation of electronic slide or swing gates that can be used in the event of power failure or equipment malfunction.

4.2.4 Falcon Padlock.

An approved “9-1-1” padlock applied to “9-1-1” gate operations and attainable only from certain gate companies or contractors.

4.2.5 Falcon Lock Mortise Cylinder.

A type of Falcon lock used with the operation of electronically controlled gates. This is a keyed device that causes a gate to open when a “9-1-1” key is inserted in the mortise cylinder keyhole and turned.

4.2.6 Gate Operation.

A gate operation or function such as manual, electronic, swing arm, chain drive; entry devices such as a card reader, key pad, telephone; direction of gate swing, fail safe methods.

4.2.7 Private drives.

A private drive is a privately owned and maintained access way used for vehicular travel that is not a street or private street and that provides an unobstructed connection between one or more streets or private streets or to any portion of a parking lot, shopping center, institution, commercial area or industrial development.

A private drive may provide for access by the general public, but the owner of the private drive maintains the right to restrict public access to the private drive. Private drives are drives that require a width of 24 feet or less.

4.2.8 Private street or road.

A private street or road is a privately owned and maintained vehicular access way that provides access to a property from a public street.

Dedicated private streets, as defined in Chapter No. 42 of the City of Houston *Code of Ordinances* require a width of 28 feet. All openings or access points from the public streets to the private streets in a residential development project are considered to be “entrances” by definition.

4.2.9 Public street.

A public right-of-way, however designated, dedicated or acquired, that provides access to adjacent property.

4.2.10 Reader / Reader appliance.

Readers can be devices such as a card reader, swipe card reader, key punch, telephone, or similar devices that when activated will provide for the unlatching, unlocking or opening of an access control gate or barrier.

4.2.11 “ 9-1-1” Box.

Where required, an approved box that contains: emergency keys; access door lock, gate or barrier release or deactivation devices; and may in addition contain such information as required by the fire department to affect safe and ready access to a property, building or structure in event of an emergency.

SECTION 4.3 --- GENERAL REQUIREMENTS

4.3.1 Approval required.

A 'Fire Marshal Approval' permit is required to install and maintain access control gates and barriers on private drive, street, or road into such properties as residential development projects, nursing homes, hospitals, schools, industrial plants and facilities, hazardous materials storage or disposal sites, Group H occupancy sites, high pile combustible storage sites, large storage sites, or other sites as the Fire Marshal may require. Approval by the Fire Marshal shall be obtained *prior to* installation of an access control gate or barrier.

4.3.2 Gate Width Operations.

4.3.2.1 Gates on dedicated Private Streets, at the entrance to Residential Development Projects.

1. Two 14-foot gates that open to provide access to the full 28-foot street width at a project entrance.

Note: The 28 feet of access is also required when the gate is operated using a “Fail-safe” method.

2. One 28-foot gate that opens to provide access to the full 28-foot street width at a project entrance.
3. Two gates of a minimum of 13-foot width each, with a maximum of 2 feet allowed in the middle of a private street for readers or similar devices and/or center post at a project entrance. (13 feet + 2 feet for a reader + 13 feet = 28 total feet minimum)
4. Where any private street is less than 28 feet in width, for example, where there are 20-foot streets divided by esplanades, then the entire width of the street shall be accessible without any obstruction in the street when the gates are open. The width of the gates may

vary to accommodate the width of the street.

Note: All openings or access points from public streets to the private streets in a residential development project are considered to be “entrances” by definition.

4.3.2.2 Gates on Private Drives at entrances to Residential Development projects.

1. One 14-foot gate that opens to provide at least 14 feet of access width where the drive is less than 28 feet.
2. Two gates of a minimum of 13-foot width each where the drive is 28 feet wide.
3. One 28-foot gate that opens to give full access where the drive is 28 feet wide.

4.3.2.3 Access Control Gate/Barrier on Fire Apparatus Access Roads, at hazardous material sites, Group H occupancies and high pile combustible storage sites.

4.3.2.3.1 Dimensions. Access control gate/barriers shall have an unobstructed width of not less than 20 feet and an unobstructed vertical clearance of not less than 13 feet- 6 inches

Exceptions:

1. When approved by the code official, vertical clearance may be reduced, provided the reduction does not impair access by fire apparatus and approved signs are installed and maintained indicating the established vertical clearance.
2. When approved by the code official, existing access control gate/barriers may have an unobstructed width of not less than 15 feet (4572 mm), when the reduction in width will not impair access by the fire department equipment. (2000 IFC 503.2.1)

The code official shall have the authority to require an increase in the minimum access widths where they are inadequate for fire or rescue operations. (2000 IFC 503.2.2)

4.3.2.3.2 Construction documents for Access Control Gate/Barriers

Construction documents for proposed fire apparatus access and access control gate/barriers shall be submitted to the Hazardous Material/ High Pile Combustible Storage Inspection Team, 1205 Dart St., Houston, Texas 77007, for review and approval prior to construction. (2000 IFC 501.3)

The following must be included:

- Width of the gate/barrier openings.
- Type of gate or barrier operation: (slide, swing, etc.)
- Distance from the access roads to the gates/barriers.
- Distance from the gate to the reader.
- Location of the reader (card reader, key pad, telephone entry, etc.)

- Location of the “9-1-1” Box, with numbers (9) (1) (1) on the box and using numbers contrasting to the Red “9-1-1” Box.
- Location and type of the hold open devices.
- Location and type of the automatic opening device(s).
- Any vertical clearance obstructions.
- Gates are to automatically open and remain open until closed manually.
- Gates/barriers must remain open at all times until a fire prevention inspector has made a final “on-site” inspection and approval.

4.3.2.3.3 Automatic Swing or Slide Gates

The gate shall be twenty (20) feet in width. A “9-1-1” Box and a “Fail-safe” Box shall be installed on the gatepost at a height not to exceed five (5) feet. When approved by the code official, the “9-1-1” Box and the “Fail-safe” Box may be combined. For “9-1-1” Box specifications and details, see Appendix P.

4.3.2.3.3.1 Electrically Powered Gates

The “9-1-1” Box is provided with an electrical switch (toggle or micro switch with button). Moving the toggle switch to the “Up” position will cause the gate to swing open towards the project or roll to a fully open position. The micro-switch will automatically activate once the hinged lid on the “9-1-1” Box is opened (see Appendix G). The gate shall remain open until the toggle switch is returned to its original position.

4.3.2.3.3.2 Falcon Mortise Cylinder “9-1-1” System

Shall be in accordance with Appendix E

4.3.2.3.3.3 Fold- Down Hinge Gates

The key located in the “9-1-1” Box opens the lock located on a fold-down hinge (see Appendix K). When the lock is removed, the hinge falls down flat towards the project property on the access road, and the gate opens automatically by springs or counter weight. “Duckbill” catches behind the gate will hold the gate open until manually closed.

4.3.2.3.3.4 Hydraulic Gates

Hydraulic gate operations are under review for consideration, and are currently not allowed.

4.3.2.3.4 Automatic Swing Gates (Fail-safe System)

If power is interrupted, or due to mechanical malfunction, the access gate is not operable, a key shall be provided in the “9-1-1” Box that will unlock the lock(s) attached to a pin in the arm of the operator causing the pin to fall towards the ground (see Appendix A/ Enclosure Nos. 2 & 3). The gate now manually operable can be opened to its full width (20 feet). “Duckbill” catches behind the gate will hold the gate open until manually closed or repairs can be made to return the gate to normal operation.

4.3.3 Gate opening devices and approvals.

Gate opening devices and approvals shall be the same as those required for gates installed on private streets as specified above.

4.3.4 Existing gates and barriers.

1. “*Approved*” gates/barriers shall mean those gates/barriers with written approval from the Fire Marshal. Gates/barriers approved prior to this policy may remain as is, unless the gates/barriers prove to be inadequate during an emergency situation. Such gates/barriers will require that plans be resubmitted to the Fire Marshal for approval. Also, any remodeling or rebuilding of approved gates/barriers that will change the gate/barrier opening or opening device(s) must be resubmitted to the Fire Marshal for approval.

Note: Approved gates/barriers are gates/barriers that met the requirements, which had been in effect from the first day of submitting 3 sets of plans, the plans being approved, and then receiving a written approval by the Fire Marshal.

2. “*Unapproved*” gates/barriers shall mean those gates/barriers that **do not** have written approval from the Fire Marshal, prove to be inadequate during emergency situations or that have been altered or modified after receiving a Fire Marshal’s Approval.

4.3.5 Gates on High Voltage Fence

Gates used in conjunction with a High Voltage Electric Fence as allowed by City Ordinance 2008-81 shall not be electrically charged and shall be designed so that when the gate makes contact with any part of a charged fence the fence and gate will ground. Signs shall be placed on gates (other than the main entrance as approved by the code official) stating “9-1-1 High Voltage Key Box Located at Main Entrance”. Signs shall be Yellow in color with letters in contrasting color and shall be of a size that is readily visible at all times. Gates used with a High Voltage Fence shall comply with all other applicable regulations found in this standard and the Houston Fire Code.

4.3.6 Vertical Clearance.

Unobstructed vertical clearance of not less than 13 feet-6 inches shall be maintained over the full width of all fire department access roads, drives and gates.

- EXCEPTION:**
1. Vertical clearance may be reduced, provided such reduction does not impair access by fire apparatus and approved signs are installed and maintained indicating the established vertical clearance when approved.
 2. Over-height warning indicators when approved.

Vertical clearances or widths shall be increased when, in the opinion of the Fire Marshal, vertical clearances or widths are not adequate to provide fire apparatus access.

4.3.7 Approval Requirement.

4.3.7.1 Letter of Explanation.

A letter of explanation is required to fully explain what is being submitted for approval.

- What type of operation (function) is applicable to the “9-1-1” Box?
(Mortise cylinder, toggle switch, key, etc.)

- How the “Fail-safe” system works. (The “Fail-safe” must be able to be activated on the *same side of the gate* as the “9-1-1” Box. Firefighters *shall not* be required to insert their arm through a gate to use a “Fail-safe” key or other device.)
- Manual override operations are required on electrically operated gates.
- Gates must open without delay.
- Other necessary information.

4.3.7.2 Requirements for Drawings (Plans) of Gates/barriers.

The following must be included:

- Width of the gate/barrier openings.
- Type of gate or barrier operation: (slide, swing, etc.)
- Distance from the access roads to the gates/barriers.
- Distance from the gate to the reader.
- Location of the reader (card reader, key pad, telephone entry, etc.)
- Location of the “9-1-1” Box, with **White** numbers (9) (1) (1) on the box contrasting to the **Red** “9-1-1” Box.
- Location and type of the hold open devices.
- Location and type of the automatic opening device(s).
- Any vertical clearance obstructions.
- Gates are to automatically open and remain open until closed manually.
- Gates/barriers must remain open at all times until a fire prevention inspector has made a final “on-site” inspection and approval.

4.3.7.3 Additional information as may be required.

1. It is recommended by the Fire Marshal that the “9-1-1” system be equipped with access capability (such as a reset button or similar device) on the project side of the property so that the property management can close the gate after emergency responders leave the property.
2. Gate width openings during *NORMAL* or *FAIL-SAFE* operations shall be the same as required for the width of the private street, private drive or access road. The full-required width of the private street, private drive or access road shall be available for use.
3. Gates/barriers shall open towards the project property, opening away from the emergency responders that may be entering the property.
4. When a pin is used in a “Fail-safe” assembly and the lock is removed, the pin shall be installed such that it will fall toward the ground (automatic swing arm gates.)
5. The holes in “9-1-1” systems such as the lock hole in the “9-1-1” Box, the pinhole in some “Fail-safe” systems that use a lock, pin, or similar device shall be large enough that the lock, pin, or similar device can be easily removed.

6. Readers, telephone entry devices or other entry devices installed within the width of a private street, private drive or access road shall be made readily visible by means of reflective material. At least 50 percent (50%) of the height of the mounting device, pole, column, etc., shall have the reflective material provided.

4.3.8 Permits required.

A permit is required to install and maintain a fire apparatus access-control gate or barrier on a fire apparatus access road, or a private drive or private street utilized for fire apparatus access. A permit is also required to install and maintain a "9-1-1" Key Box; this permit shall be renewed annually.

Permit Office contact information is as follows:

The Houston Permitting Center

1002 Washington Avenue

Houston, Texas 77007

Hours of operation: 8:00 a.m. to 3:30 p.m. Central Time

Monday through Friday

Office phone (832)394-8811

To Email Customer Service Questions: hfd.permitoffice@houstontx.gov

Link to City Wide Fee Schedule: www.houstoncityfees.org

APPENDIX A AUTOMATIC AND MANUAL SWING COMBINATION GATE

The following is an example of automatic entry with one automatic gate and one manual operated gate. Both gates will be 14 feet in width. A "9-1-1" Box and a "Fail-safe" Box will be installed on the gate post at a height not to exceed 5 feet. For details and specifications of a "9-1-1" Box, see Appendix F, "9-1-1" BOX AND RE-SET BOX". This box can be fabricated or purchased. The "9-1-1" Box is provided with an electrical switch (toggle or micro-switch with button). Moving the toggle switch to the "Up" position will cause the gate to swing open toward the project. The micro-switch will automatically activate once the hinged lid on the "9-1-1" Box is opened (see included drawings). The gate shall remain open until the toggle switch or hinged opening is returned to its original position.

Note: When approved, the "9-1-1" Box and the "Fail-safe" Box may be combined.

Fail-safe:

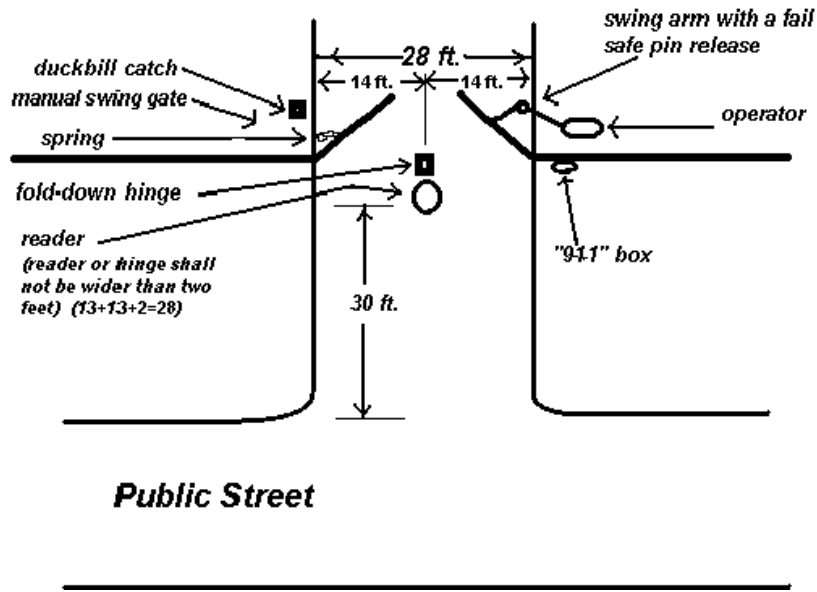
If the power is off, a key provided from the "9-1-1" Box will unlock the lock attached to a pin in the arm of the operator causing the pin to fall out, thereby making the gate manually operable. In the manually operated mode, the gate shall open to the full width of the street, drive or access road. 'Duckbill' catches behind the gate will hold the gate open until manually closed or repairs are made to return the gate to normal operation, as approved. See Enclosures No. 2 & 3.

Fold-Down Hinge, Duckbill, and Similar Approved Devices:

The other gate is a manual 14-foot "9-1-1" Access Gate. The key located in the "9-1-1" Box is the same key used to unlock the lock on the automatic gate. The key opens the lock located on a fold-down hinge (see Appendix K). When the lock is removed, the hinge falls down flat towards the project property on the street, drive or access road and the gate opens automatically by springs or a counter weight. 'Duckbill' catches behind the gate will hold the gate open until manually closed.

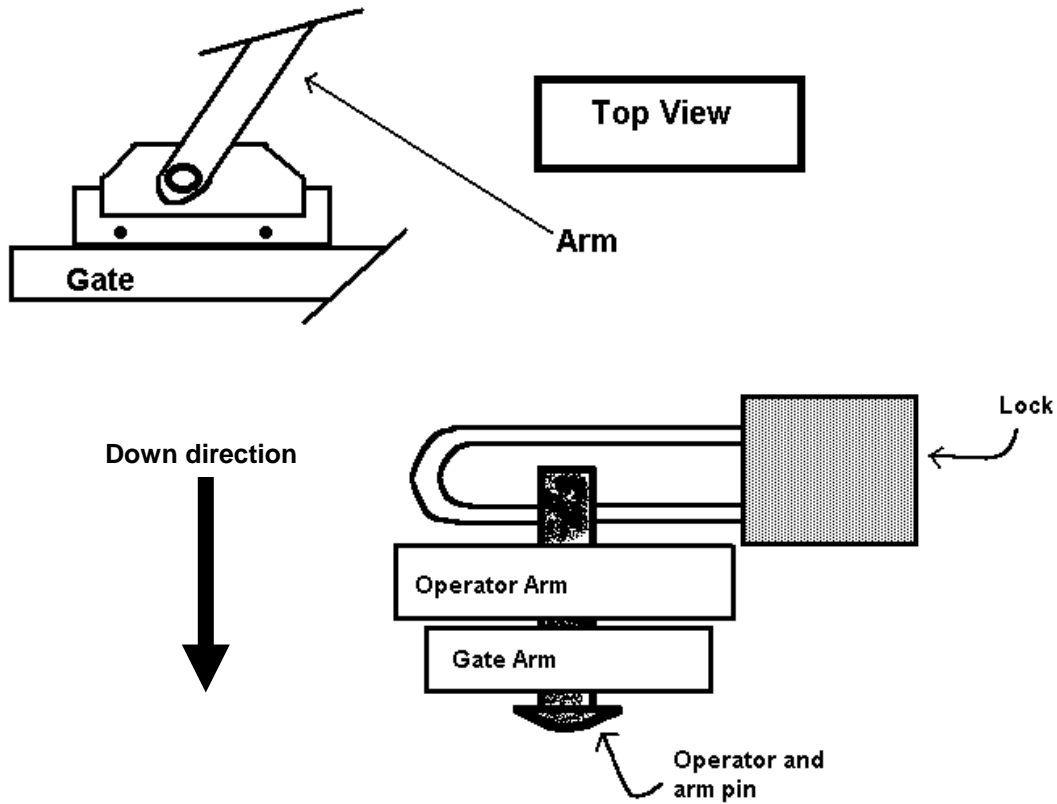
Note: Hydraulic swing operated gates are not allowed at this time. (Hydraulic operated swing gate operations are under review for consideration at this time.)

ENCLOSURE NO. 1 AUTOMATIC AND MANUAL SWING GATE COMBINATION



Note: The gate width opening is at least the same as required for the width of the private street, private drive or access road.

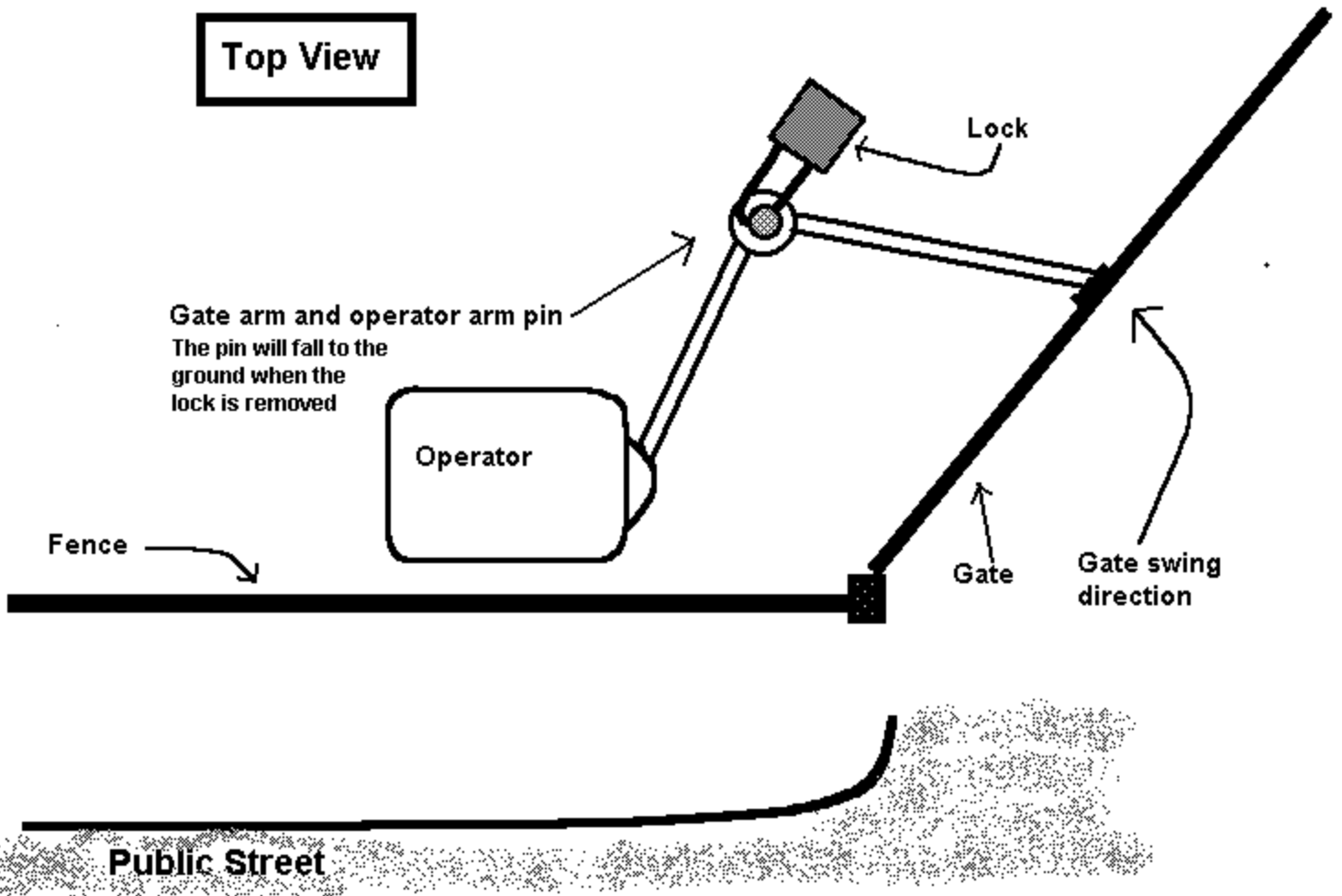
ENCLOSURE NO. 2 "FAIL-SAFE" ON A SWING GATE ARM



When a pin is used in a "Fail-safe" assembly and the lock is removed, the pin shall be installed such that it will readily fall toward the ground.

ENCLOSURE NO. 3 "FAIL-SAFE" ON SWING GATE

Top View



Note: When the operator and the gate arms are activated in the normal mode or in the "Fail-safe" mode, the gate shall open such that the full required width of the street, drive or access road will be maintained and the full required width available for emergency use.

APPENDIX B

MANUAL SWING AND AN AUTOMATIC SLIDE GATE

This is an automatic entry with one automatic slide gate and one manual gate. Both gates will be 14 feet in width. Describe the “9-1-1” Box and the “Fail-safe” Box in detail as described in Appendix A.

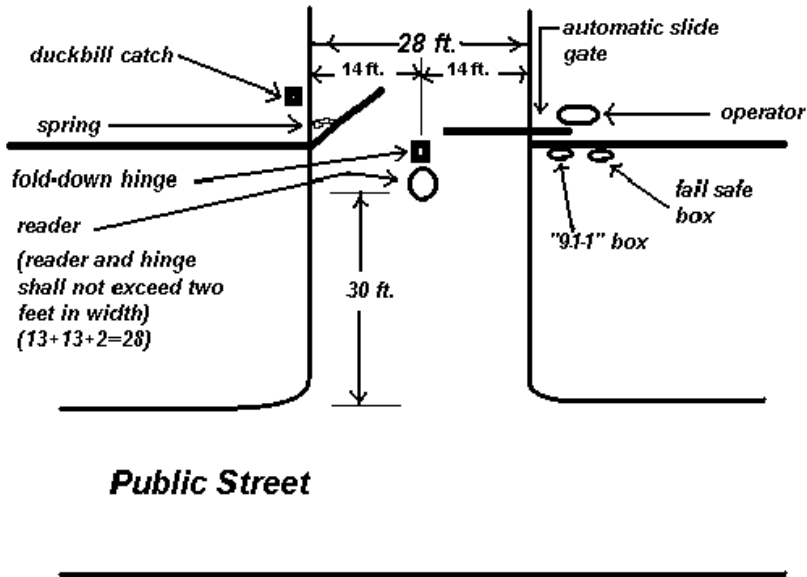
Fail-safe:

The manual disconnect on the automatic slide gate will comprise of a pull cable connected from a lock box (“Fail-safe” Box) located on the outside edge of the gate near the “9-1-1” Box.

The adjustment bolt and a “pull pin” will pull apart at the chain so that when the cable is pulled, the chain will drop at the rear of the gate. The padlock key for the gate “Fail-safe” Box will be located in the “9-1-1” Box. The key shall be labeled for use with the “Fail-safe” Box (drawing included).

The other gate is a manual 14-foot gate. The key located in the “9-1-1” Box is the same key used on the automatic gate “Fail-safe”. The key opens a lock on the fold-down hinge. When the lock is removed, the hinge will fall down flat on the street, drive or access road and the gate opens automatically by springs or a counter weight. ‘Duckbill’ catches behind the gate will hold it open until manually closed. When open, the full-required width of the street, drive or access road will be available.

ENCLOSURE NO. 1 MANUAL SWING AND AN AUTOMATIC SLIDE GATE



Note: The gate width opening is at least the same as required for the width of the private street, private drive or access road.

APPENDIX C

13-FOOT AUTOMATIC SLIDE GATES

Two 13-Foot Automatic Slide Gates on a 28-Foot Access with a 2-Foot Appliance Allowance

(Appliance meaning: Card reader, keypad, telephone, etc.)

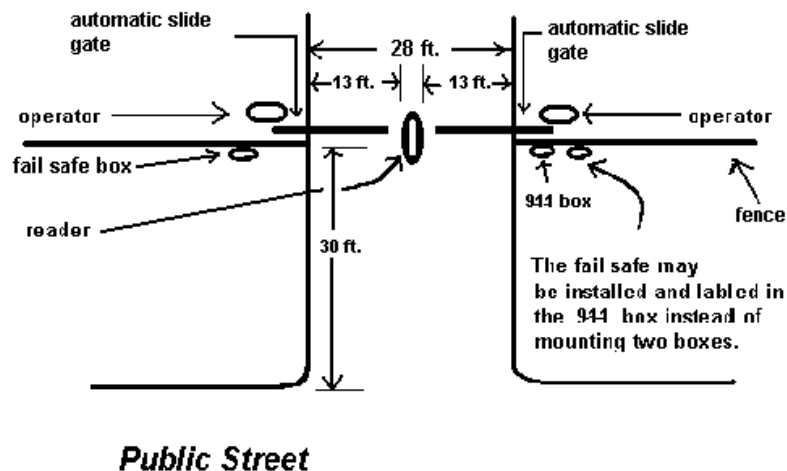
Gate drawing shows an automated entry with two 13-foot automatic slide gates on a 28-foot access road. The “9-1-1” Box will be mounted on the public street side of the gate as would be viewed by an emergency vehicle.

Fail-safe:

Describe the “9-1-1” Box and the “Fail-safe” feature in detail (as described in Appendix A)

The “9-1-1” Box (or an extra box if desired) will provide a manual “Fail-safe” release (pull cable) that allows the gate to be rolled out into a full open position by manually pushing the gate. This release is functional with or without power. The gate will remain open until closed manually.

Two gates at 13 feet each are allowed if a reader is installed in the center of the access road. The reader assembly shall not exceed 2 feet in width on a 28-foot access and 13 feet of access shall be maintained free and clear on each side of the reader.



APPENDIX D

14-FOOT AUTOMATIC SLIDE GATES

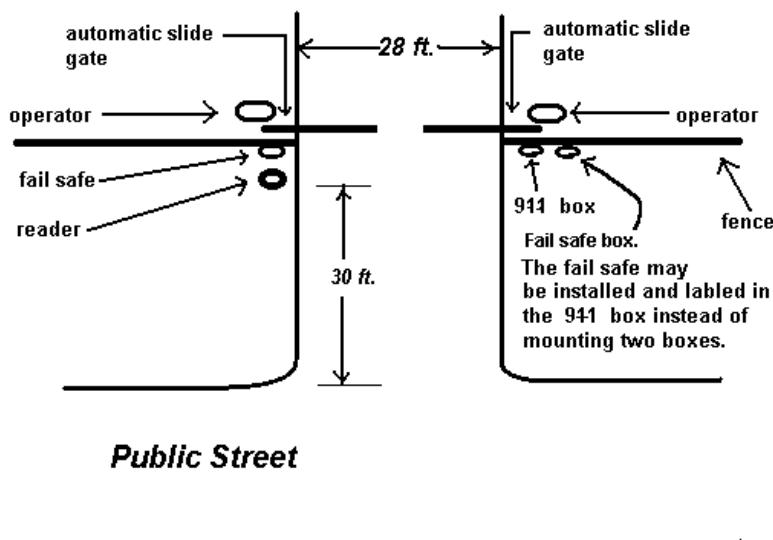
Two 14-Foot Automatic Slide Gates with no Appliances within the 28-Foot Access

The drawing below shows an automated entry with two 14-foot automatic slide gates on a 28-foot access road. The “9-1-1” Box will be mounted on the public street side of the gate as would be viewed by an emergency vehicle. This design is referred to as a “*European Entry*” which allows a free and clear 28-foot width. This is the preferred and recommended method for private streets because appliances such as readers are to the side of the access and there are no obstructions within the 28-foot street width.

Fail-safe:

Describe the “9-1-1” Box and the “Fail-safe” feature in detail. (Refer to Appendix A)

The “9-1-1” Box (or an extra box if desired) will provide a manual “Fail-safe” release (pull cable) that allows the gates to be rolled out into a full open position by manually pushing the gates. This release is functional with or without power. The gate will remain open until closed manually.



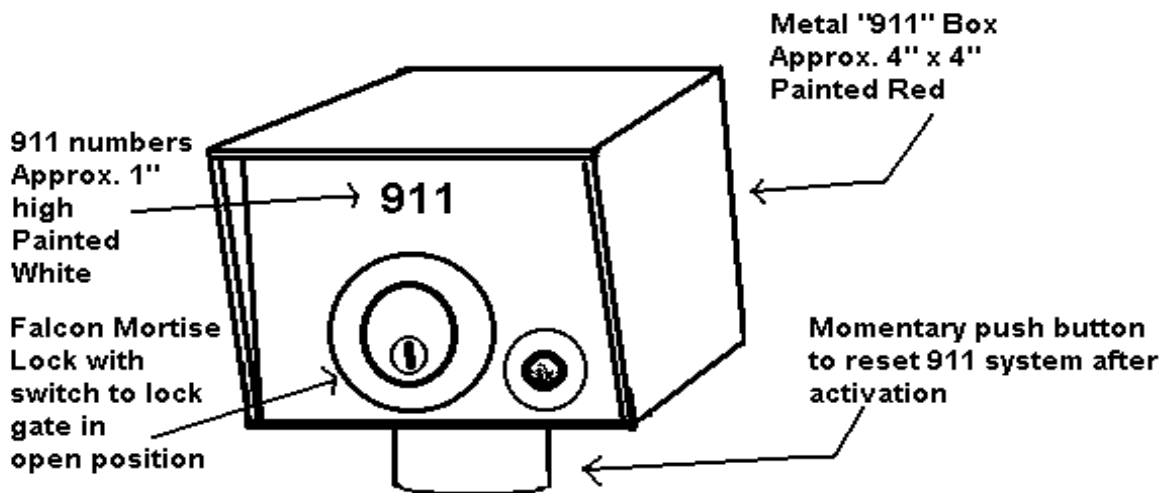
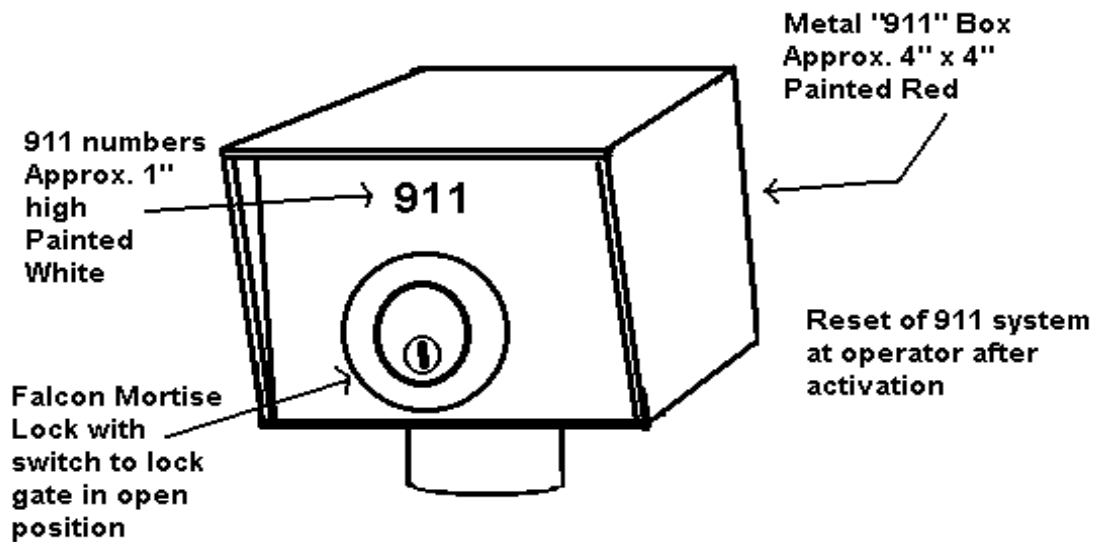
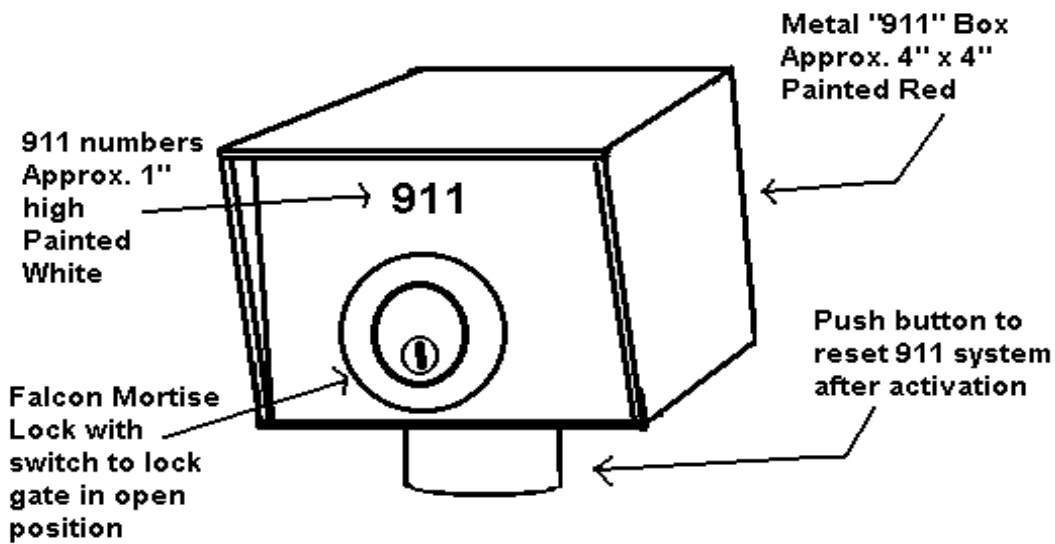
APPENDIX E

OPTIONAL - APPROVED FALCON MORTISE CYLINDER "9-1-1" SYSTEM

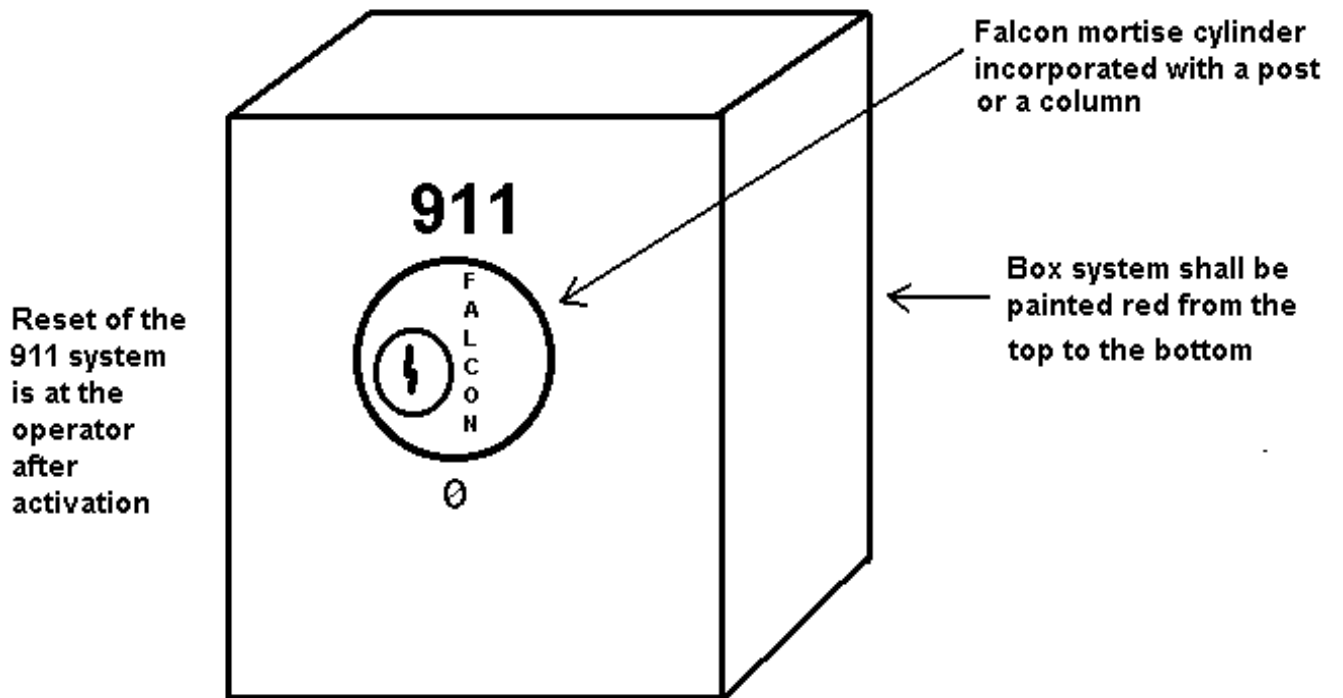
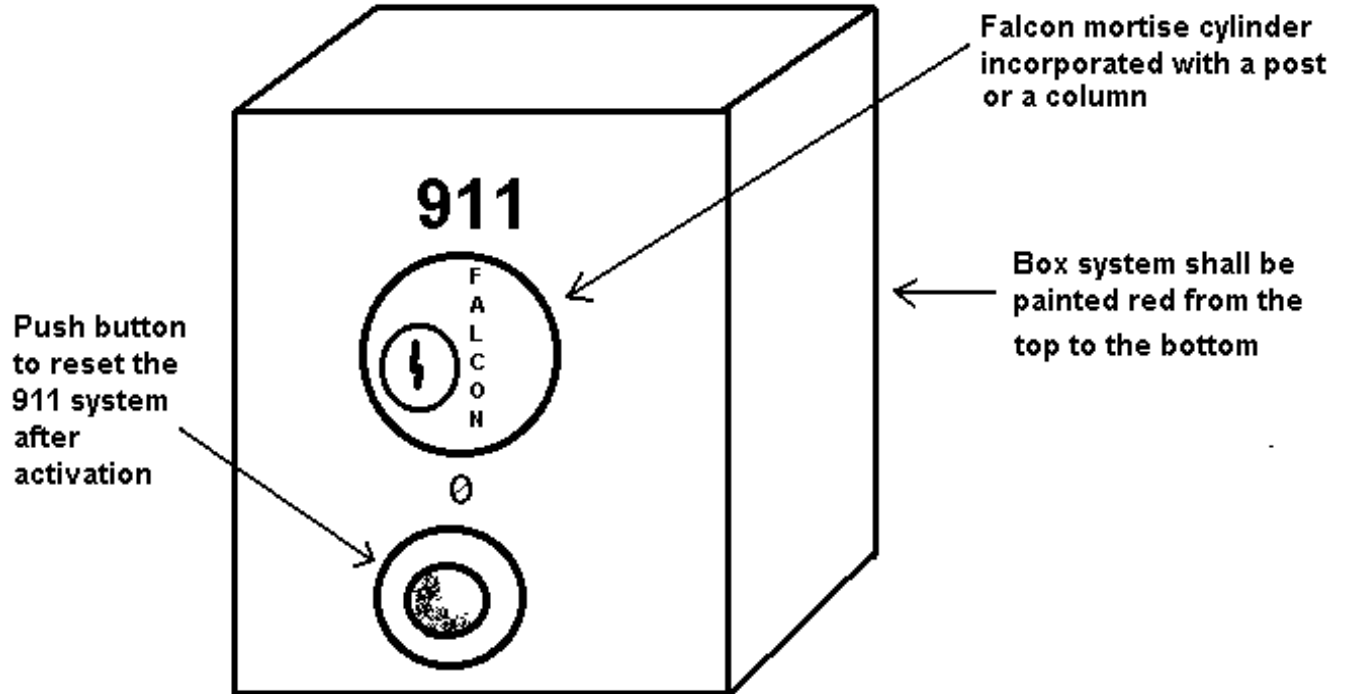
- 1) "9-1-1" Mortise Box shall be totally enclosed with a mortise cylinder facing the drive (as an emergency vehicle would view on approach.)
- 2) System shall be incorporated with the entry system and mounted not less than 5 feet in height from the road surface. The road surface is the private street, private drive or access road.
- 3) Operators with no entry systems shall be placed on the gatepost or the column and mounted 42 inches in height.

For examples of "9-1-1" Mortise Boxes see Enclosure No. 1.

Enclosure No. 1 "9-1-1" Mortise Cylinder Boxes

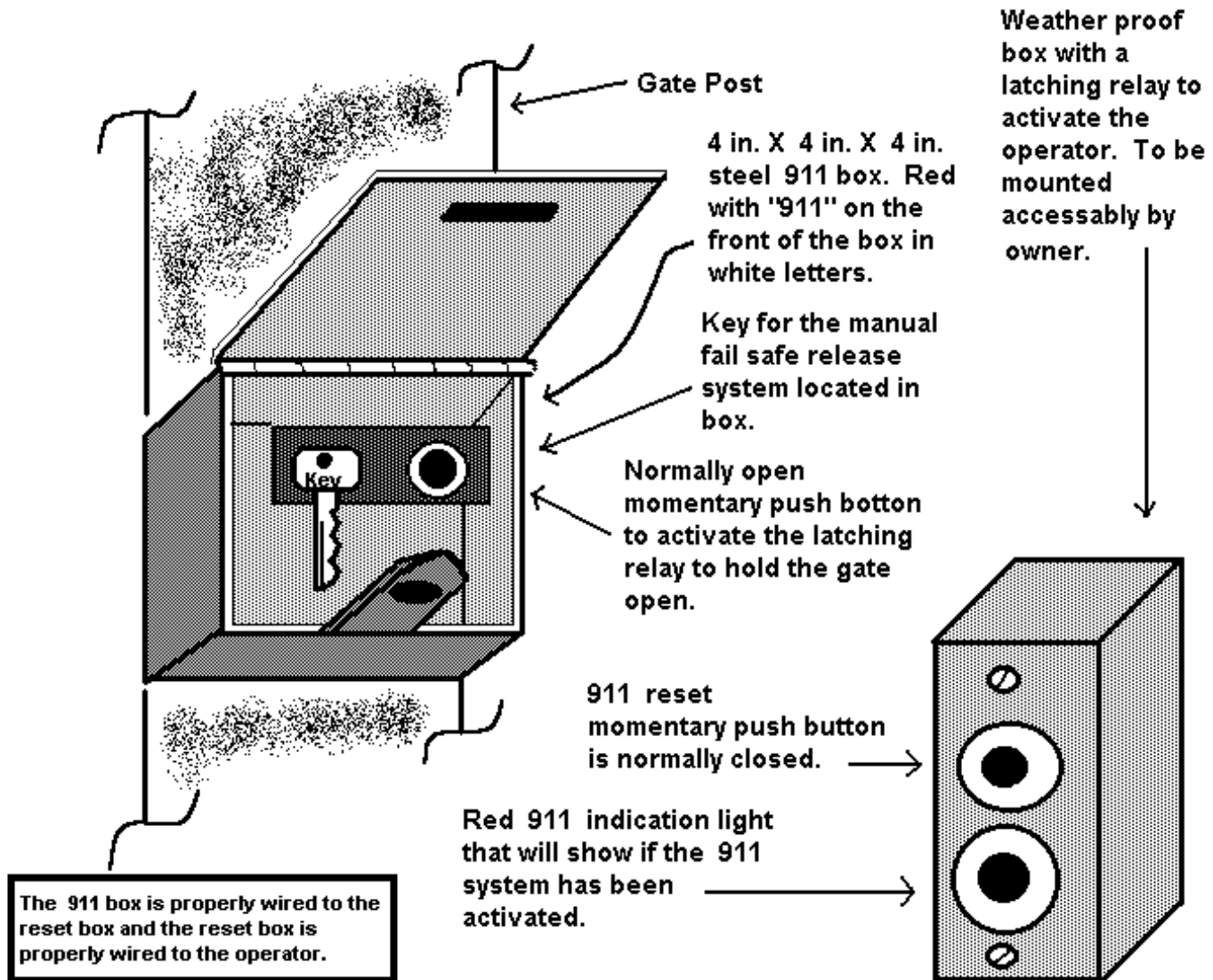


Enclosure No. 1 "9-1-1" Mortise Cylinder Boxes (Cont.)



APPENDIX F

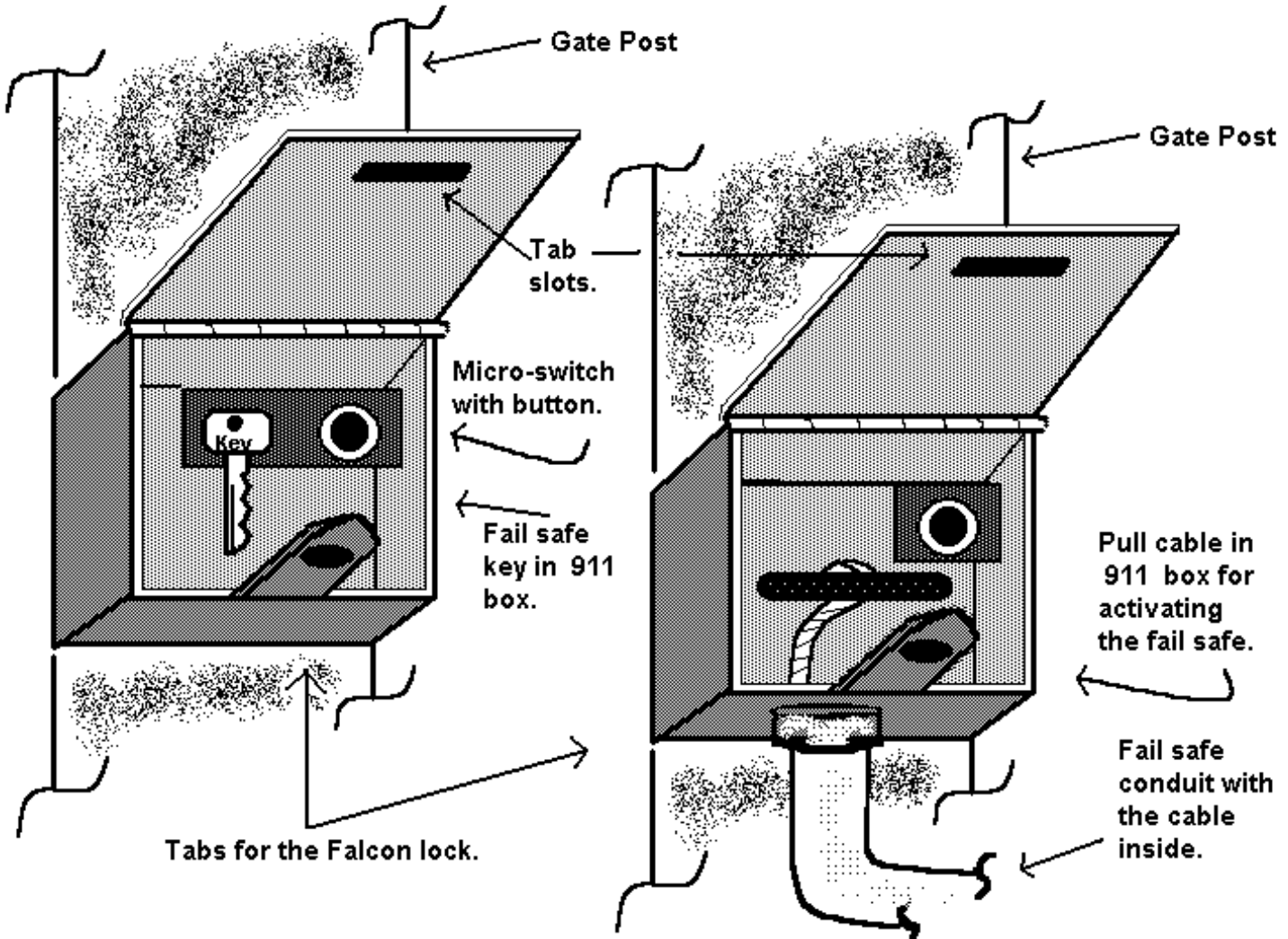
"9-1-1" BOX AND "RE-SET" BOX



APPENDIX G

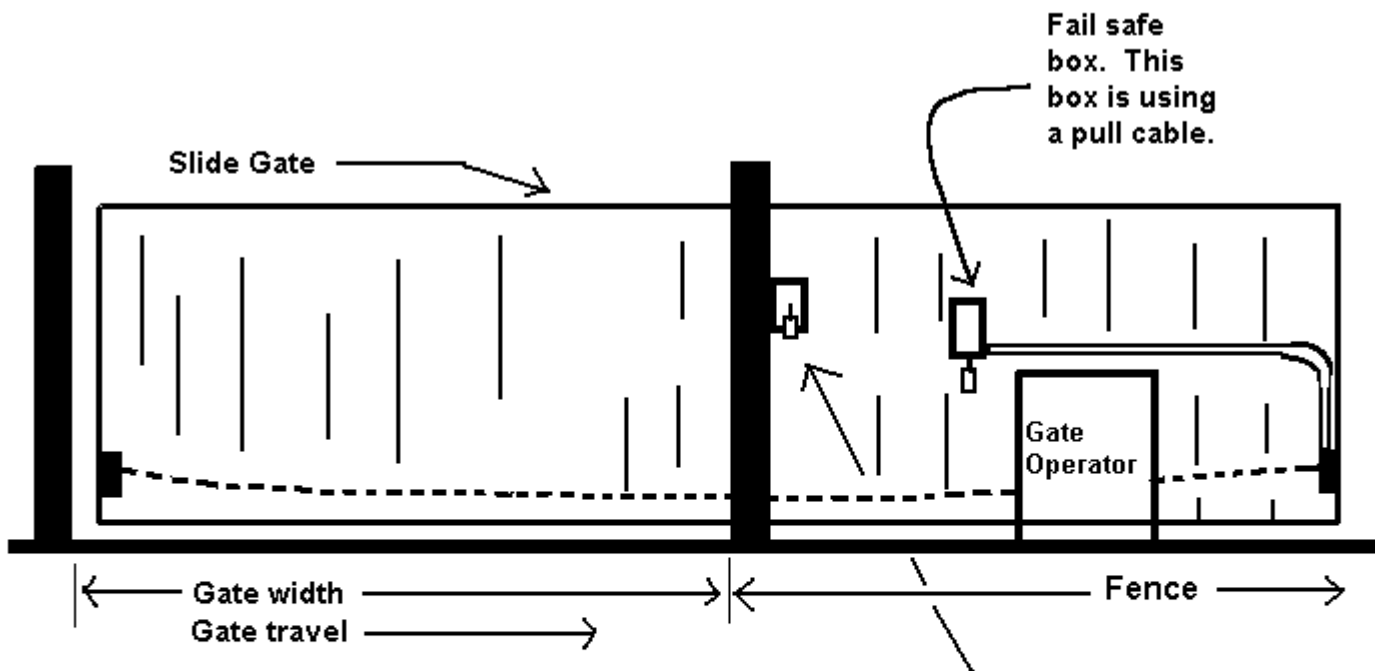
AUTOMATIC SYSTEM USING A MICRO-SWITCH

'911' box is mounted on the gate post, facing the public street at five (5) feet above the ground level, or at the highest point on any gate post under five feet.



APPENDIX H

“9-1-1” AND “Fail-safe” system on electric gates



'911' box has the switch inside that will open the gate electrically. The box will also contain the key that will release the lock on the fail safe box.

The '911' box is equipped with a FALCON lock.

Note: The gate width opening is at least the same as required for the width of the street, drive or access way.

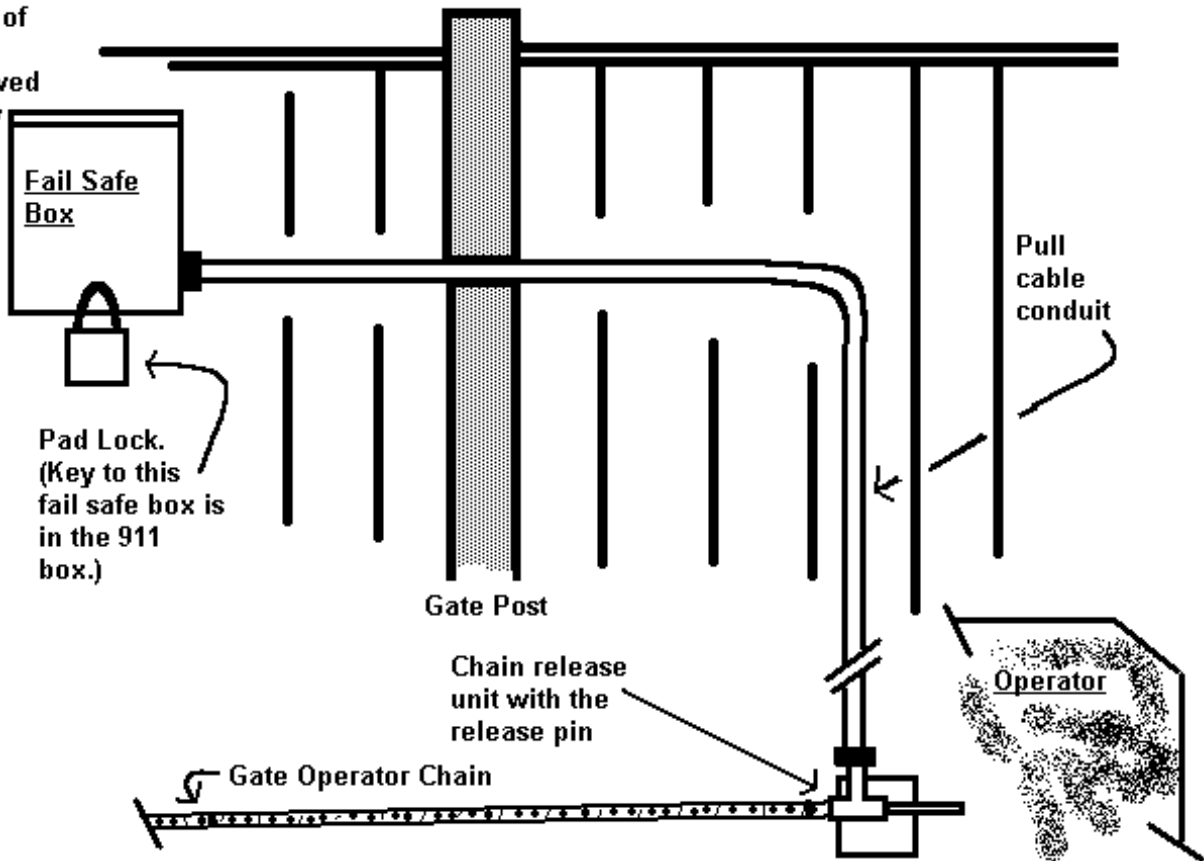
APPENDIX I

“Fail-safe” CABLE ASSEMBLY ON ELECTRICALLY OPERATED SWING GATE

The fail safe box is mounted on the entrance side of the fence as would be viewed by emergency responders.

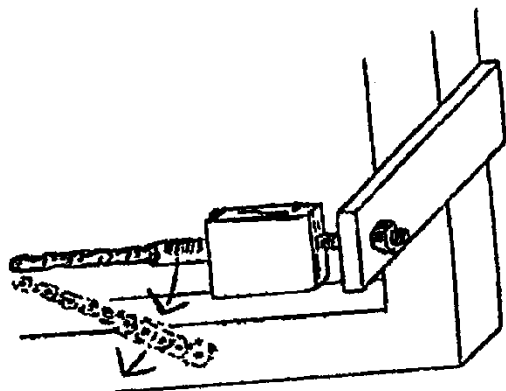
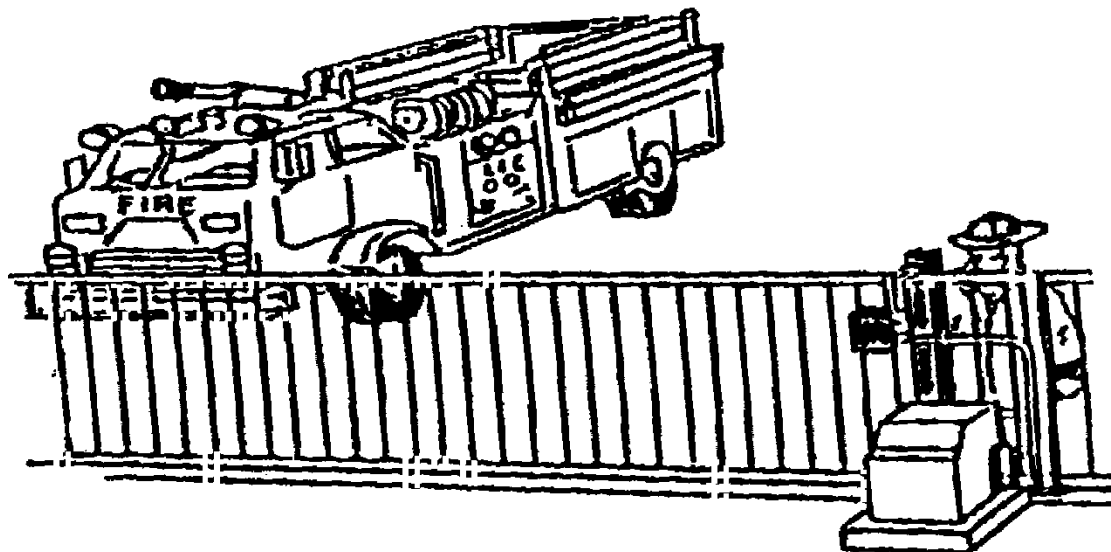
The cable in the box runs to the chain release unit. When pulled, the chain will drop.

Pad Lock. (Key to this fail safe box is in the 911 box.)



APPENDIX J

“Fail-safe” EMERGENCY ILLUSTRATION



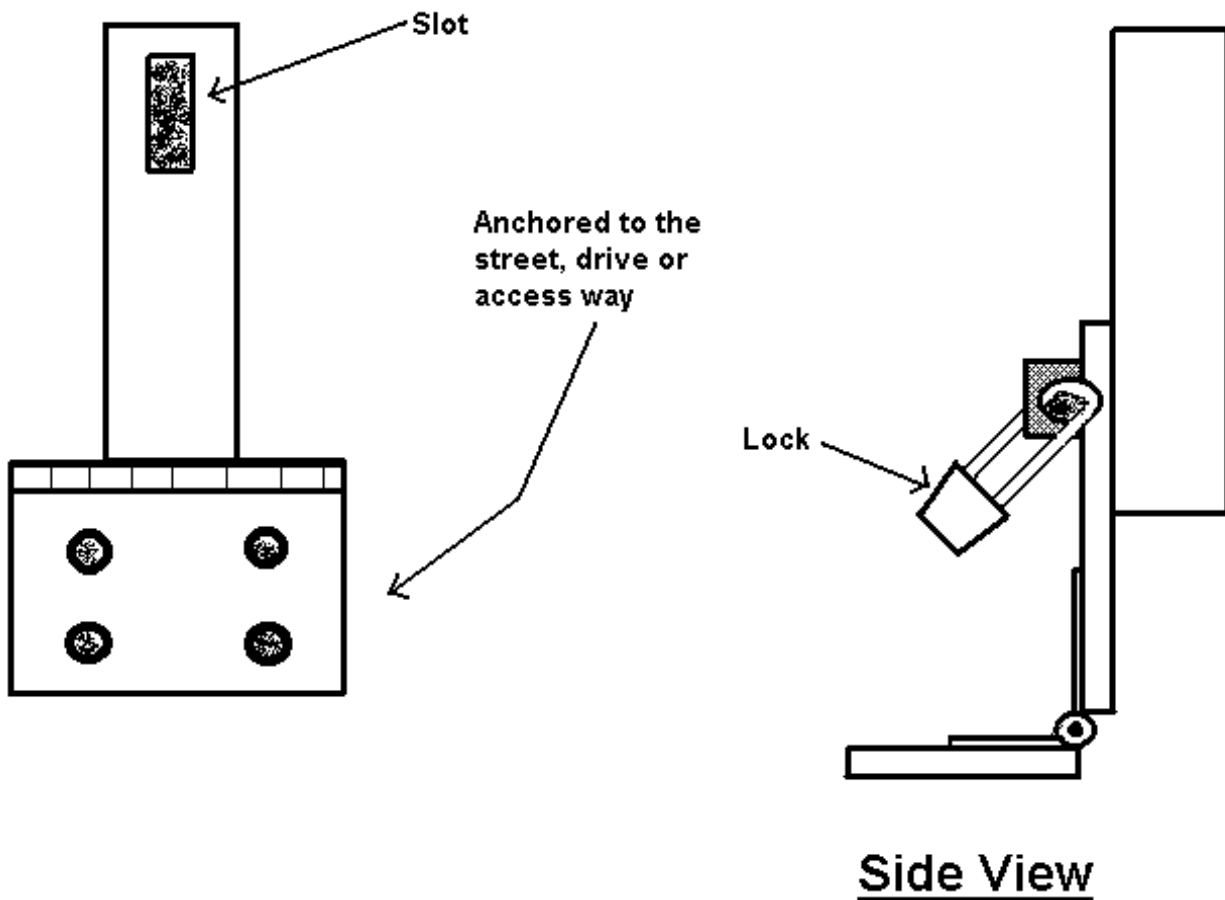
In this illustration the firefighter or other emergency responder unlocks the Falcon Lock located on the “9-1-1” Box. He will pull the handle on the cable that causes the gate operator chain to be released as shown in the lower drawing.

At this point, the emergency responder will manually open the gate for emergency access. The gate is required to open allowing the full-required width of the street, drive or access road to be available for use.

APPENDIX K

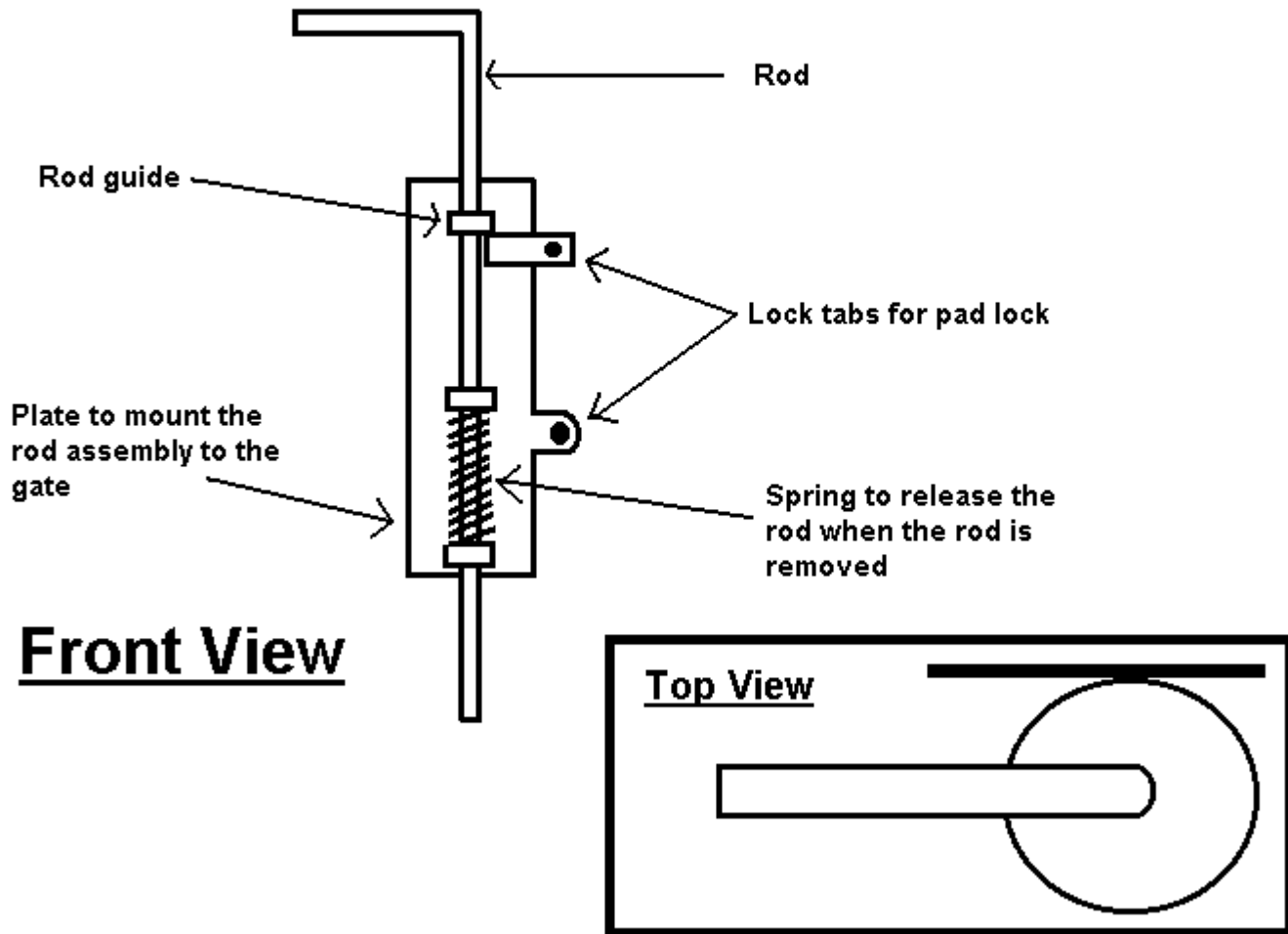
FOLD DOWN HINGE SYSTEM

To operate the gate, remove the lock by using a key located in the “9-1-1” Box. The hinge will fall forward (towards the property) and will lie flat on the street, drive or access road. The gate will open automatically by a spring or counter weight and then will catch on the ‘Duckbill’ catch.



APPENDIX L

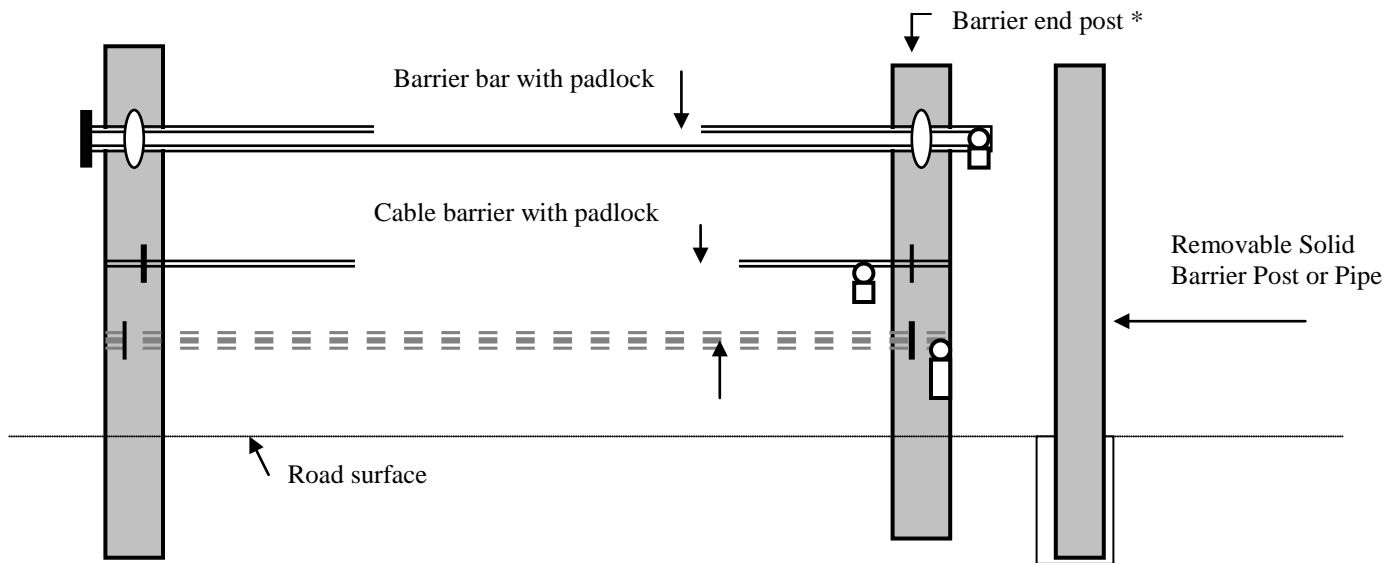
SPRING-LOADED "DROP ROD" ASSEMBLY



APPENDIX M

ACCESS CONTROL BARRIERS

Any device or construction that restricts a fire department access road. Examples of devices or construction below:



*An approved “9-1-1” Box shall be provided, on the non-movable barrier post at the lock end of the barrier, containing the key for the lock or a release mechanism to open the barrier. (See Appendix F for description of “9-1-1” Box.)

Note: The barrier system is required to open allowing the full-required width of the street, drive or access road to be available for use. All swinging barriers shall be provided with a ‘Duckbill’ catch or similar hold-open device that must be manually released.

APPENDIX N

Performance Standards

**“9-1-1” Gate Procedures Meeting the Optional
Performance Standards
City of Houston *Code of Ordinances* Section 42-235**

**Fire Department Access
City of Houston *Fire Code***

Private streets are 28 feet wide. Access roads less than 28 feet but not less than 20 feet in width may be considered provided that compliance with the *Performance Standards* have been met and approved by the City of Houston *Planning and Development Department*.

Where can I find the performance standards?

The performance standards come from the City of Houston *Code of Ordinances* Section 42-235.

To use this option you must also be familiar with the requirements of Division 6, Multi-Family Residential Developments *regarding private streets*.

Can I install equipment inside the width of my access road under the Performance Standards?

Access roads of 26 feet or less shall not have obstructions within the width of the access road under the requirements of the Performance Standards.

This means that card readers, telephone entry devices, remote control devices, and other equipment shall be installed in a manner referred to as a “*European Entry*”. This means that the street is free and clear of obstructions. Equipment may be installed within the curbside area.

APPENDIX O

PROCEDURE FOR SUBMITTAL FOR GATE (BARRIER) APPROVALS

STEP 1:

1. **Applications** - Make application at the City of Houston Permit Office, 3300 Main Street; telephone: 713-535-7897, for the following approvals:

a) Installation of "9-1-1" Access Control Gate/Barrier
(Application made by the installer of the gate or barrier)

Or,

b) Access Control Gate/Barrier, to maintain (operate) "9-1-1" Gate/Barrier
Note: This is an annual permit (must be renewed every year).
(Application made by property management or owners)

2. At the Permit Office, furnish a *Deed Restriction and Law Compliance Affidavit* and the information for the permit application.

Note: The signature on the affidavit and on the permit must be the same individual.

Step 2:

Obtain the *Plot plan* of the property or a letter from the City of Houston Planning Department. City Planning is located downtown at 611 Walker Street.

Step 3:

Provide 3 sets of *plans* that shows all entrances and access points to the property from the public street(s).

Plans must show dimensions and information such as:

- Width of the gate/barrier openings.
- Type of gate/barrier operation: (slide, swing, cable, chain, etc.)
- Distance from the access roads to the gates/barriers.
- Distance from the gate to the reader.
- Location of the reader.
- Location of the "9-1-1" Box, with **WHITE** (9) (1) (1) numbers on the box contrasting to the **RED** "9-1-1" Box.
- Location and type of the hold-open devices. (Gates shall automatically open and remain open until closed manually.)
- Location and type of the automatic opening device(s).
- Names of the public streets in the immediate area.

- Or any other necessary information.

Step 4:

Provide a “Letter of Explanation” that fully explains the type of operation and “Fail-safe” system.

Note: *No electronic or battery back up “Fail-safe” operation shall be used. All “Fail-safe” operations shall be MANUAL.*

Step 5:

Take the paid copy or receipt that you should have received at the Permit Office and the letter or plat drawing obtained from the City Planning Department (611 Walker Street), along with 3 drawings (referred to as plans above), and your “Letter of Explanation”, to the Senior Fire Inspector, at the Fire Marshal’s office, located at Fire Station # 70, 11410 Beamer Road.

See a clerk to have your paperwork placed in the inter-office mail for the Senior Inspector over “9-1-1” Gate/Barrier plans review.

After being delivered to Fire Marshal’s office, the paperwork will be forwarded to the Senior Inspector. Plans are reviewed according to the order that they are received.

Plans will be approved or they will be disapproved. You should be notified within one to two weeks after the date that the plans are received. If you have any questions or require further information or assistance you may contact the Fire Marshal’s office to obtain the phone number for the fire prevention inspector reviewing the “9-1-1” Access Gate/Barrier plans for approval.

APPENDIX P

KEY BOXES

Figure No. 1 -Typical Key Box / “9-1-1” Box (Open, with padlock removed)

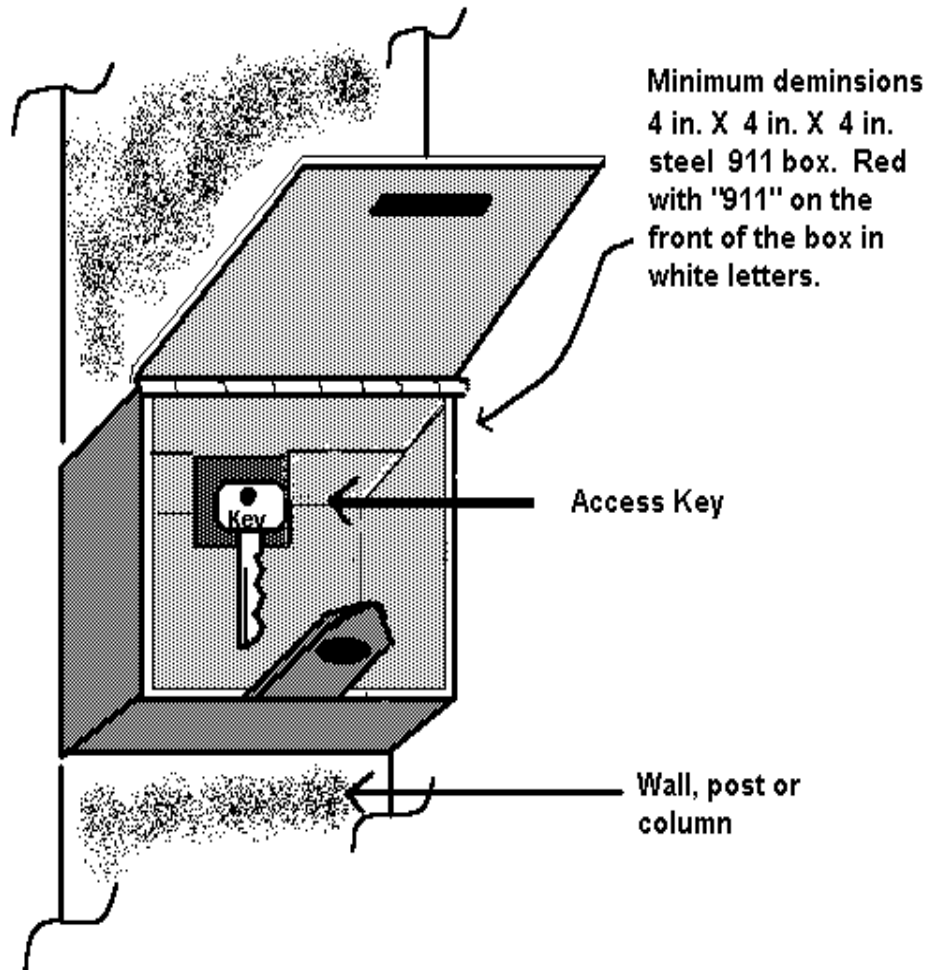


Figure No. 2 - Typical Key Box / "9-1-1" (Box closed with padlock)

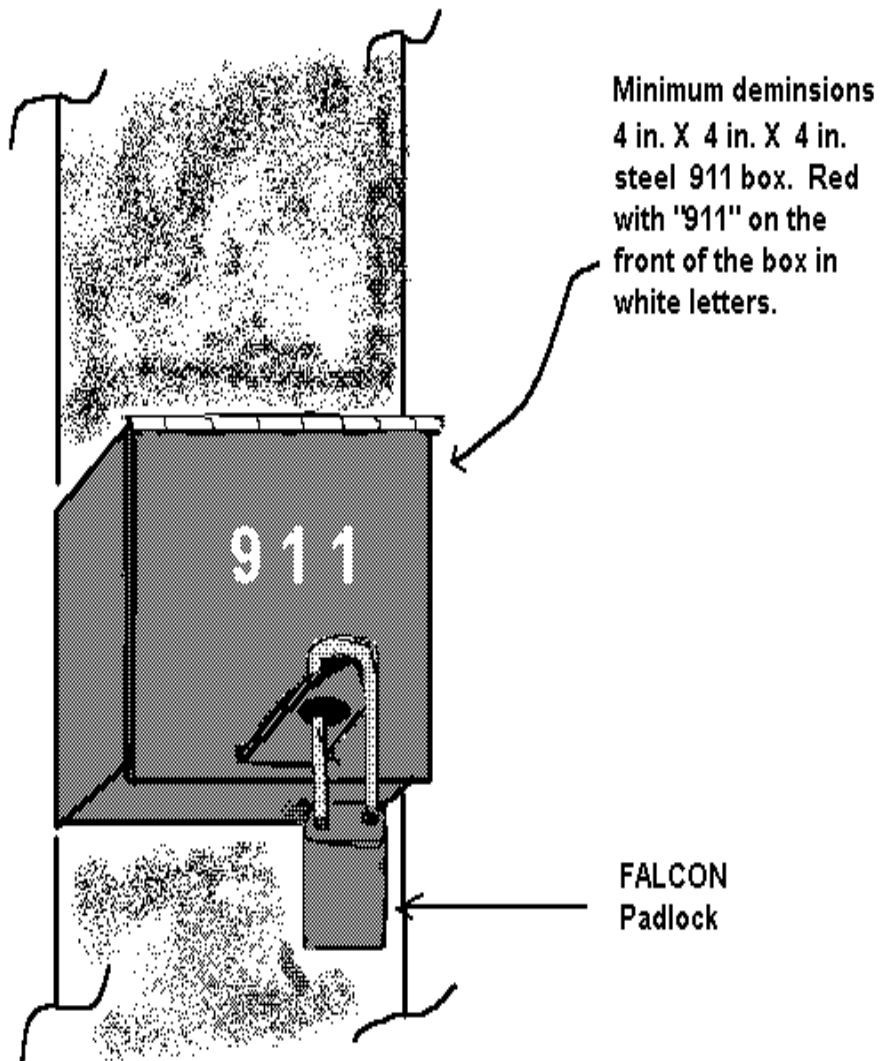
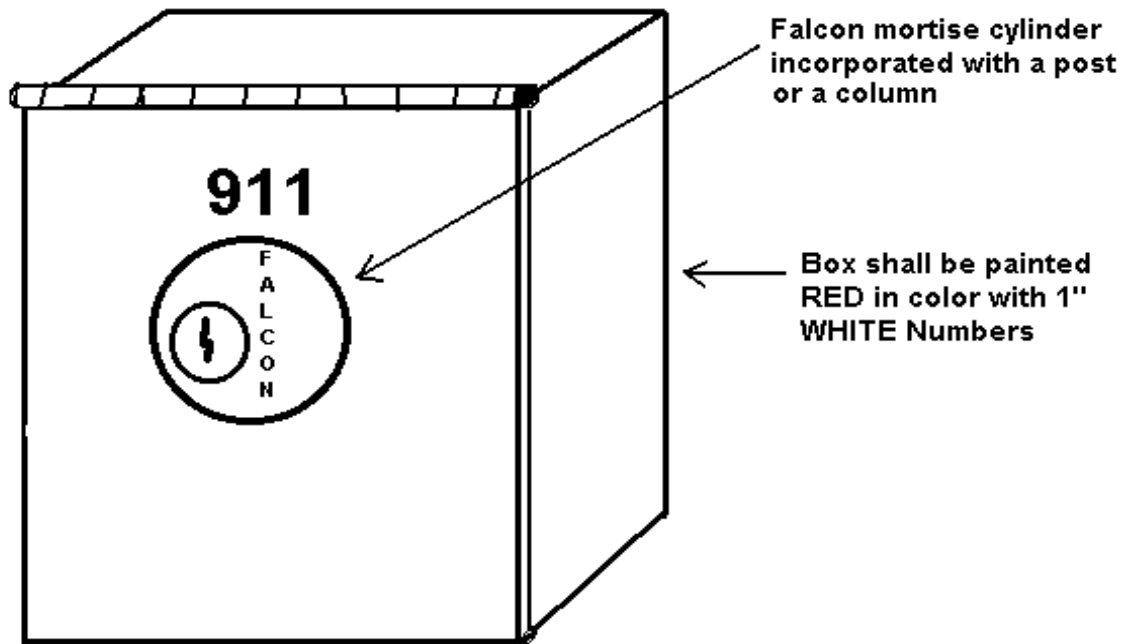


Figure No. 3 – Key Box / “9-1-1” Box with FALCON Mortise Cylinder



REFERENCES

1. City of Houston *Fire Code*, International Fire Code, 2006 edition, as amended.
2. City of Houston *Code of Ordinances*, Section 42-235.