

# Locksets and Access Control

## F.1 LOCKSETS

The University, with the exception of the Housing Division which uses a Best 7-pin system, utilizes a Corbin Russwin 7-pin IC Core keying system. Locksets shall accommodate University purchased and installed cores. Corbin Russwin IC Core capable cylinders and handles are to be provided by the vendor.

Facilities Management lock shop personnel shall accomplish the procurement, keying and installation of cores. Construction cores may be installed by the contractor during construction, but will be removed prior to beneficial occupancy. Construction cores will become the property of the University.

Locksets shall be extra heavy-duty, 7-pin IC manufactured by Corbin/Russwin, Best or Yale. All interior locksets shall have lever handles, removable core cylinder mortised-style locks in the Corbin ML2000 series, LWA Design less core (CL7 or C7), or similar designs in Best and Yale.

Classroom, lecture hall, teaching laboratory and laboratory corridor access doors shall be equipped with locksets enabling occupants to readily secure door(s) from within the room. The basis of design for these locksets is Corbin/Russwin model ML2067, apartment function (deadbolt by key outside or by thumb turn inside, inside grip simultaneously retracts latch bolt and deadbolt permitting egress without unlocking door).

For classrooms, lecture halls and assembly rooms requiring more than one exit, electronic locking shall be provided from (a) University-agreed switch location(s) within these spaces, including where occupancy loads or agreed design parameters require panic hardware.

All panic hardware devices shall be heavy-duty, grade 1 push bar type capable of accepting a Corbin 7-pin, IC core cylinder (Best 7-pin IC core cylinder in housing projects), through bolted with six bolts where possible, manufactured by Von Duprin, Corbin/Russwin or Sargent. The basis of design for panic hardware is Von Duprin model 9900 (and 9900E where electronic locking is applicable). Where electric latch retraction is required, exit device shall be Von Duprin EL98/99 or EL 33/35 series, no substitution.

See 1.4.3.5 Electronic Access Controls in University of Virginia's 2018 Facility Design Guidelines for major entrances.

Unless exempted by an approved Determinations and Findings Report, exterior doors serving students, faculty, staff and general public are to be card reader controlled. University student, faculty and staff identification systems are 24 VDC.

Hardware finish shall be Builder's Hardware Manufacturing Association (BHMA) 630.

Use of combination locks is prohibited (as of January 2017). Upon failure of existing locks, the decision to replace existing locks or recommend access controlled locks will be at the FM locksmith's discretion.

## **F.2 HEALTH SYSTEM DOOR LOCKING HARDWARE WITH ELECTRONIC ACCESS CONTROL**

When utilizing the following types of electronic access controls, use of the specified manufacturer and model is required to coordinate with existing electronic access control systems.

1. Single Door without Power Assist Device
  - a. Electric Strike (Modified Frame)
    - i. Full mortise lock and lever (Corbin-Russwin ML 2000 Series)
    - ii. Electric strike (Folger Adams 712-75 Electric Strike)
  - b. Electric Lock: Full mortise with request to exit function (Corbin Russwin ML 200901 ECL)
  - c. Exit Door: Request to exit and panic bar with electric latch retraction (Von Duprin EL99NL)
2. Double Door without Power Assist Device
  - a. Electric Mortise Lock: Full mortise and vertical rod device combination (Von Duprin EL99 Concealed Vertical Rod)
  - b. Exit Device with Electric Latch Retraction: Two vertical rod devices, same direction with no overlapping astragal (Von Duprin EL99 Concealed Vertical Rod)
3. Double Door with Power Assist Devices
  - a. Door operator action initiated by card reader and wall plate
    - i. Auto opener, sensor and touchless wall plate (Horton)
    - ii. Two vertical rod devices, same direction with no overlapping astragal (Von Duprin EL99 Concealed Vertical Rod)
  - b. Door operator action initiated by card reader action only
    - i. Auto opener, sensor and relay for instant and delayed action (Horton)
    - ii. Two vertical rod devices, same direction with no overlapping astragal (Von Duprin EL99 Concealed Vertical Rod)
4. Dual Door (egress both directions) without Power Assist Device
  - a. Card Reader Unlock
    - i. Concealed vertical rod device on secure side with no overlapping astragal (Von Duprin EL99 Concealed Vertical Rod)
    - ii. Concealed vertical rod device to meet requirement for special locking arrangement of non-secure side with no overlapping astragal (Von Duprin Chexit Controlled Exit Device, Board Contains Infinite Delay)
  - b. Door Operator action initiated by card reader action only
    - i. Auto opener, sensor, and relay for instant and delayed action (Horton)
    - ii. Two Vertical Rod Deices, same direction with no overlapping astragal (Von Duprin EL99 Concealed Vertical Rod)
5. Access Control
  - a. Readers are to be HID R40 for wall mount; HID R10 for mullion mounted
  - b. All reader request should be directed to the Manager Clinical Engineering Services

## **F.3 ACADEMIC DIVISION DOOR LOCKING HARDWARE WITH ELECTRONIC ACCESS CONTROL**

When utilizing the following types of electronic access controls, use of the specified manufacturer and model is required to coordinate with existing electronic access control systems.

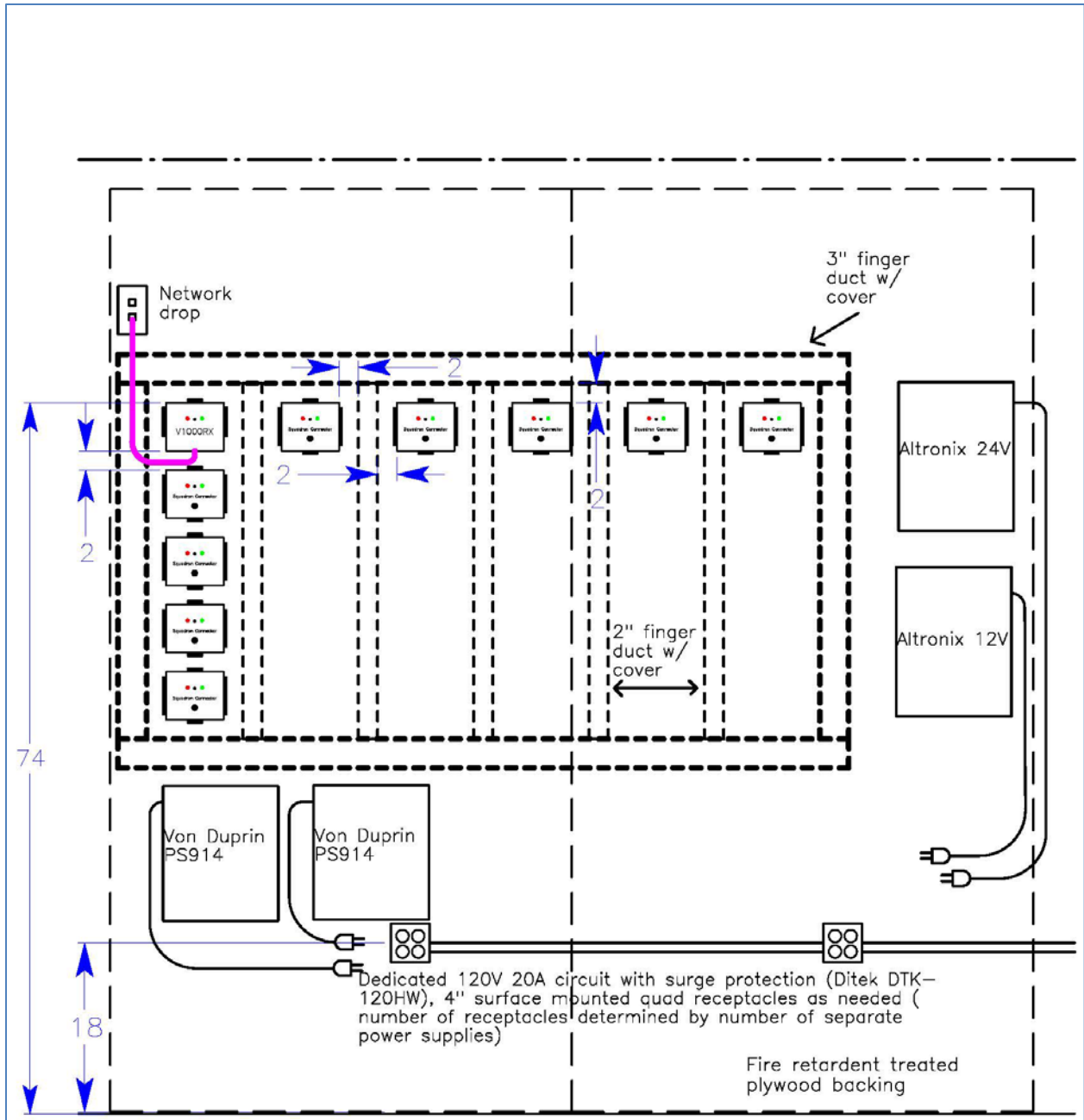
1. Electric strike for mortise & cylindrical locks: Von Duprin 6000 series
2. Electric strike, surface mount for rim exit device: HES Genesis series 9600, 9500, or 9400 (surface mounted for use with rim exit device)
3. Electric mortise lock:
  - a. Academic buildings: Corbin Russwin ML20900 series with M92 option (request to exit)
  - b. Residence Halls: Best 45HW series with DEU (fail secure) and IDH (integrated door hardware) options
4. Electric cylindrical lock
  - a. Academic buildings: Corbin Russwin CL33900 series with M92 option (request to exit)
  - b. Residence Halls: Best 9KW series with DEU (fail secure) and RQE (request to exit) options
5. Electric latch retraction exit device:
  - a. Von Duprin 98/99 series with QEL and RX options
  - b. Von Duprin 33A/35A series with QEL and RX options (for narrow stile doors)
  - c. Trim shall be night latch operation with lever handle, less cylinder
6. Electric trim (for use with Von Duprin exit device)
  - a. 98/99 series: E996L, night latch operation with lever handle, less cylinder
  - b. 33A/35A series: E360L, lever handle (cylinder unavailable)
7. Wireless Locks:
  - a. Schlage AD series locks and controls provided by University for installation by contractor
  - b. Schlage AD series (mortise, mortise-deadbolt, or cylindrical)
    - i. Classrooms, labs and offices: Function 70
    - ii. Classrooms requiring deadbolt for shelter-in-place: Function 40
    - iii. Residence rooms: Function 50
  - c. Schlage AD400-993 exit trim for Von Duprin 98/99 series
  - d. Credential Reader:
    - i. MSK (Residence Halls)
    - ii. MS (Academic)
  - e. Schlage wireless system accessories:
    - i. PIM400-485 Panel Interface Module
    - ii. GCK400/ECK400 Wireless Gate & Elevator Kit
    - iii. ANT400-REM Remote Antenna Module
8. Electric power transfer: Von Duprin EPT-10
9. Electrified hinge:
  - a. Butt hinge: Minimum of six conductors, two must be 18 ga
  - b. Continuous hinge: Section containing wires must be separate from main hinge, removable, and field replaceable

10. DC power supplies:
  - a. Altronix ALX1012ULXPD16 (12 Vdc)
  - b. Altronix ALX1024ULXPD16 (24 Vdc)
  - c. Altronix Maximal Series
11. Card Readers
  - a. Standard reader: Schlage aptiQ MT 11 or MT 15
  - b. Where keypad is required: Schlage aptiQ MTK15
  - c. Where backward compatibility with magstripe is required: Schlage aptiQ MTMS15
12. Custom modular access control cable, provided by University for installation by contractor:
  - a. Outer Jacket PURPLE color in LOW SMOKE/PLENUM with text "UVA Access Control: Call 434-982-5735"
  - b. Element #1: 22-08 Shielded PLNM, Yellow Stripe-text "Card Reader"
  - c. Element #2: 22-06 Nonshielded PLNM, Orange Stripe-text "Motion/REX"
  - d. Element #3: 22-04 Nonshielded PLNM, Green Stripe-text "Door Contact/Spare"
  - e. Element #4: 18-04 Nonshielded PLNM, Purple Stripe-text "Lock Power"
13. Access control system: CBORD Squadron®
  - a. EAC installer must provide evidence of training/certification in installation and wiring of CBORD Squadron® access control system
  - b. System configuration and architecture must be reviewed and approved by the University prior to installation
  - c. Squadron controls provided by University for installation by contractor
14. Electric surge suppression: AC circuits supplying electronic access controls must be protected with inline surge suppression. Ditek Corporation DTK-120HW
15. Relays
  - a. BEA BR3 programmable relay: Used with ADA operator to provide request-to-exit, door unlatch, and door open sequence from interior actuator.
  - b. Altronix RB1224 double-pole double-throw relay: Used with ADA operator to disable exterior actuator when door is locked.

## **F.4 CPTED RELATED FIXTURES**

<b>Figure F2: Squadron Controls in Enclosure.....</b>	<b>7</b>
<b>Figure F3: Single Door with Electric Strike.....</b>	<b>8</b>
<b>Figure F4: Single Door with Electric Lock .....</b>	<b>9</b>
<b>Figure F5: Single Door with Electric Trim .....</b>	<b>10</b>
<b>Figure F6: Single Door with Latch Retraction .....</b>	<b>11</b>
<b>Figure F7: Single Door with ADA &amp; Electric Strike .....</b>	<b>12</b>
<b>Figure F8: Single Door with ADA &amp; Latch Retraction.....</b>	<b>13</b>
<b>Figure F9: Double Door with Electric Strike .....</b>	<b>14</b>
<b>Figure F10: Double Door with Electric Lock .....</b>	<b>15</b>
<b>Figure F11: Double Door with Electric Trim.....</b>	<b>16</b>
<b>Figure F12: Double Door with Latch Retraction .....</b>	<b>17</b>
<b>Figure F13: Double Door with Latch Retraction Holder .....</b>	<b>18</b>
<b>Figure F14: Double Door with ADA Latch Retraction Storefront.....</b>	<b>19</b>

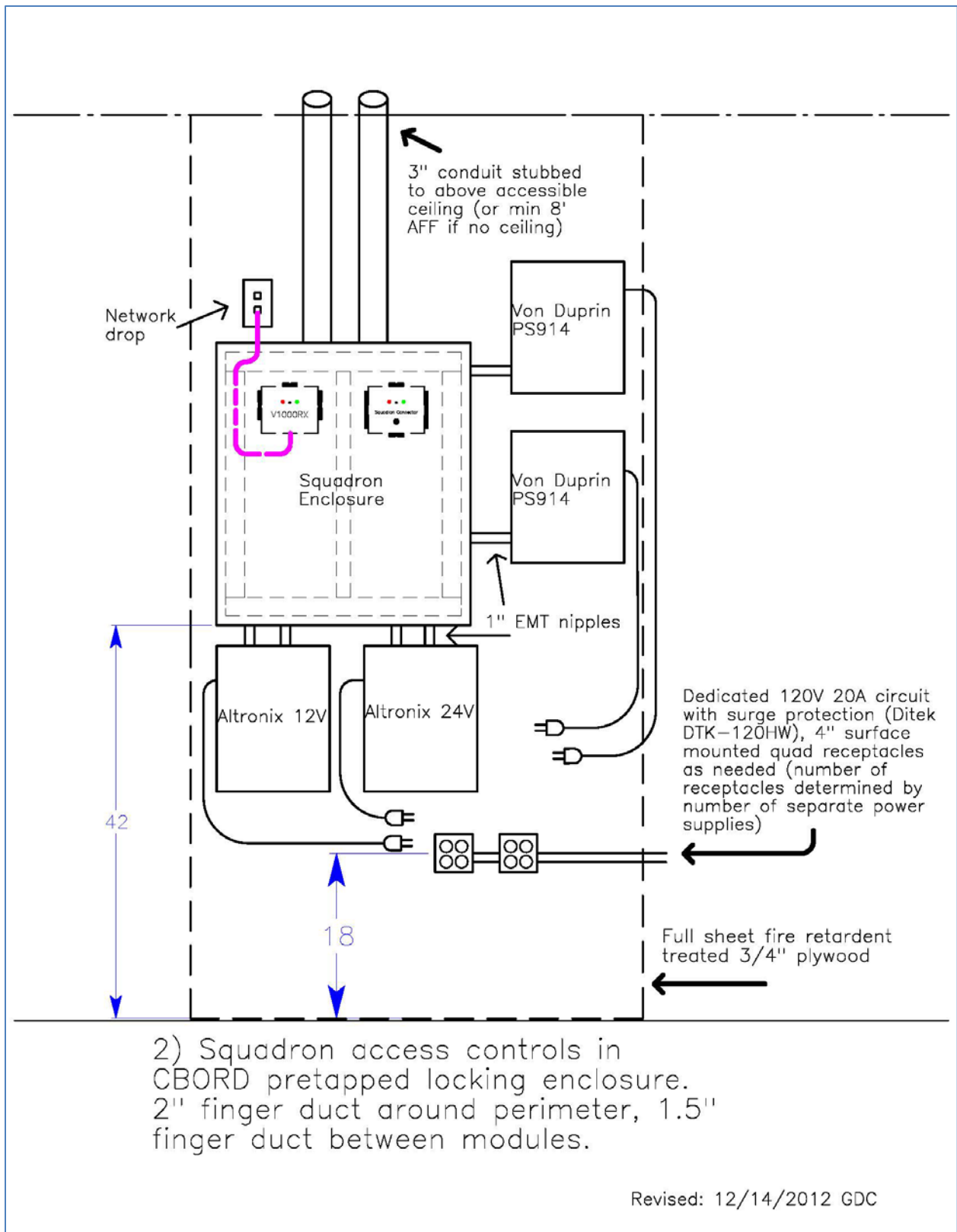
<b>Figure F15: Double Door with Ada Latch Retraction Raceway via Operator .....</b>	<b>20</b>
<b>Figure F16: Residence Room AD400 Lock .....</b>	<b>21</b>
<b>Figure F17: Wireless Lock with Local Alarm .....</b>	<b>22</b>
<b>Figure F18: Wireless Lock with Horn, Holder, and Closer .....</b>	<b>23</b>
<b>Figure F19: Overhead Door with Alarm .....</b>	<b>24</b>
<b>Figure F20: Double Door with ADA, Strike, Reader, Rex, and Horn.....</b>	<b>25</b>



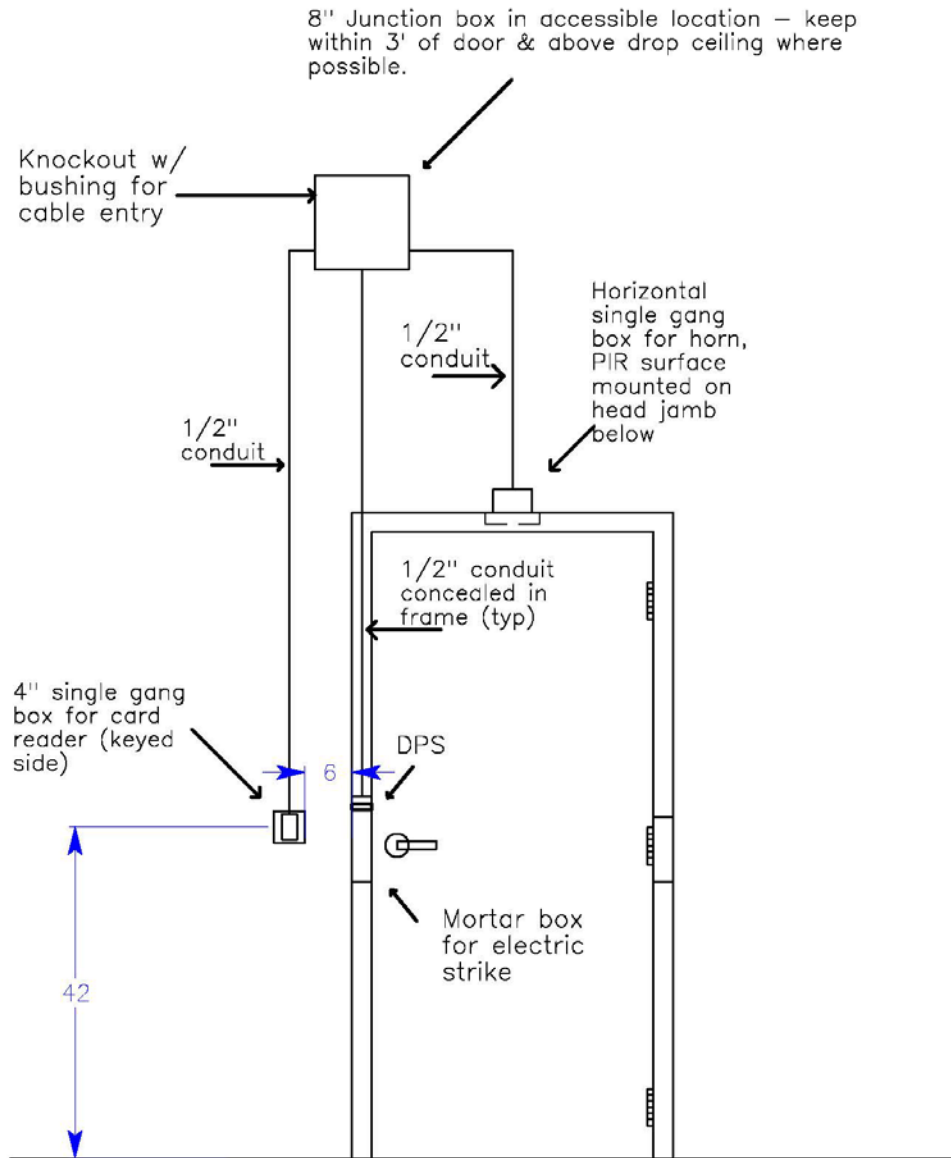
1) Squadron access controls, dedicated control closet. 3"x3" finger duct border, 2"x2" finger duct inner raceways, 2" clear around Squadron modules, max 74" to top of uppermost module.

Revised: 12/14/2012 GDC

**Figure F1: Squadron Controls Dedicated Closet**



**Figure F1: Squadron Controls in Enclosure**

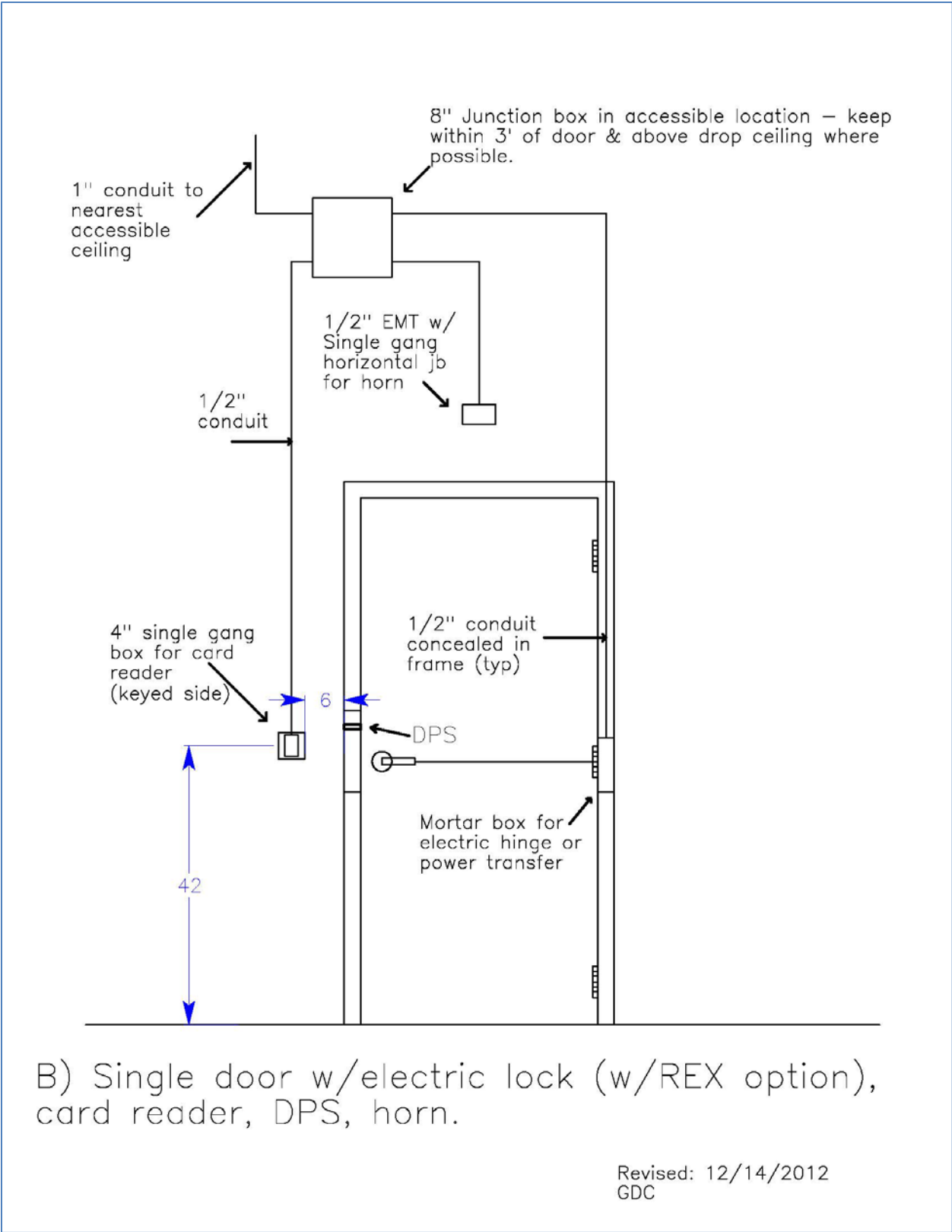


A) Single door w/electric strike, card reader, DPS, REX (PIR mounted on head jamb), and horn. If REX option is included in lock, add 1/2" conduit in hinge jamb, mortar box, and electric hinge or power transfer.

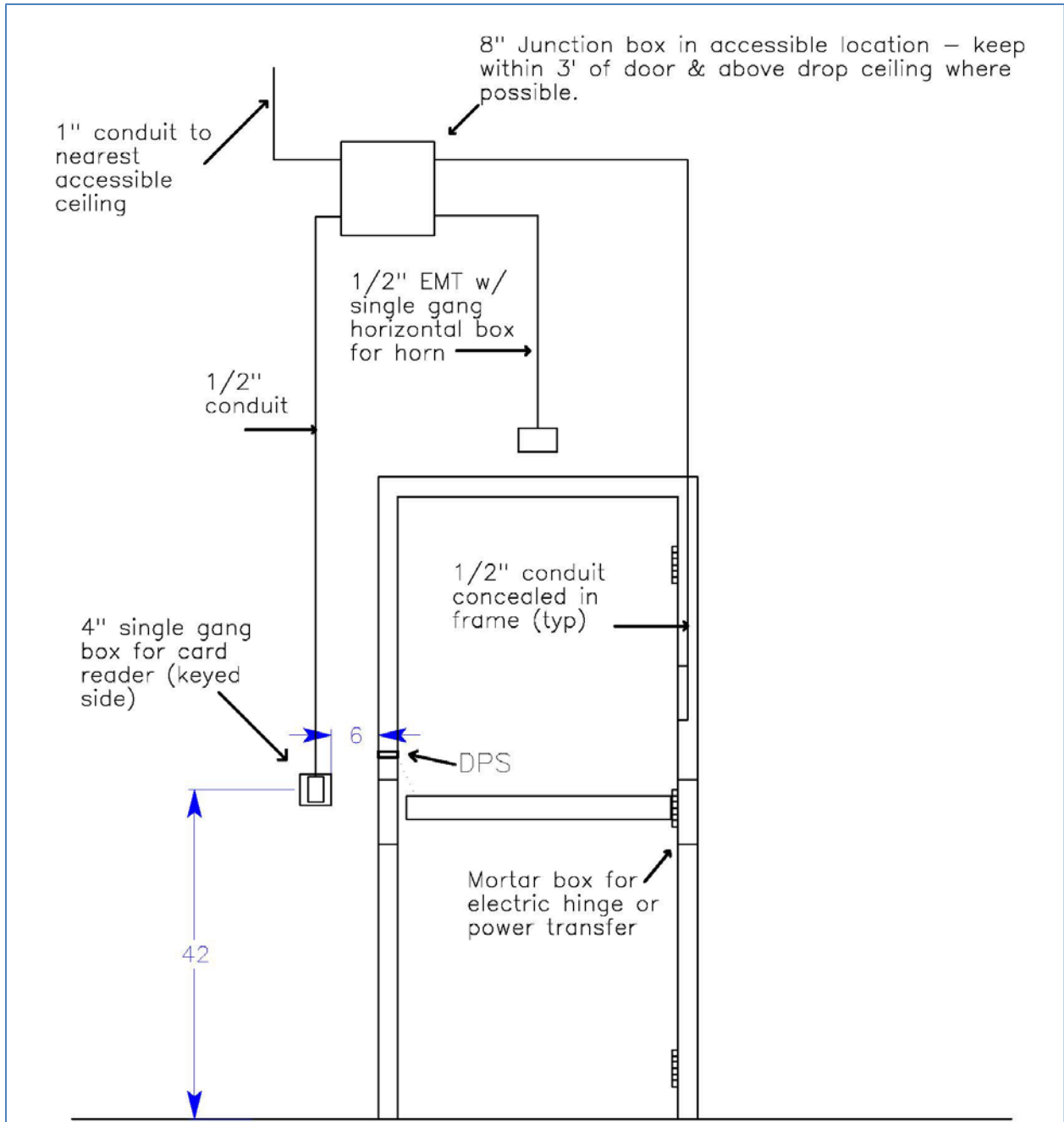
Revised: 12/14/2012  
GDC

**Figure F2: Single Door with Electric Strike**





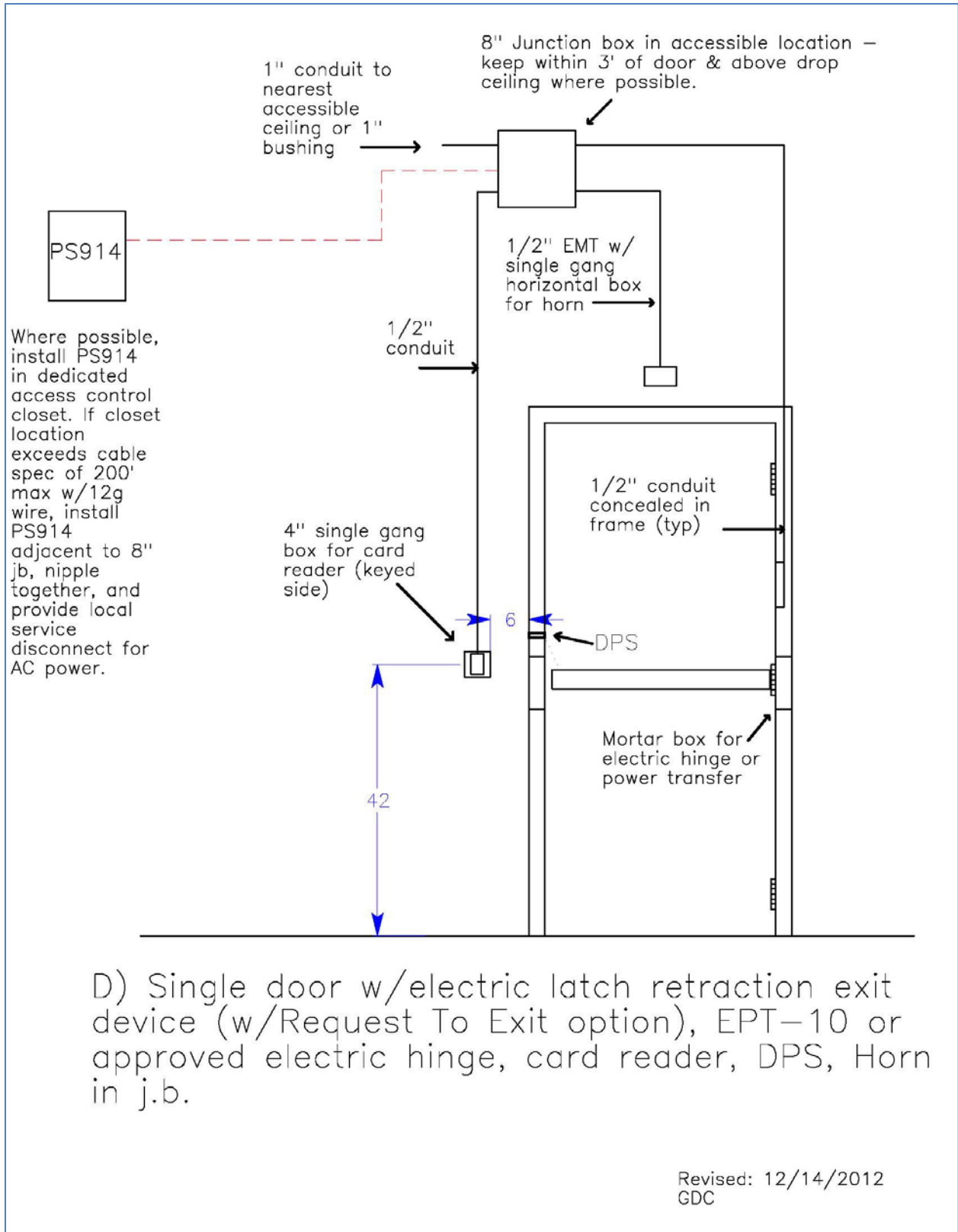
**Figure F3: Single Door with Electric Lock**



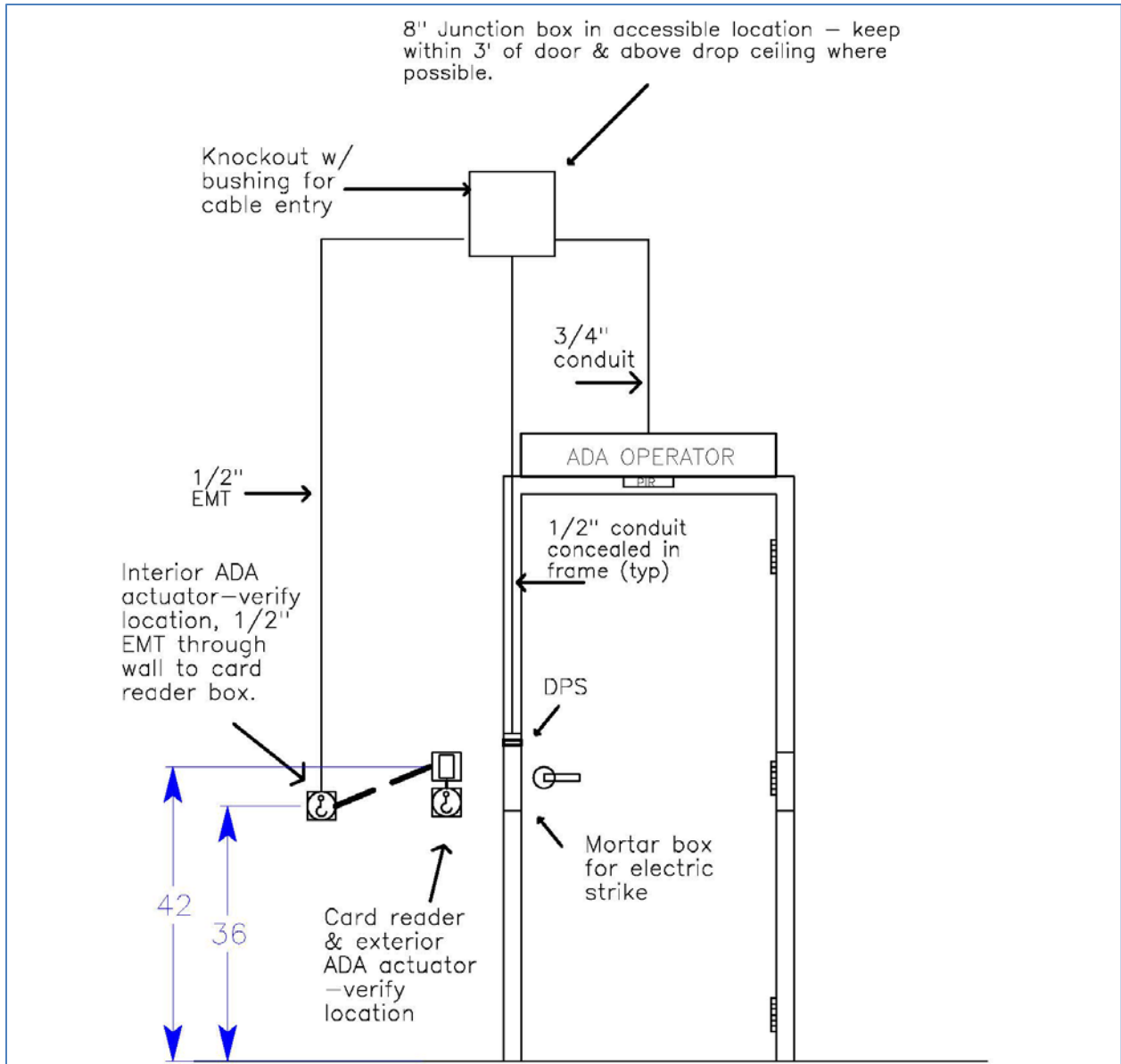
C) Single door w/electrified exit trim (w/ Request To Exit option), EPT-10 or approved electric hinge, card reader, DPS, Horn.

Revised: 12/14/2012  
GDC

**Figure F4: Single Door with Electric Trim**



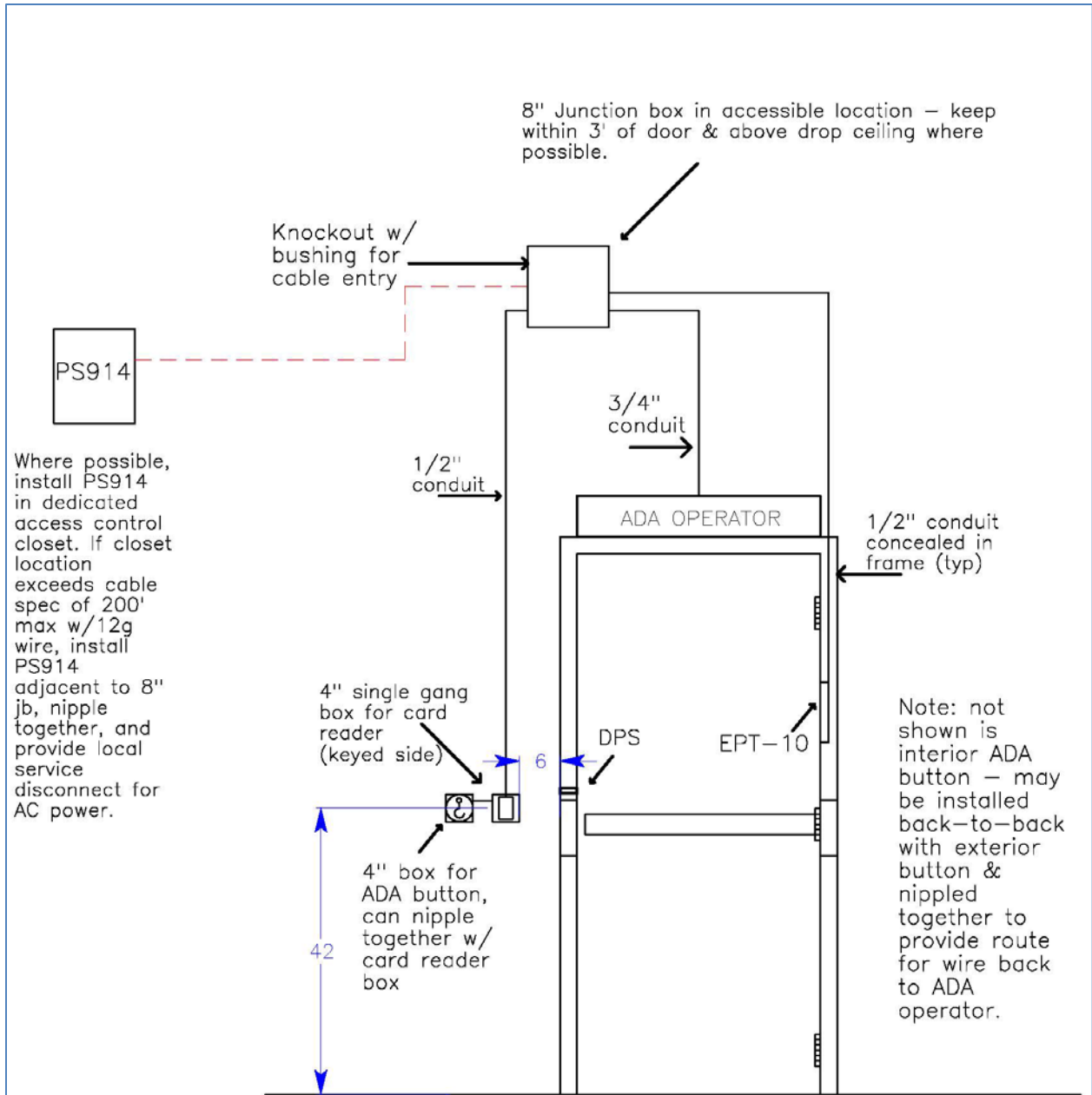
**Figure F5: Single Door with Latch Retraction**



E) Single door w/ADA operator, electric strike, card reader, DPS, REX (PIR mounted on ADA operator housing), and horn. If REX option is in lock, add 1/2" conduit in hinge jamb, mortar box, and electric hinge or power transfer.

Revised: 12/20/2012  
GDC

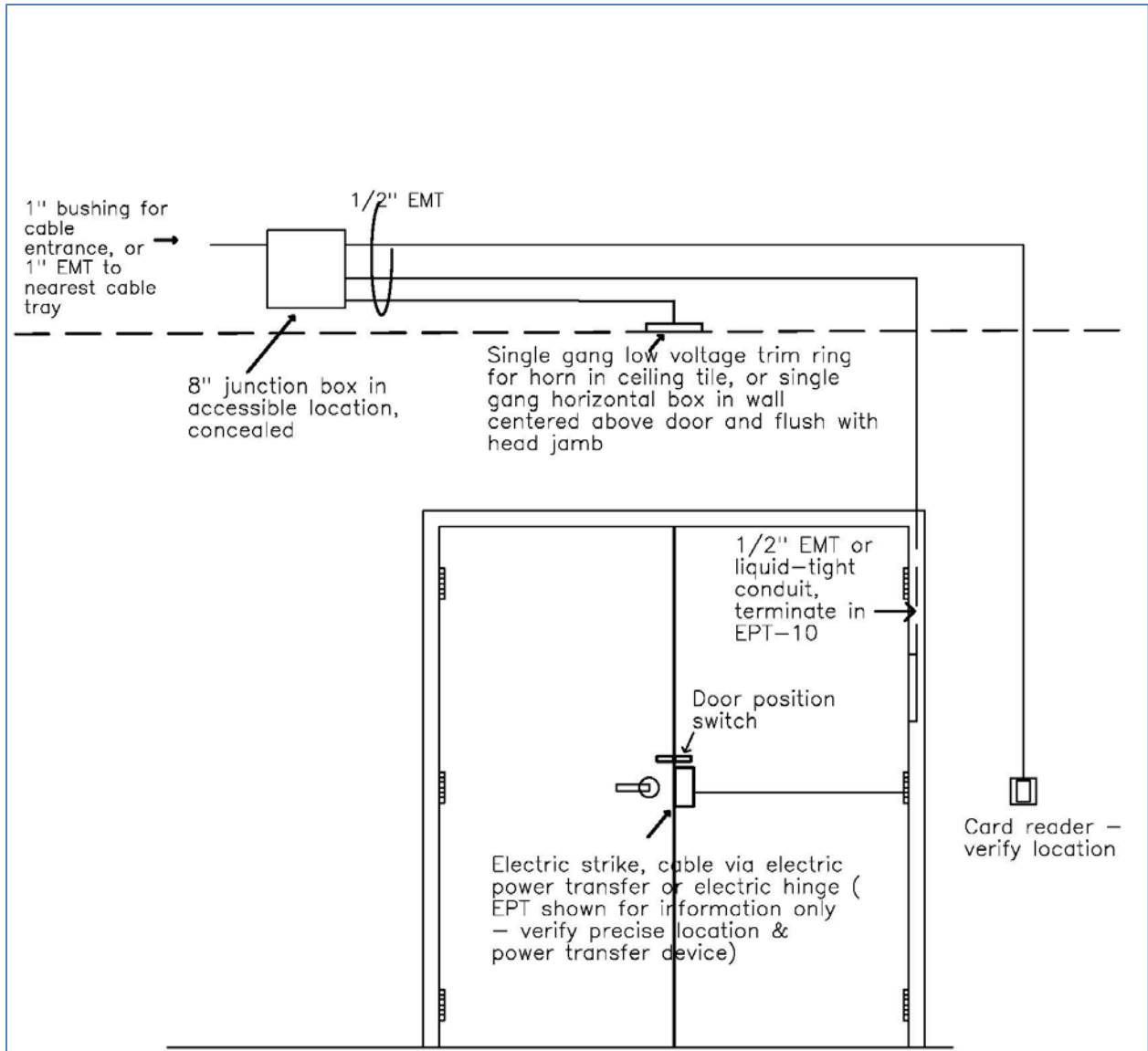
**Figure F6: Single Door with ADA & Electric Strike**



F) Single door w/ADA operator, electric latch retraction w/REX option, EPT-10 or approved electric hinge, card reader, DPS, and horn in operator housing.

Revised: 12/14/2012  
GDC

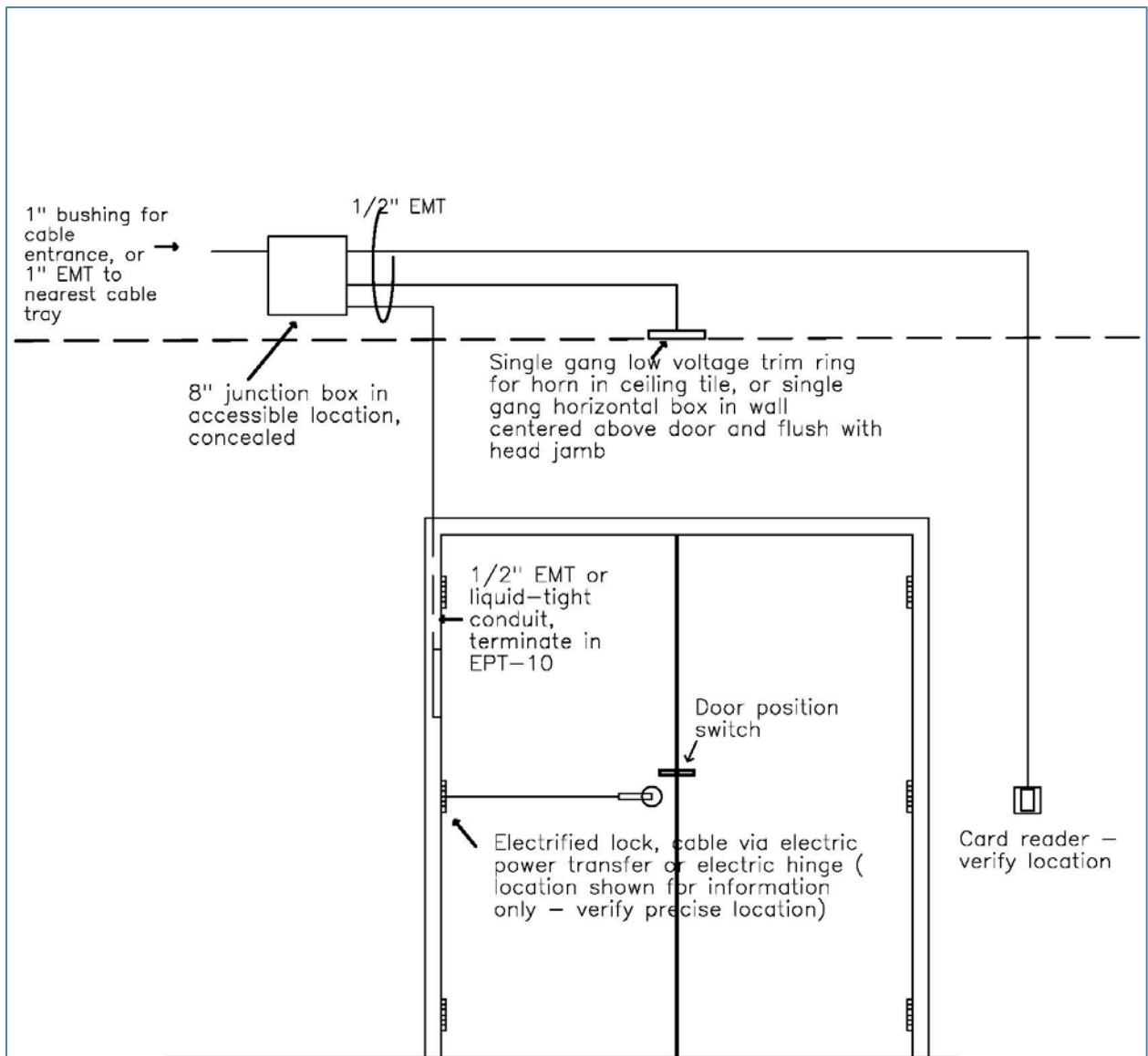
Figure F7: Single Door with ADA & Latch Retraction



G) Double door w/electric strike, card reader, DPS, REX (PIR in ceiling tile), horn.

Revised: 12/14/2012  
GDC

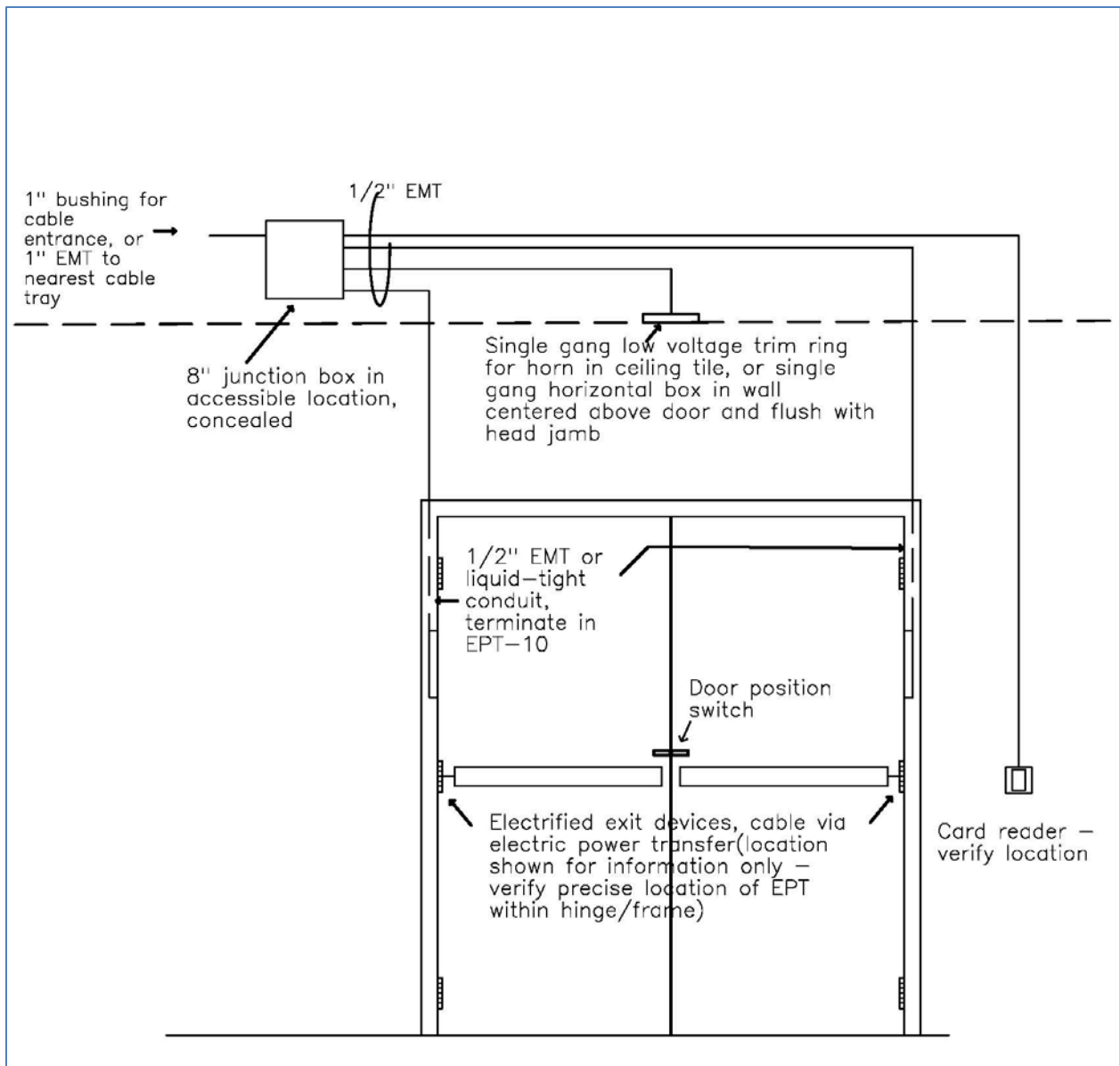
**Figure F8: Double Door with Electric Strike**



H) Double door w/electric lock, card reader, DPS, REX (in lock), horn.

Revised: 12/14/2012  
GDC

**Figure F9: Double Door with Electric Lock**

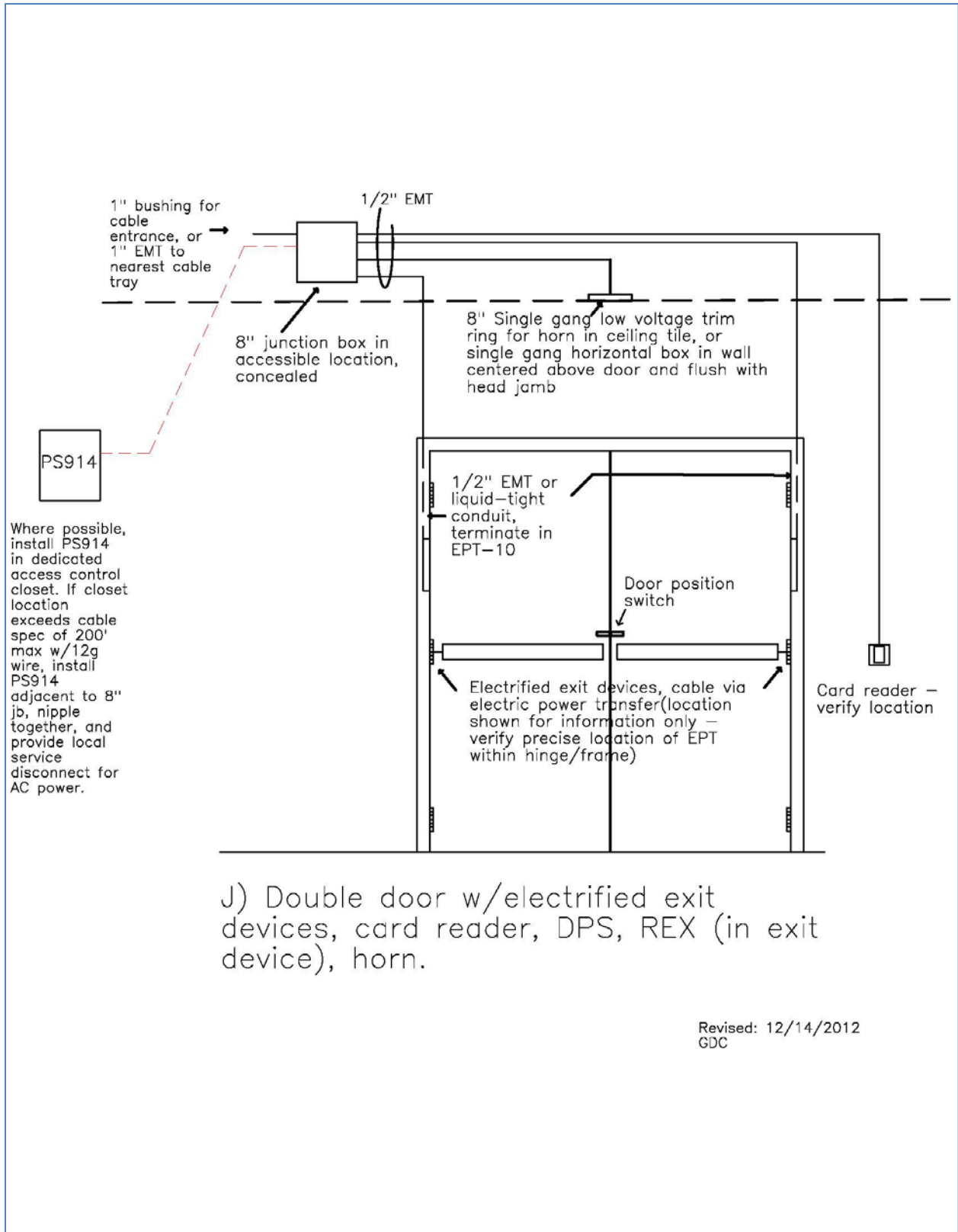


1) Double door w/electrified exit trim, card reader, DPS, REX (in exit device), horn.

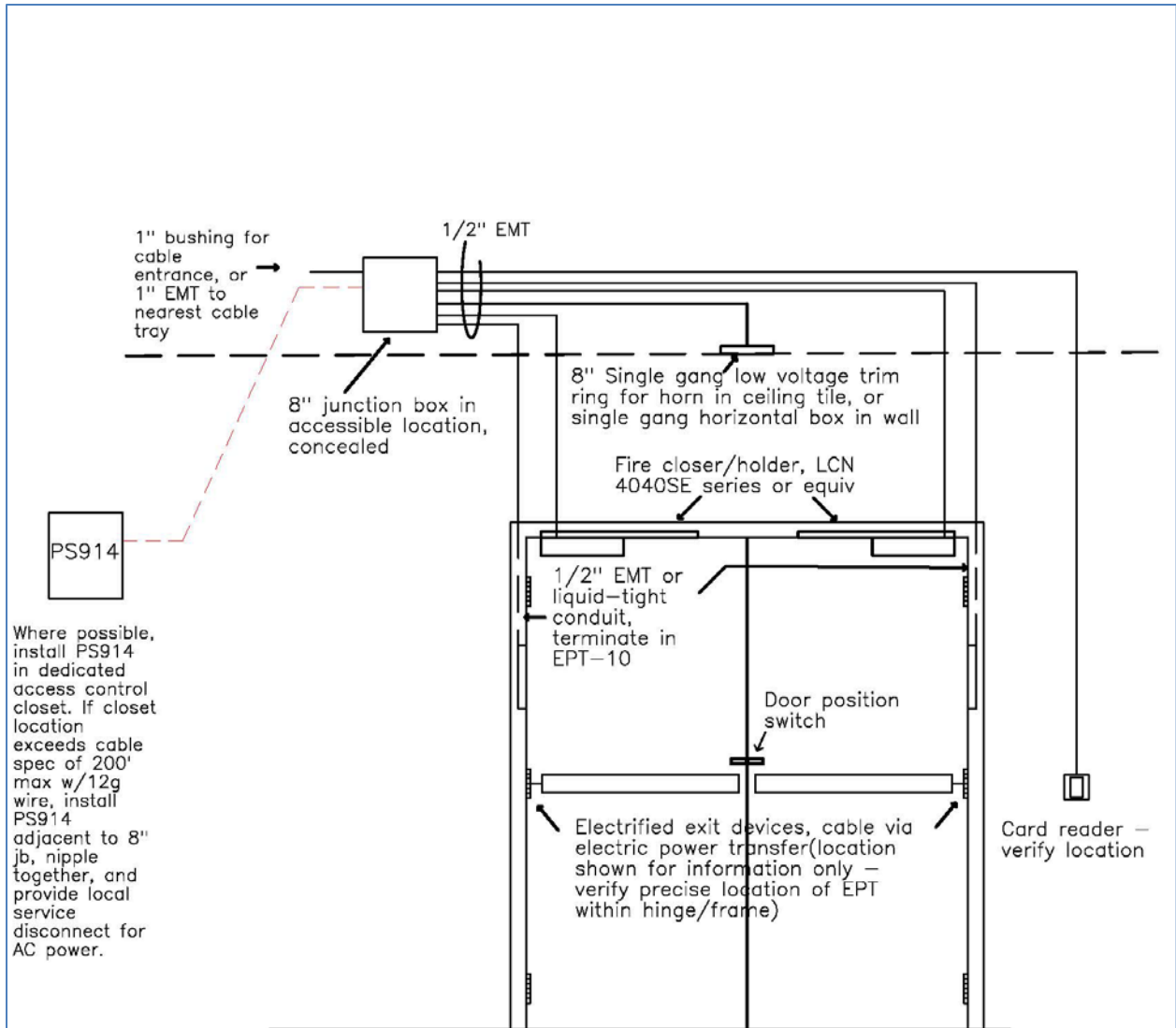
Revised: 12/14/2012  
GDC

**Figure F10: Double Door with Electric Trim**





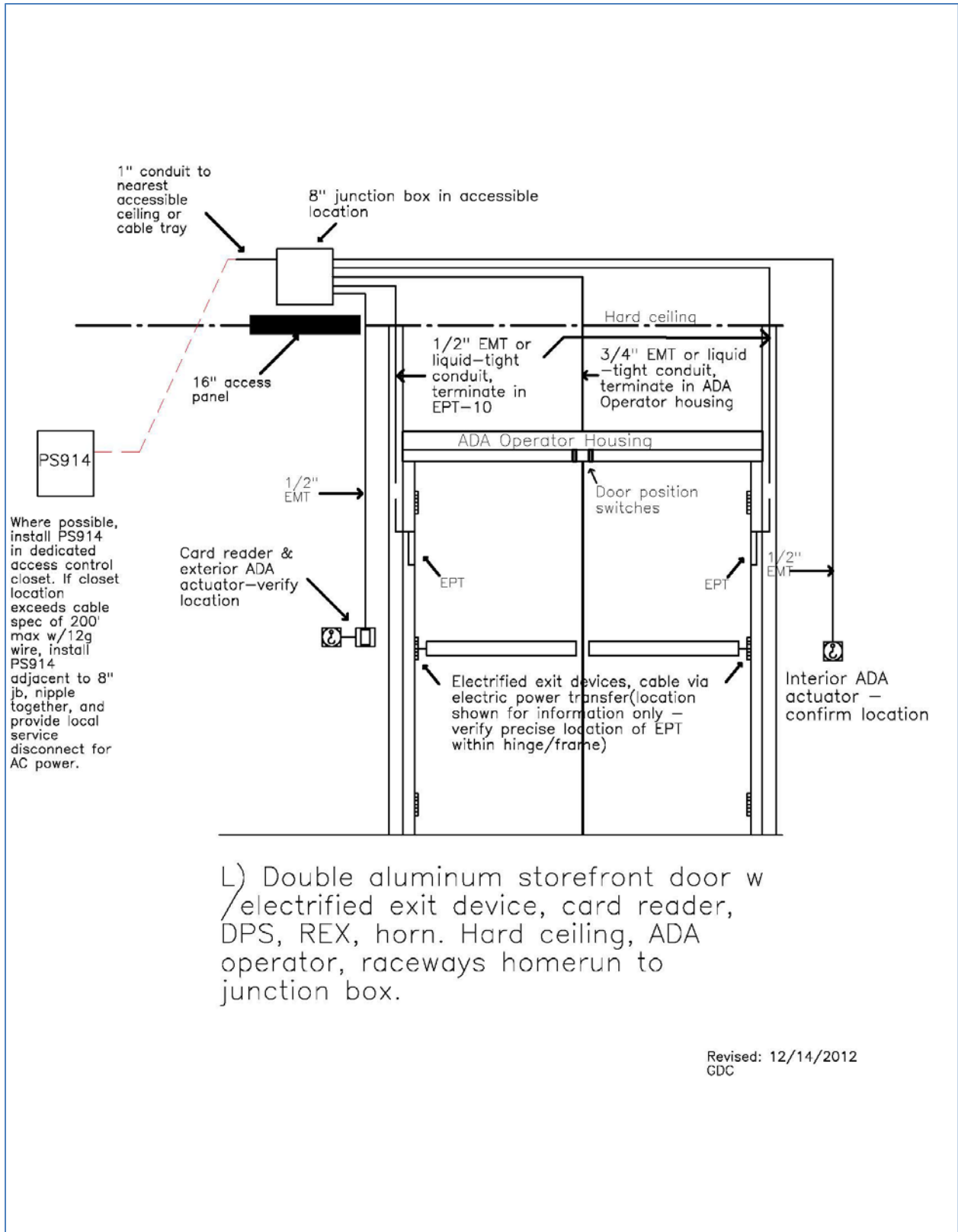
**Figure F11: Double Door with Latch Retraction**



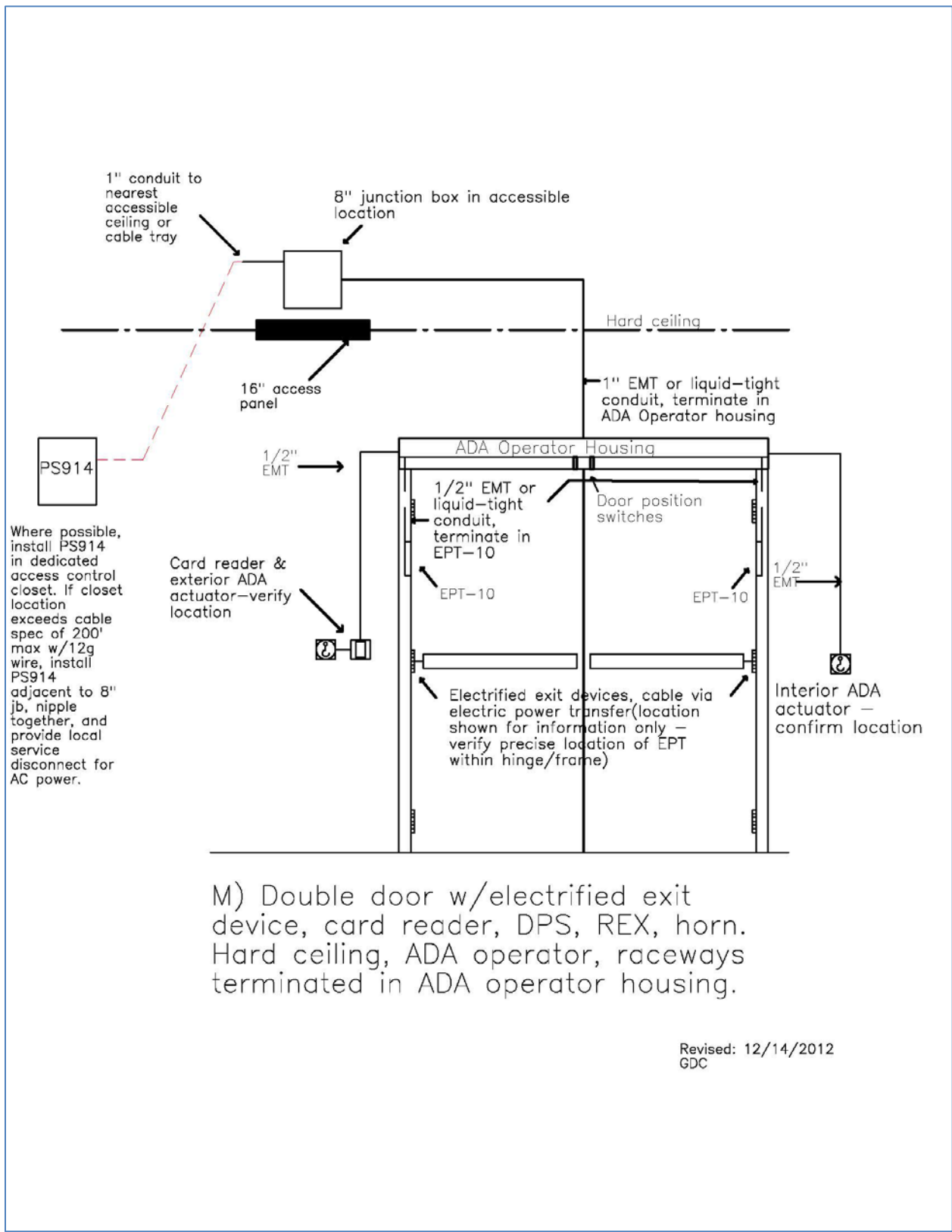
K) Double door w/electrified exit devices, card reader, DPS, REX (in exit device), horn, electrified holder-closer.

Revised: 12/14/2012  
GDC

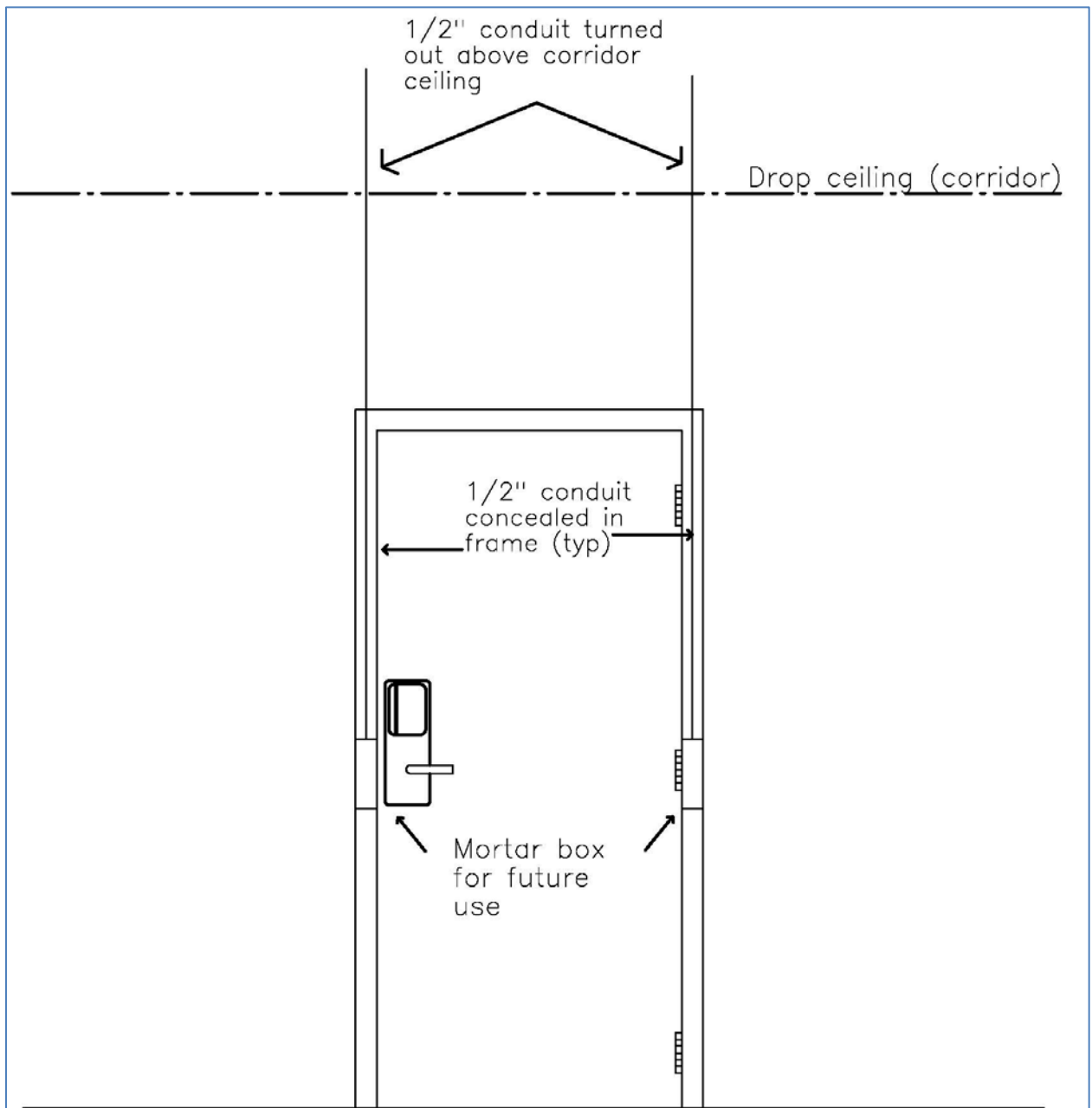
**Figure F12: Double Door with Latch Retraction Holder**



**Figure F13: Double Door with ADA Latch Retraction Storefront**



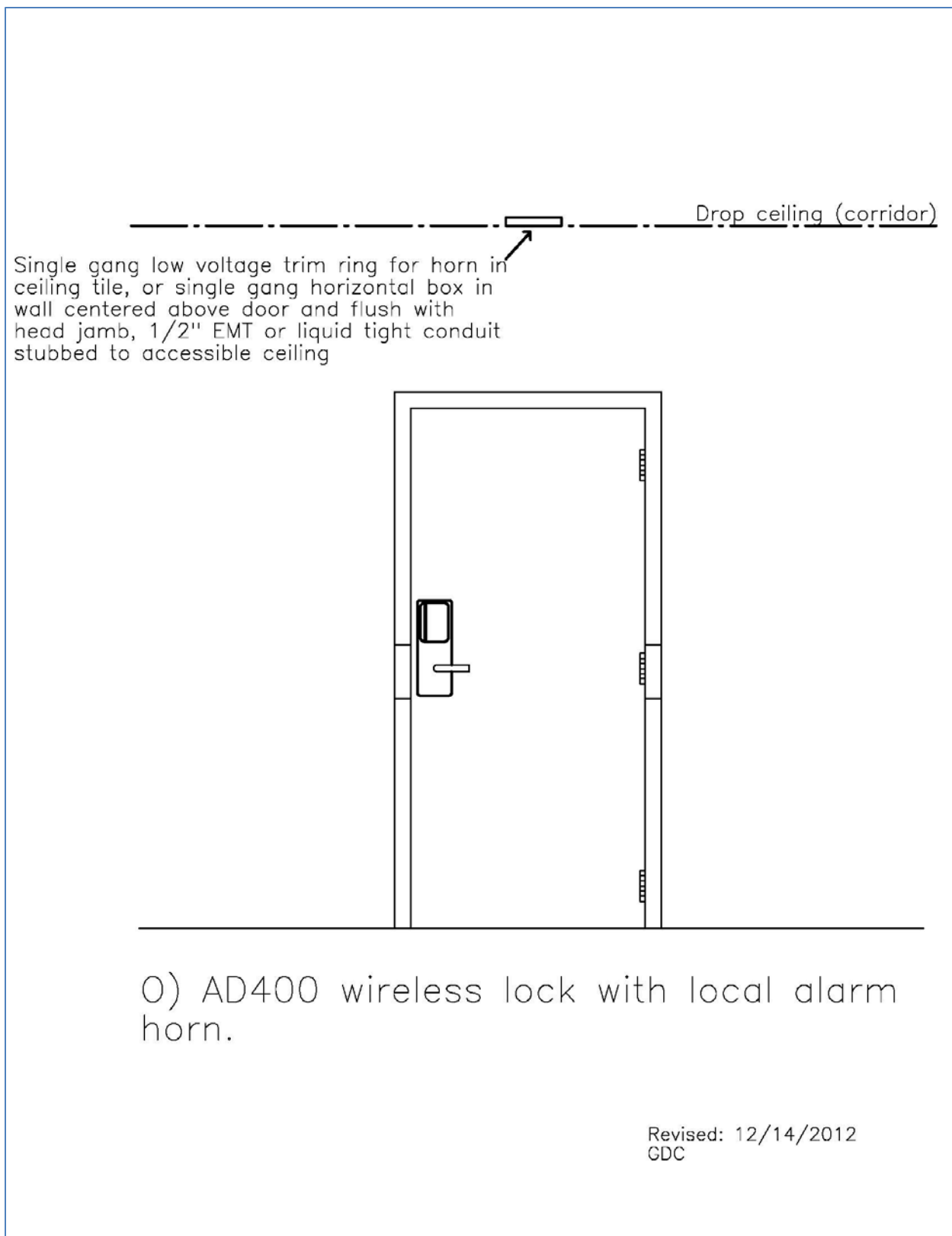
**Figure F14: Double Door with Ada Latch Retraction Raceway via Operator**



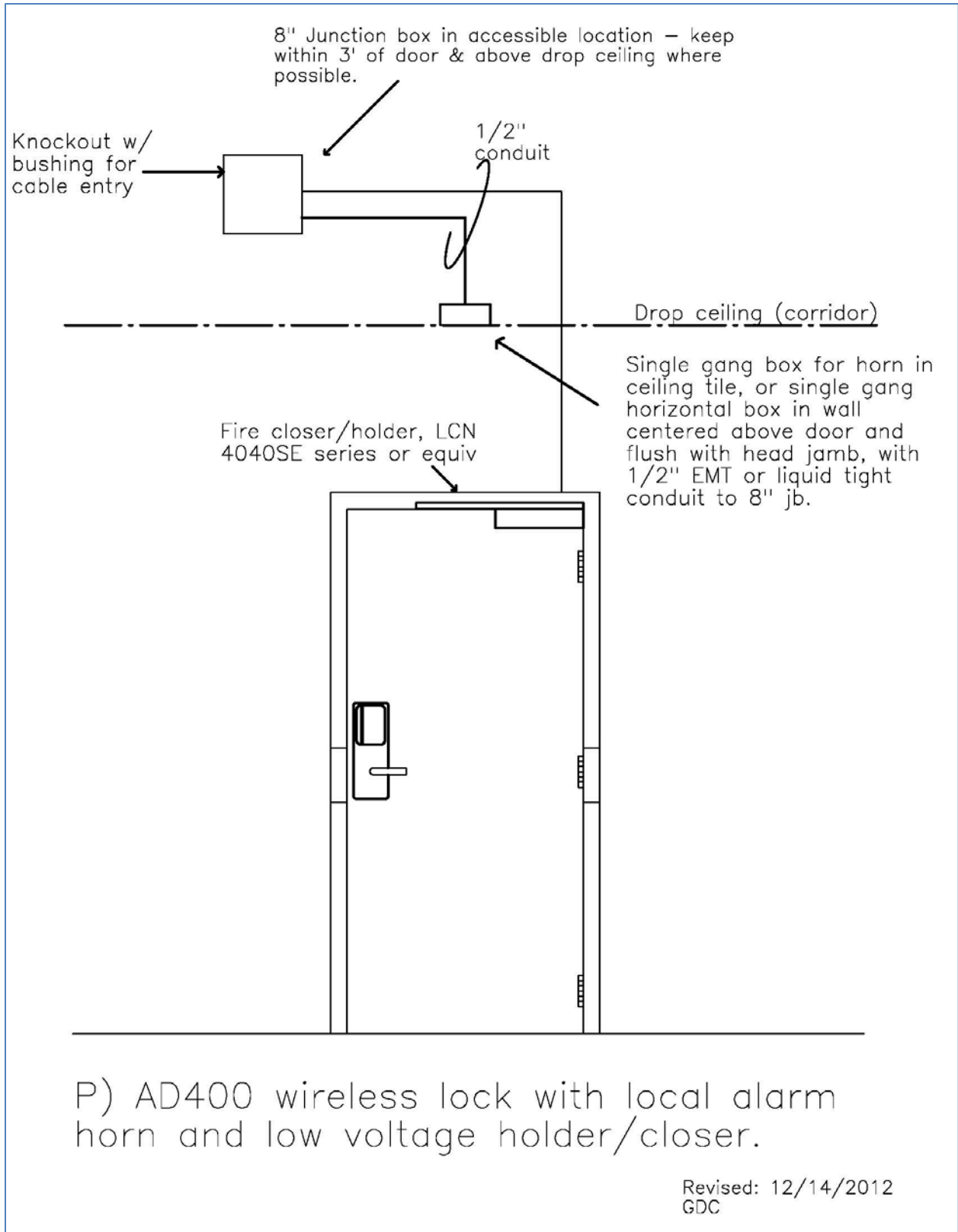
N) Residence room single door, AD400 wireless lock, frame prepped for future electric hinge & electric strike

Revised: 12/14/2012  
GDC

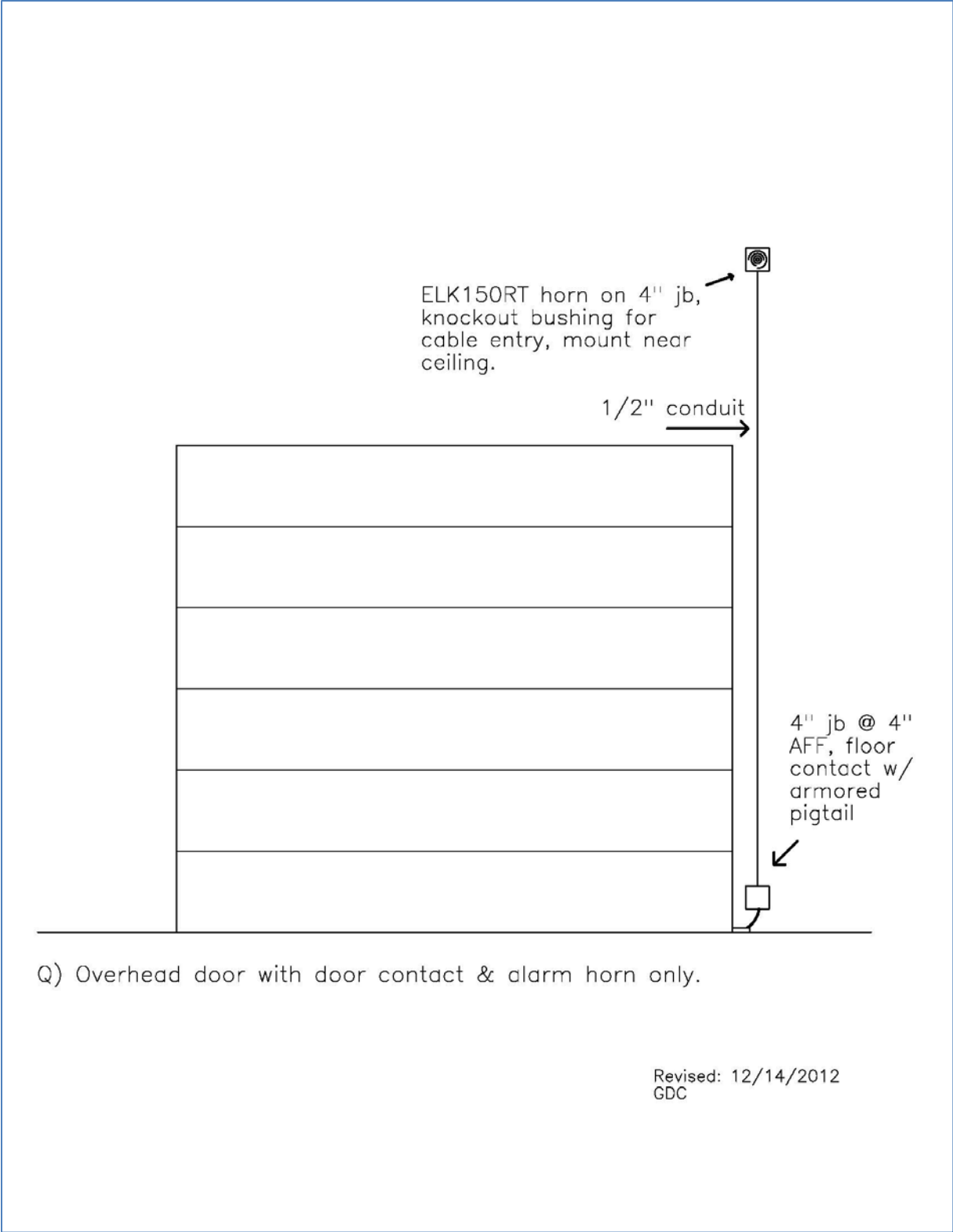
**Figure F15: Residence Room AD400 Lock**



**Figure F16: Wireless Lock with Local Alarm**

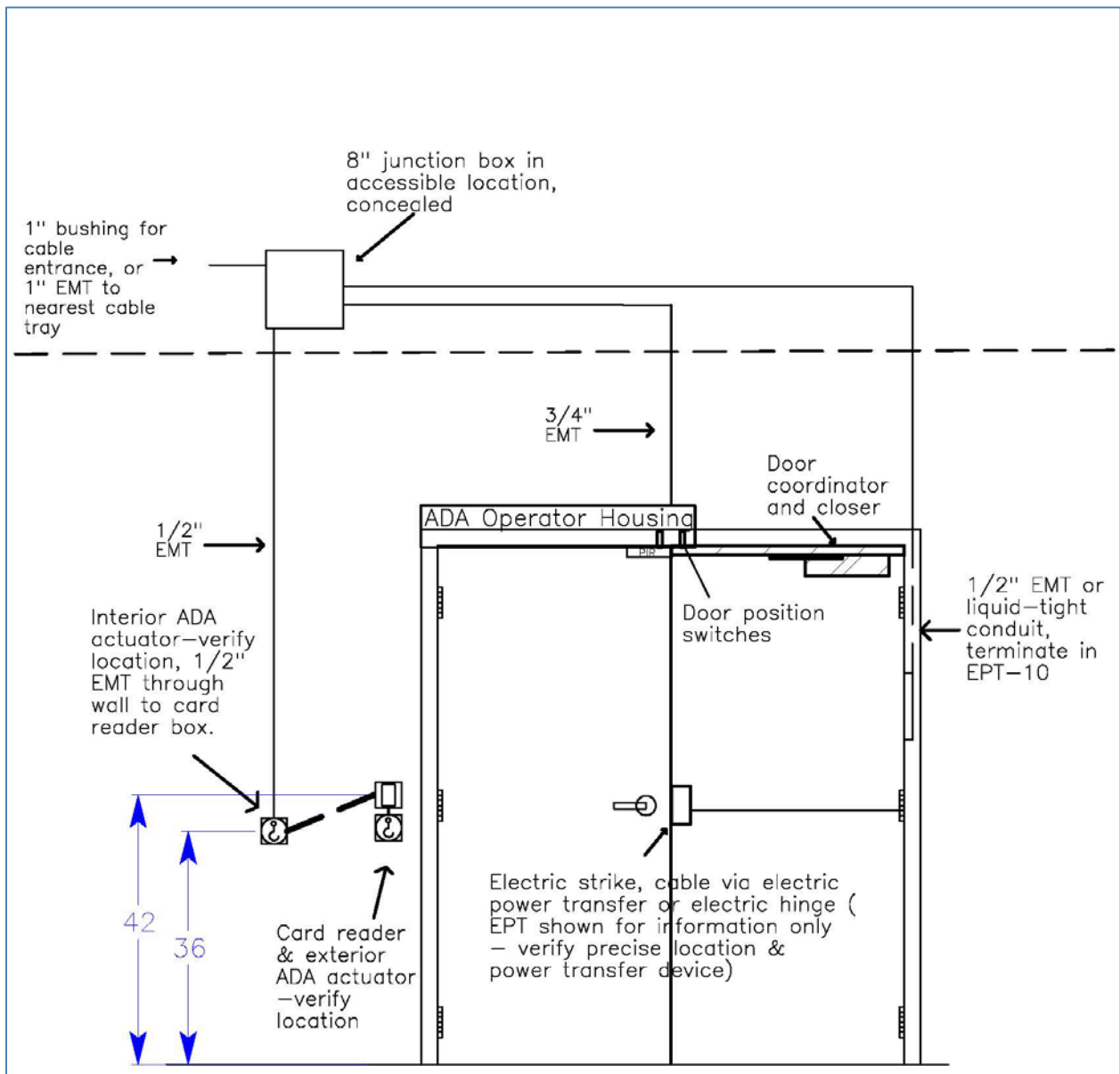


**Figure F17: Wireless Lock with Horn, Holder, and Closer**



**Figure F18: Overhead Door with Alarm**





R) Double door w/ADA operator, electric strike, card reader, DPS, REX, horn.

Revised: 12/20/2012  
GDC

**Figure F19: Double Door with ADA, Strike, Reader, Rex, and Horn**