SECTION 28 13 00 - ACCESS CONTROL

PART 1 - GENERAL

1.1 SYSTEM PERFORMANCE REQUIREMENTS

A. The University of Colorado Denver | Anschutz Medical Campus Physical Security Standards

1. 1.2.2.1. The University physical security standards for the campuses set the baseline of security requirements for each building and all controlled access structures/areas. The primary objective of the physical security policies and standards is to protect people first, with property, research protocols, and intellectual property behind it.
2. When incorporated into building design, the University will enjoy a continuity of application between each building and each zone. Architectural considerations for the presentation of buildings should incorporate these standards and the CSI, as a whole, as representative of the University's security position.
3. The University uses a layered approach to security provision. It defines this as the provision of barriers and distance between the area protected and public areas, with security provided to the object(s) of protection first and then working outward with additional layers, as needed. Layers will be added to ensure that response time by the University Police is always less than the attack time against the object(s) of protection. Barriers will allow permitted passage but will also provide a time delay or physical deterrent for non-permitted entry. Alarm, CCTV, and/or data logging by the Security Department monitors the effectiveness of these barriers. The University Police Department also monitors these barriers by foot, vehicle patrol, and remote use of the CCTV system. The greater the value or risk of the protected area, the greater the perimeter and barrier protection.
4. The standards are dynamic in that they are an appropriate and timely reaction to identified risks with reasonable mitigation to those risks, consistent with physical, technical, and fiscal restraints. As the risk changes, the associated security will react and change appropriately. However, the University will provide a baseline level of protection to all structures.
5. The standards are oriented to support the widely varied work processes; to promote the fact and perception of personal security and safety; and to address compliance with state, municipal, and industrial standards set in code, law, or policy.
6. The "Cost of Security" includes the cost of design/installation; procurement of components, monitoring of alarms and trouble alerts; response to alarms; periodic design review, and system maintenance. Indirect costs of security include the monitoring staff, the Security Badging Office staff, training, and supplies. All primary exterior entry portals, loading dock portals, and other frequent access points in the perimeter wall will have card reader controlled access. The equipment set for these doors will include HID (CR), 24VDC Electrified Locking hardware (TBD by door type, refer to security typical details), Request for Exit device (RTE), Door Position Sensor (DSM), and Code Blue 2-button CB-3000-d Intercom Device (IC) to reach Access Control or the Police, and other components as technology, requirements and risk require. All exterior doors to all buildings will have access control or door position monitoring enabling UCD to ensure a secure perimeter of each building after the close of business. The University installs access control devices at a building's primary entrance(s), where the area secured must limit access to a large and variable population, where the contents of the area present a high value or a high risk of injury; where after-hours access must be logged, and/or where unique circumstances require monitored access control. All buildings will have, by default, at least one card controlled door in its secure perimeter.
    a. Security relative to research laboratories, and other restricted zones adjacent to public areas within the same building will have secure perimeter. All doors to the laboratory spaces will have access control devices or will be alarmed and signed for emergency exit only. Each lab will have two secure barriers: the building exterior and an interior door system. The interior doors that are alarmed and controlled will remain secured at all times to ensure that only authorized personnel can enter, that a secure fire perimeter is supported, and that the line between biological, chemical, and radioactive hazards is enforced. The Security Department, the Fire/Safety Office, and the Environmental Health & Safety Department have an interest in the security of the laboratory perimeter.

b. All exterior secondary portals used for unrestricted daytime passage and night egress after building closure will be monitored. These doors will have DSM and RTE. This kit will allow egress without alarm initiation but no reentry after building closure.

c. All exterior portals used for fire or emergency exit only will have DSM only. Exit at any time will initiate an alarm. Entry is not permitted at any time. No exterior door hardware is installed.

d. Exterior portals that access mechanical and electrical rooms but do not allow further access into the building will be monitored with an RTE and DSM only and will have time zone alarms.

e. Interior portals that serve to restrict access to a variable, large, or logged population during or after business hours will have HID CR, Electronic Door Lock Hardware, DSM, and RTE. Depending upon the work process, these portals can be unlocked during certain hours. If the door is in the egress path and there are no mechanical over-rides on the door, a fire pull device may be required.

f. Interior portals that provide security only during non-business hours and where free flow of traffic is necessary, may be held in the open position with magnetic hold-backs (MH) which will release at a specified time allowing the door to close to the secured and monitored state. These portals require MH(s) and DSM(s). Access can be via key for emergency over-ride or access control card key, depending upon the size and type of the permitted population.

g. Interior portals that secure office, classroom, electrical, mechanical, audio-visual, maintenance, conference, and similar areas will typically be secured by door hardware only, tied to the keying schema of the university.

h. High Value, High Risk, or Privacy Protection Areas will be secured by the normal CR, RTE, and DSM kit with the CR replaced or supplemented by a Biometric Device (BD) that incorporates the card reader to gain access. The use of these devices is dependent upon the risk mitigated by the locked door. These portals will be locked and controlled at all times and may have CCTV surveillance to support the security controls.

i. Elevators, passenger and freight, may have access control features to provide floor by floor compartmentalization during or after business hours. These may include a card reader at entry floors to open a car and interior readers to support permitted access to selected floors. Supporting features may include CCTV surveillance at elevator entry points or inside the cars to record tail-gating events, movements of property, or irregular access events.

j. Fire Stairwells will have access controls to particular floors when the elevators on corresponding floors have access controls. As with elevators and all fire egress paths, the fire system will shunt any security devices in the egress path. Egress to the roof will be prevented by a locked keyway only. Re-entry to intermediate floors, though not required by code, may be designed to provide escape routing should an occupant be confronted by criminal or other personal threat between the tenant and ground-level egress. Where those floors are identified, a fire pull station will be installed. Initiating this alarm will summon fire and police. The Security Department and the University's Fire Marshal will work with the Architect on this issue.

k. The CCTV and Security systems will terminate in the IT/Telecom room(s) core in each structure. Security will typically have one wall for its low voltage power supplies, controllers, etc. and a portion of the rack system for CCTV components, etc. These rooms also support the fiber optic breakout, the structure's telephone and network features. Security will bridge to the campus network in these areas.

l. The Security Department supports the widely accepted "Crime Prevention Through Environmental Design" concepts that include the security program involvement during the designs of the interior, exterior, landscape, lighting, parking, loading, etc. The Security Department also supports the AIA's "Building Security through Design" concepts that encourage early integration of risk identification and risk mitigation through seamless design features. The Security Department will contribute to the Project Team throughout the structure's development to ensure clear communication, quick consultation, and solid research.

7. Secure Perimeters

a. All exterior doors to all buildings will have access control or door position monitoring enabling UCD to ensure a secure perimeter of each building after the close of business.

b. The University installs access control devices at a building's primary entrance(s), where the area secured must limit access to a large and variable population, where the contents of the area present a high value or a high risk of injury; where after-hours access must be logged, and/or where unique circumstances require monitored access control. All buildings will have, by default, at least one card controlled door in its secure perimeter.

PART 2 - PRODUCTS

2.1 ELECTRONIC ACCESS CONTROL SYSTEM COMMAND AND CONTROL – ACCESS CONTROL CENTER

A. C•CURE FOUNDATION SECURITY FEATURES

1. The software suite selected to drive the integrated campus security, alarm and CCTV systems is C•CURE 9000 by Software House, a Tyco Company. The specifications of the software of published at the Software House website: http://www.swhouse.com/
2. Wiring specification:
   a. Access Control:
      1) Card Reader – 1 (one) 18/6 shielded and 1 (one) 22/2pr Shielded
      2) Door position switch – 1 (one) 22/4 conductor
      3) Locking hardware – 1 (one) 16/2 conductor
      4) Request to exit – 1 (one) 18/4 conductor
      5) Emergency door release - 1 (one) 22/4 conductor

Cable	Description
18/6	18-6C STR BC FRPVC FOIL SHD FRPVC JKT WHT CL3P
18/4	18-4C STR BC FRPVC FRPVC JKT WHT CL2P
16/2	16-2C STR BC FRPVC FRPVC JKT NEC CMP WHT
22/4	22-4C STR BC FRPVC FRPVC JKT WHT CL3P
22/2pr Shld	22-2P STR BC FRPVC IND FOIL SHD FRPVC JKT NAT 300V 60C CMP
Cat6	Network cable (refer to communications standard)
Fiber 4 strand	BX-04-070K-WLS/900-OFNP 4 STRAND BREAKOUT CABLE
	(Fiber MINIMUM RADIUS BEND 4.13 INCHES)

2.2 ESD is the primary contractor for security features on the campus. ESD will provide the equipment specifications for all security and CCTV systems.

2.3 ESD will resolve subcontractor issues regarding wire installation, etc. with the Project Manager and the General Contractor. When possible, the ESD will address the installation of all components at the terminus and the control panels but will likely utilize the General Contractor's resources for pulling wire between the various ITS rooms and the various endpoints.

2.4 CARD READER DOOR SETUPS

A. Primary Doors:

1. HID Card Readers (Exterior doors), Request to Exit device, GE/Sentrol Door Position Switches, 24VDC Electrified Locking hardware (TBD by door type, refer to security typical details).
2. Other Doors
3. HID Card Readers (Interior doors), Request to Exit device, GE/Sentrol Door Position Switches, 24VDC Electrified Locking hardware (TBD by door type, refer to security typical details).
4. HID RP15 Card Readers (Mullion Mount), DS150i Request to Exits, GE/Sentrol Door Position Switches, 24VDC Electrified Locking hardware (TBD by door type, refer to security typical details).

B. Non Card Reader Doors
1. Electronic Controlled/Programmed
a. Request to Exit device, GE/Sentrol Door Position Switches, 24VDC Electrified Locking hardware (TBD by door type, refer to security typical details).
2. Electronic Monitored
a. Request to Exit device, GE/Sentrol Door Position Switches

2.5 SECURITY SYSTEMS AND ALARM TYPES

A. Door alarm – Forced Open and Held Open alarms will be broadcast when a door is opened except by the appropriate security device and when the door is held open for more than two minutes. Overhead doors will broadcast an open alarm when open during an alarmed period

B. Intrusion Alarms – Intrusion alarms are triggered when a room or building which has a security perimeter and interior motion detection devices installed has a motion detection or perimeter breach.

C. Panic alarms – Panic alarms are installed where cash or other high value is located, where the risk of injury is high or where intrusion risk is present. All alarms trigger the police or a police/EMS response to the alarm location

D. Motion Alarms – Where a device is selected to detect the presence of a person for alarm purposes, dual technology (microwave and infrared) sensors are co-located in for that purpose. The type of infrared sensor installed to function as a Request to Exit device (RTE) is installed on the secure side of a door to shunt alarms upon exit.

E. Access Control for Elevators – Access to floors with controlled access will be controlled by card readers installed in the car. If the car opens to a secure floor, into secure space, a building’s roof or other hazardous area access to that floor will be controlled.

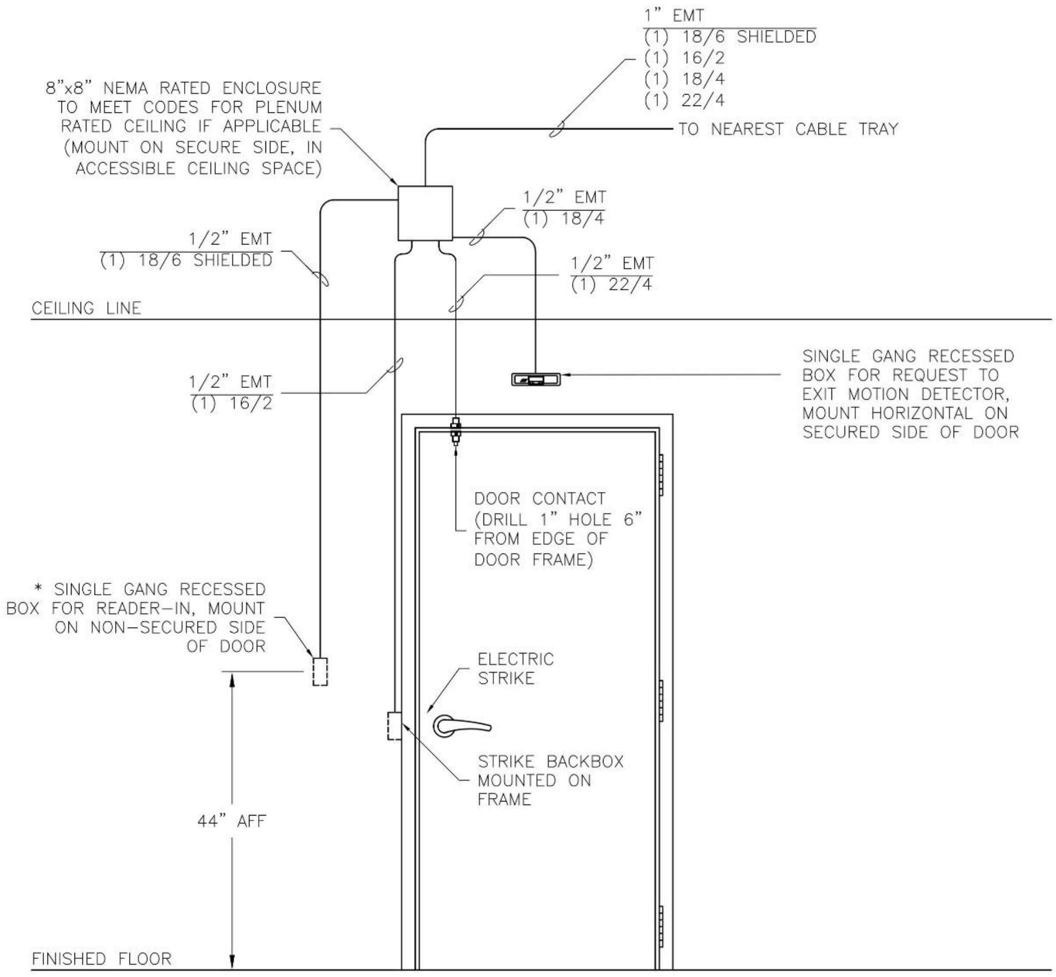
F. Automated External Defibrillators – Provide a 22 gauge, four-conductor stranded cable routed from the AED enclosure to the nearest Security Control Panel with external relay connection to the University Police. Coordinate with the University Electronic Security for terminations on both ends.
Provide

G. Uninterrupted Power Supply (UPS) must be identified for all rack-mounted CCTV Video Components. The UPS must be able to support the loss of power for 1 hour. It shall provide power conditioning and EPS (Emergency Power System) buffering. The circuits supporting NVRs must also be supported by the emergency power generation system for the building.

PART 3 - EXECUTION

3.1 Standard details for access control are included in this section. If the door type does not match the standarard detail, coordinate with Project Manager for alternate detail.

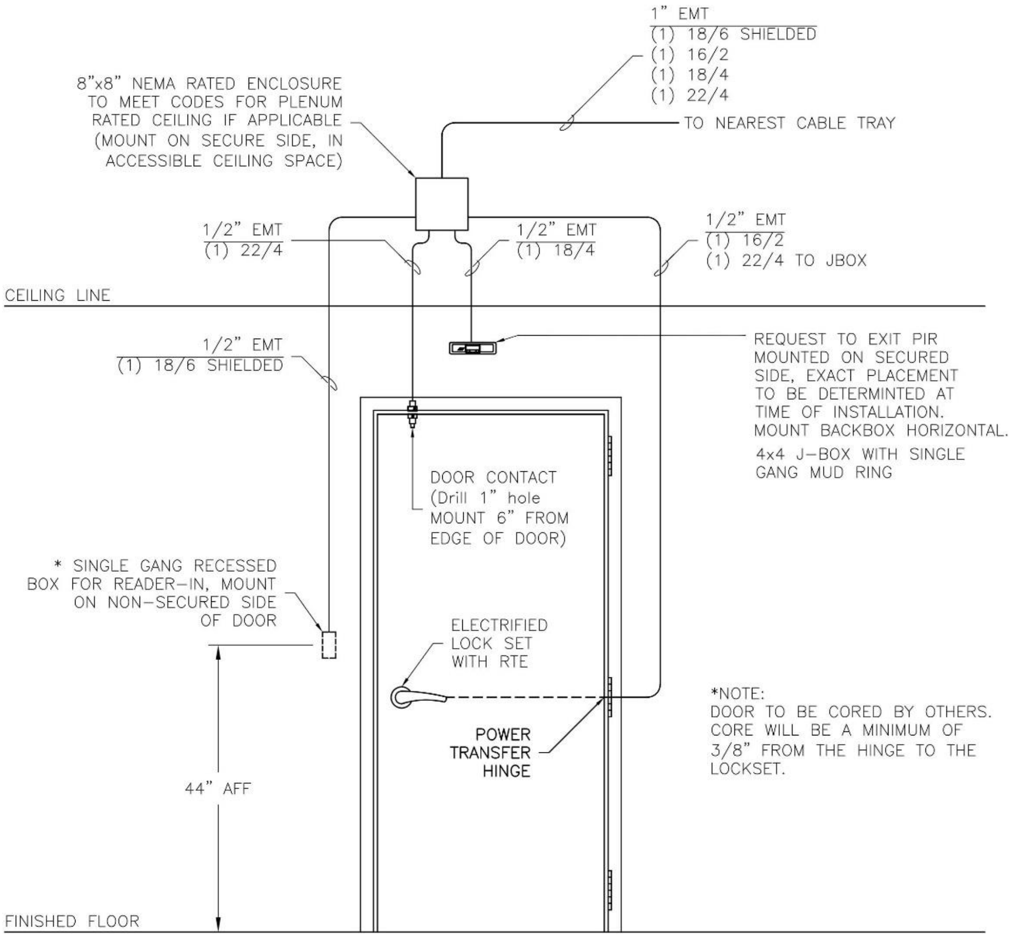
3.2 Typical Security Door with Electrified Strike


1" EMT
(1) 18/6 SHIELDED
(1) 16/2
(1) 18/4
(1) 22/4
TO NEAREST CABLE TRAY
8"x8" NEMA RATED ENCLOSURE TO MEET CODES FOR PLENUM RATED CEILING IF APPLICABLE (MOUNT ON SECURE SIDE, IN ACCESSIBLE CEILING SPACE)
1/2" EMT
(1) 18/4
1/2" EMT
(1) 18/6 SHIELDED
1/2" EMT
(1) 22/4
CEILING LINE
SINGLE GANG RECESSED BOX FOR REQUEST TO EXIT MOTION DETECTOR, MOUNT HORIZONTAL ON SECURED SIDE OF DOOR
1/2" EMT
(1) 16/2
DOOR CONTACT (DRILL 1" HOLE 6" FROM EDGE OF DOOR FRAME)
* SINGLE GANG RECESSED BOX FOR READER-IN, MOUNT ON NON-SECURED SIDE OF DOOR
ELECTRIC STRIKE
STRIKE BACKBOX MOUNTED ON FRAME
44" AFF
FINISHED FLOOR

VIEWED FROM SECURED SIDE

DRAWING NOTES:
SEE NOTES 1, 2, 3, 5, 6, 7, 8
OF SUPPLEMENTAL NOTES SHEET
* MOUNT CARDREADER 6" MIN. – 12" MAX. FROM EDGE OF DOOR

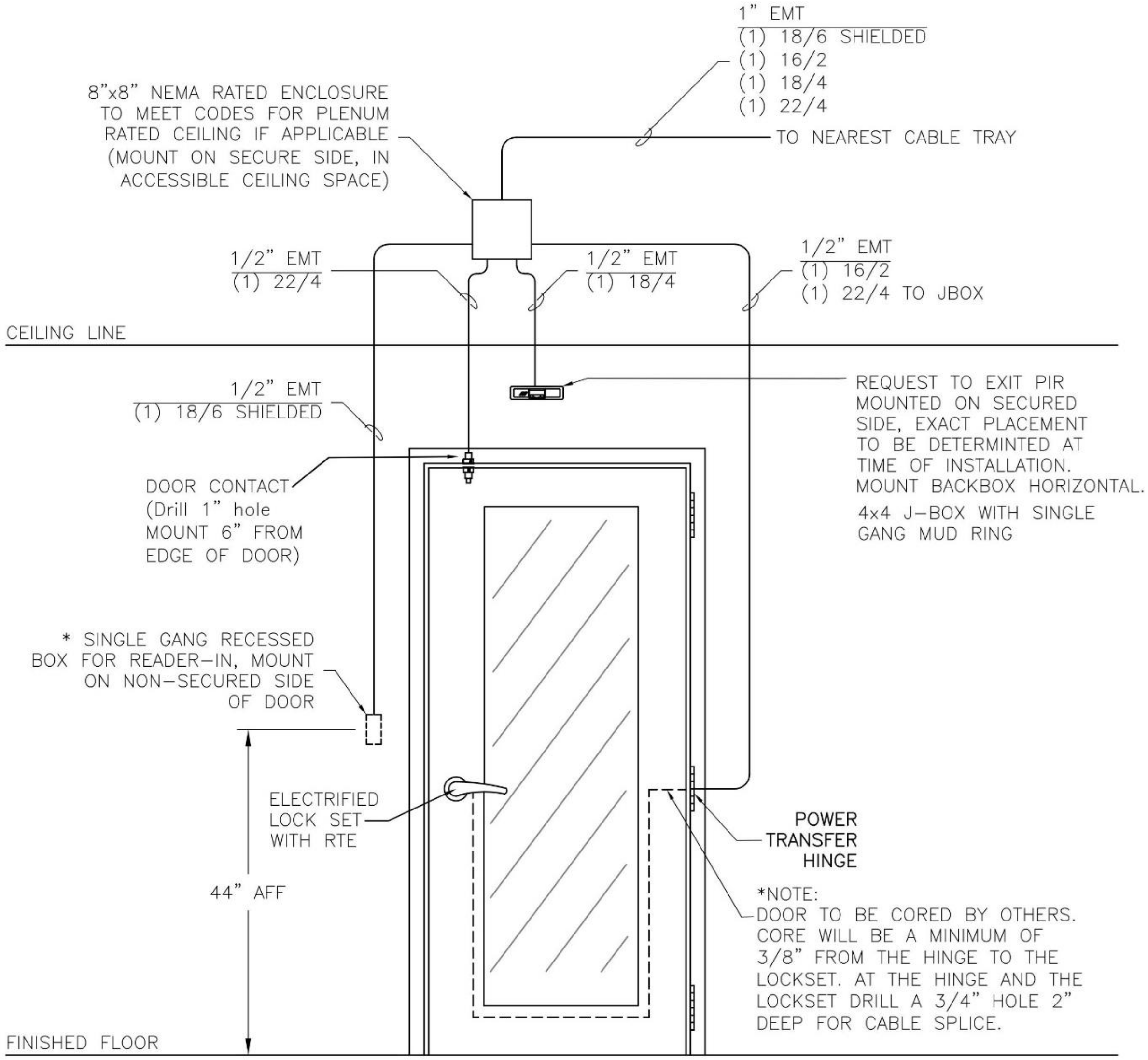
3.3 Typical Secruity Door with Electrified Lockset


1" EMT
(1) 18/6 SHIELDED
(1) 16/2
(1) 18/4
(1) 22/4
TO NEAREST CABLE TRAY
8"x8" NEMA RATED ENCLOSURE TO MEET CODES FOR PLENUM RATED CEILING IF APPLICABLE (MOUNT ON SECURE SIDE, IN ACCESSIBLE CEILING SPACE)
1/2" EMT
(1) 22/4
1/2" EMT
(1) 18/4
1/2" EMT
(1) 16/2
(1) 22/4 TO JBOX
CEILING LINE
1/2" EMT
(1) 18/6 SHIELDED
REQUEST TO EXIT PIR MOUNTED ON SECURED SIDE, EXACT PLACEMENT TO BE DETERMINTED AT TIME OF INSTALLATION. MOUNT BACKBOX HORIZONTAL.
4x4 J-BOX WITH SINGLE GANG MUD RING
DOOR CONTACT (Drill 1" hole MOUNT 6" FROM EDGE OF DOOR)
* SINGLE GANG RECESSED BOX FOR READER-IN, MOUNT ON NON-SECURED SIDE OF DOOR
ELECTRIFIED LOCK SET WITH RTE
*NOTE: DOOR TO BE CORED BY OTHERS. CORE WILL BE A MINIMUM OF 3/8" FROM THE HINGE TO THE LOCKSET.
POWER TRANSFER HINGE
44" AFF
FINISHED FLOOR

VIEWED FROM SECURED SIDE

DRAWING NOTES:
SEE NOTES 1, 2, 3, 5, 6, 7, 8
OF SUPPLEMENTAL NOTES SHEET
* MOUNT CARDREADER 6" MIN. – 12" MAX. FROM EDGE OF DOOR
* DOOR PREP (CORE) FOR THE ELECTRIFIED LOCKSET TO BE PROVIDED BY THE CONTRACTOR

3.4 Typical Secruity Door with Glass Panel and Electrified Lockset


1" EMT
(1) 18/6 SHIELDED
(1) 16/2
(1) 18/4
(1) 22/4
TO NEAREST CABLE TRAY
8"x8" NEMA RATED ENCLOSURE TO MEET CODES FOR PLENUM RATED CEILING IF APPLICABLE (MOUNT ON SECURE SIDE, IN ACCESSIBLE CEILING SPACE)
1/2" EMT
(1) 22/4
1/2" EMT
(1) 18/4
1/2" EMT
(1) 16/2
(1) 22/4 TO JBOX
CEILING LINE
1/2" EMT
(1) 18/6 SHIELDED
REQUEST TO EXIT PIR MOUNTED ON SECURED SIDE, EXACT PLACEMENT TO BE DETERMINTED AT TIME OF INSTALLATION. MOUNT BACKBOX HORIZONTAL.
4x4 J-BOX WITH SINGLE GANG MUD RING
DOOR CONTACT (Drill 1" hole MOUNT 6" FROM EDGE OF DOOR)
* SINGLE GANG RECESSED BOX FOR READER-IN, MOUNT ON NON-SECURED SIDE OF DOOR
ELECTRIFIED LOCK SET WITH RTE
44" AFF
POWER TRANSFER HINGE
*NOTE:
DOOR TO BE CORED BY OTHERS. CORE WILL BE A MINIMUM OF 3/8" FROM THE HINGE TO THE LOCKSET. AT THE HINGE AND THE LOCKSET DRILL A 3/4" HOLE 2" DEEP FOR CABLE SPLICE.
FINISHED FLOOR

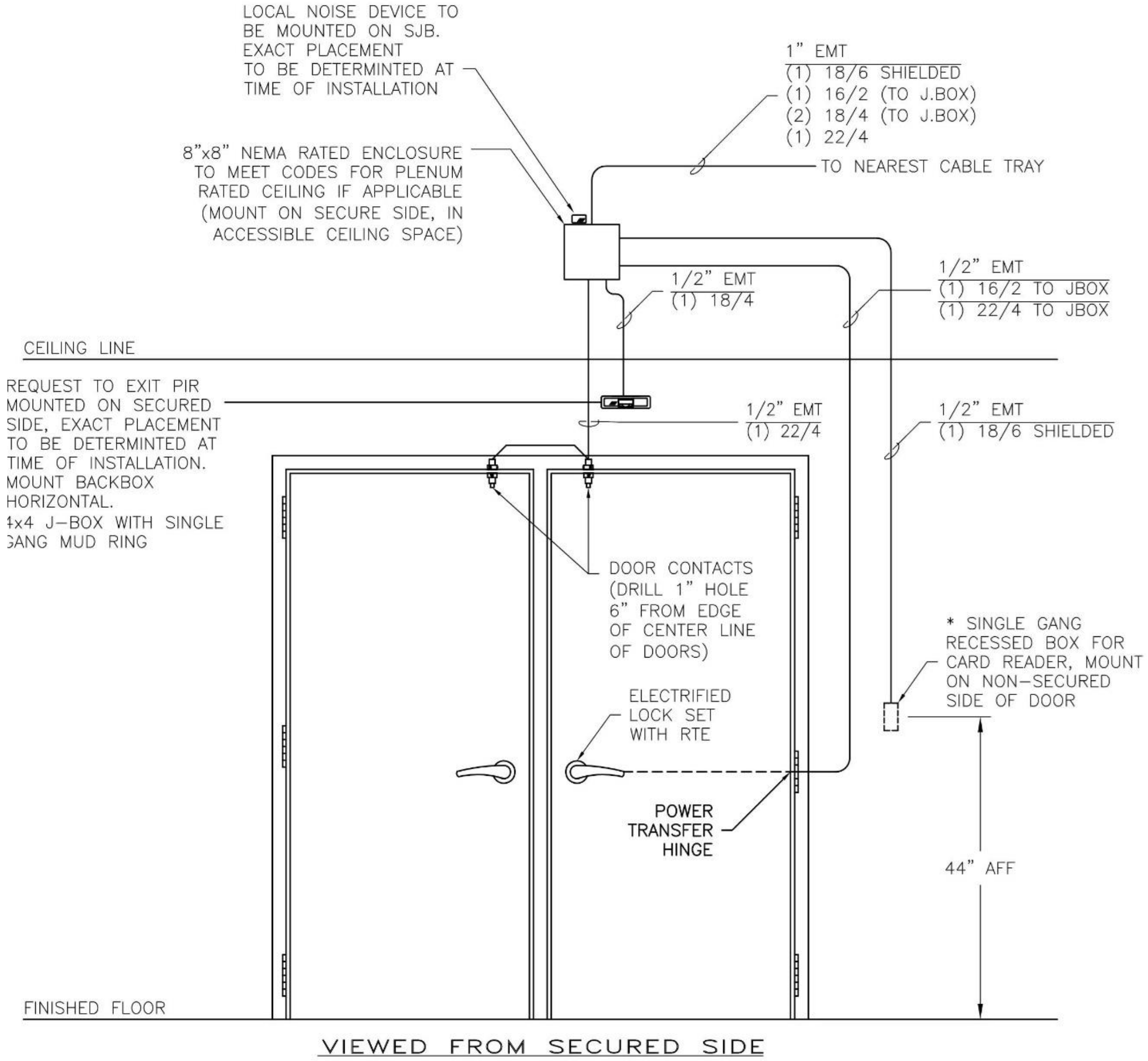
VIEWED FROM SECURED SIDE

DRAWING NOTES:
SEE NOTES 1, 2, 3, 4, 5, 6, 7, 8
OF SUPPLEMENTAL NOTES SHEET

* MOUNT CARDREADER 6" MIN. – 12" MAX. FROM EDGE OF DOOR

* DOOR PREP (CORE) FOR THE ELECTRIFIED LOCKSET TO BE PROVIDED BY THE CONTRACTOR

3.5 Typical Secruity Double Door with Electrifeid Lockset


LOCAL NOISE DEVICE TO BE MOUNTED ON SJB. EXACT PLACEMENT TO BE DETERMINTED AT TIME OF INSTALLATION
8"x8" NEMA RATED ENCLOSURE TO MEET CODES FOR PLENUM RATED CEILING IF APPLICABLE (MOUNT ON SECURE SIDE, IN ACCESSIBLE CEILING SPACE)
1" EMT
(1) 18/6 SHIELDED
(1) 16/2 (TO J.BOX)
(2) 18/4 (TO J.BOX)
(1) 22/4
TO NEAREST CABLE TRAY
1/2" EMT
(1) 18/4
1/2" EMT
(1) 16/2 TO JBOX
(1) 22/4 TO JBOX
CEILING LINE
REQUEST TO EXIT PIR MOUNTED ON SECURED SIDE, EXACT PLACEMENT TO BE DETERMINTED AT TIME OF INSTALLATION. MOUNT BACKBOX HORIZONTAL. 4x4 J–BOX WITH SINGLE GANG MUD RING
1/2" EMT
(1) 22/4
1/2" EMT
(1) 18/6 SHIELDED
DOOR CONTACTS (DRILL 1" HOLE 6" FROM EDGE OF CENTER LINE OF DOORS)
* SINGLE GANG RECESSED BOX FOR CARD READER, MOUNT ON NON–SECURED SIDE OF DOOR
ELECTRIFIED LOCK SET WITH RTE
POWER TRANSFER HINGE
44" AFF
FINISHED FLOOR

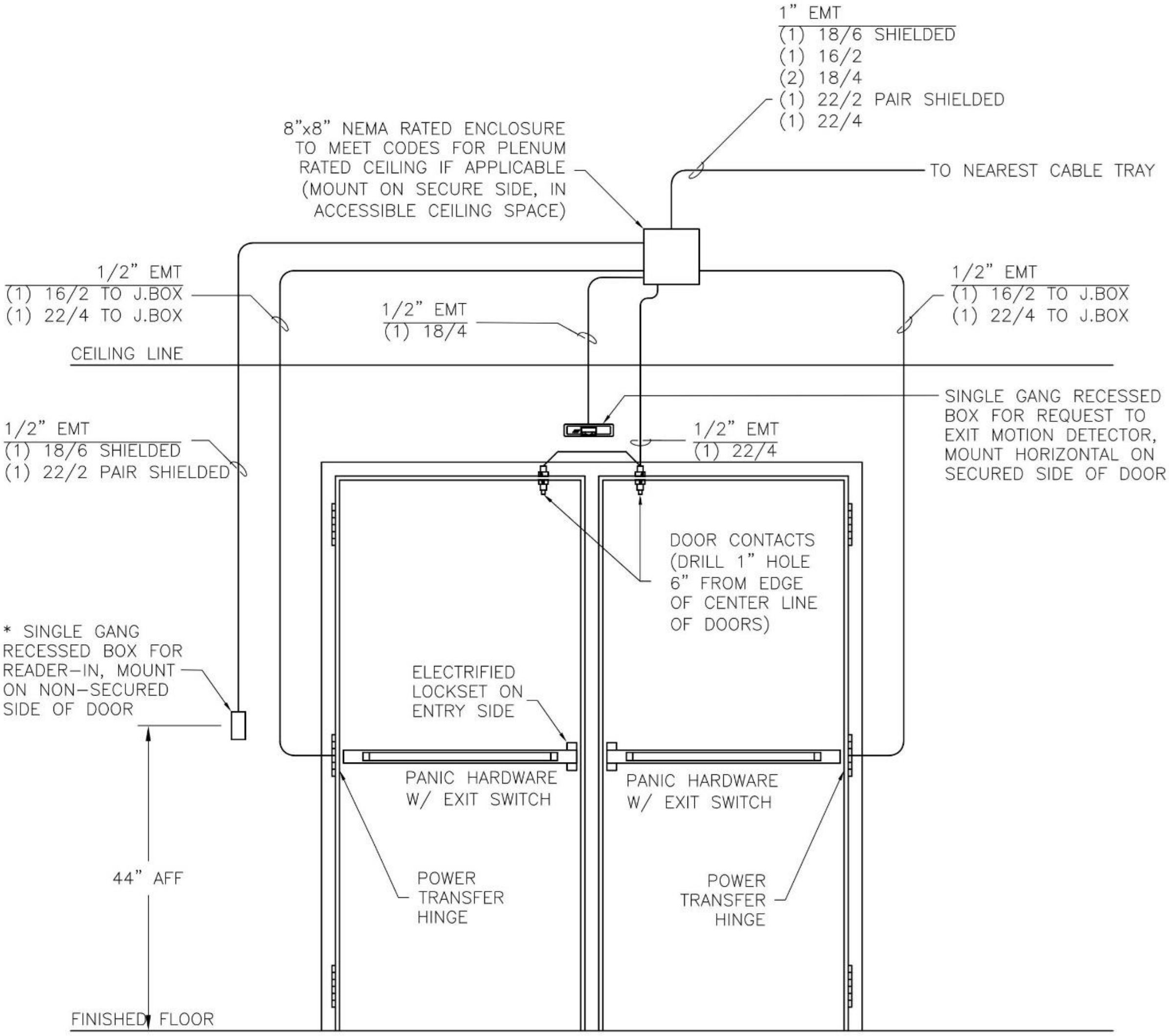
VIEWED FROM SECURED SIDE

DRAWING NOTES:
SEE NOTES 1, 2, 3, 5, 6, 7, 8
OF SUPPLEMENTAL NOTES SHEET
* MOUNT CARDREADER 6" MIN. – 12" MAX. FROM EDGE OF DOOR

*NOTE:
DOOR TO BE CORED BY OTHERS. CORE WILL BE A MINIMUM OF 3/8" FROM THE HINGE TO THE LOCKSET.

DOUBLE DOOR, CARD–IN, FREE EXIT, REX,
ELECTRIFIED LOCK SET & LOCAL NOISE BN1
SCALE: NOT TO SCALE

3.6 Typical Secruity Double Door with Electrified Panic Hardware


1" EMT
(1) 18/6 SHIELDED
(1) 16/2
(2) 18/4
(1) 22/2 PAIR SHIELDED
(1) 22/4
TO NEAREST CABLE TRAY
8"x8" NEMA RATED ENCLOSURE TO MEET CODES FOR PLENUM RATED CEILING IF APPLICABLE (MOUNT ON SECURE SIDE, IN ACCESSIBLE CEILING SPACE)
1/2" EMT
(1) 16/2 TO J.BOX
(1) 22/4 TO J.BOX
1/2" EMT
(1) 18/4
1/2" EMT
(1) 16/2 TO J.BOX
(1) 22/4 TO J.BOX
CEILING LINE
1/2" EMT
(1) 18/6 SHIELDED
(1) 22/2 PAIR SHIELDED
1/2" EMT
(1) 22/4
SINGLE GANG RECESSED BOX FOR REQUEST TO EXIT MOTION DETECTOR, MOUNT HORIZONTAL ON SECURED SIDE OF DOOR
DOOR CONTACTS (DRILL 1" HOLE 6" FROM EDGE OF CENTER LINE OF DOORS)
* SINGLE GANG RECESSED BOX FOR READER-IN, MOUNT ON NON-SECURED SIDE OF DOOR
ELECTRIFIED LOCKSET ON ENTRY SIDE
PANIC HARDWARE W/ EXIT SWITCH
PANIC HARDWARE W/ EXIT SWITCH
44" AFF
POWER TRANSFER HINGE
POWER TRANSFER HINGE
FINISHED FLOOR

VIEWED FROM SECURED SIDE

DRAWING NOTES:
SEE NOTES 1, 2, 3, 5, 6, 7, 8
OF SUPPLEMENTAL NOTES SHEET
* MOUNT CARDREADER 6" MIN. – 12" MAX. FROM EDGE OF DOOR

END OF SECTION 28 13 00