SECTION 28 00 00

SECURITY SYSTEMS ENGINEERING GUIDELINES

PART 1 - GENERAL

1.1 DEFINITION OF INTENT

A. This section is intended to provide general information and guidance on the overall system architecture of the security systems deployed at Dartmouth College for contractors directly working for, or consultants designing a new building for Dartmouth College.

B. In addition to the information provided herein, the consultant or contractor shall reference the following specification sections as appropriate for the project.

1. Section 28 05 00, Common Work Results for Electronic Security.
2. Section 28 05 13, Conductors and Cables for Electronic Security.
3. Section 28 05 28, Pathways for Electronic Security.
4. Section 28 08 00, Commissioning of Electronic Security.
5. Section 28 10 00, Access Control.
6. Section 28 20 00 Video Surveillance.
7. Section 28 31 00 Intrusion Detection.

1.2 OVERVIEW OF SYSTEMS

A. Dartmouth College (DC) security management systems currently consist of an Access Control System (ACS), Intrusion Detection Systems (IDS) and Video Surveillance Systems (VSS).

B. Dartmouth College has replaced the legacy access control system with CBORD CS Gold / CS Access using HID proximity card readers. Access control functions are integrated into the Dartmouth CBORD CS Gold system. All new Mercury controllers installed will be MP Series or Series 3 or newer and all new card readers will be OSDP V2 HID Signo Smart Card readers with Bluetooth LE and NFC capabilities.

C. Intrusion Detection Systems currently used are either Bosch or Ademco. All new intrusion detection system installations must be coordinated with the Dartmouth Access Control Shop and Department of Safety and Security.

D. The currently used Video Surveillance System is a Tyco Exacq IP based Video Management System (VMS) using Axis or Sony PoE IP cameras. The existing Exacq VSS is not integrated with the ACS or IDS. Dartmouth is currently evaluating options for VSS integration with CS Access/CS Gold. Until the final selection is made, all video cameras and recording server hardware will need to be an expansion of the existing ExacQ VMS.

1.3 DESIGN DIRECTIVES

A. Design Review Meeting:

1. During the Schematic Design phase of the project, the contractor or consultant shall meet with the designated representative of Safety and Security, departmental representatives, and FO&M Access Control Shop Supervisor to review access control system, video surveillance, and intrusion detection requirements for the project. The function of the system will be reviewed at this meeting with the contractor or consultant to gain an understanding of how the system will work. The spatial considerations for the system shall be identified and located.

1.4 ACCESS CONTROL SYSTEMS

A. Access Control System panels shall be provided with a dedicated secured room if possible. Access Control equipment room requirements:

1. Dedicated 120V-20A circuits to each access controller.
2. Terminate power inside access control enclosure 120VAC connection point.
3. Sufficient lighting shall be provided to allow 60 fc lighting level on the panels.
4. Temperature control between 50-75 degrees Fahrenheit.
5. Humidity control: noncondensing.

B. Back-up power will be provided for the security system components as follows:

1. If available, all security system components shall be provided with power from optional standby circuits that are backed-up from via an onsite engine-generator set:

2. The following security system components shall be provided with uninterruptable power supply systems:

   a) Security system servers (including those for the intercom, ACS, IDS, and VSS systems).
   b) Security system workstations (including those for the ACS, IDS and VSS systems).
   c) Security network switches.

3. The following security system components will be provided with either battery back-up or uninterruptable power supply systems:

   a) Access control system (ACS) controllers, card reader modules, input/output boards and network interface boards.
   b) IDS controllers, input/output modules, and network interface boards.

4. Sufficient battery will be provided to maintain the system in an operational mode for 8 hours or as determined during the design review meeting.

C. Exterior doors:

1. The intent is to monitor / control all exterior doors through the Access Control System. Card readers and/or exit only alarm monitoring will be provided on all exterior doors.
2. Where card readers are installed at exterior doors, at least one main door shall have a phone placed at the doorway. Refer to Section 10 17 00 - Telephone Specialties, for details.

D. Interior doors: Electronic access control and other security provisions shall also be implemented for the interior areas of new facilities (and certain existing facilities) based on function and/or occupancy, for example:

1. Telecom Rooms (housing an Individual Distribution Frame [IDF] or a Main Distribution Frame [MDF])
2. Executive offices
3. Classrooms or labs housing sensitive research or equipment
4. Data Centers (dedicated suites, offices, or building areas)
5. Pharmacy and medication supply rooms or closets
6. Hazardous materials, chemicals, or waste storage and recycling areas
7. High-value book storage areas/rooms
8. All Museum areas and other areas housing (for exhibit or storage) acquired art
9. Underground/controlled parking facilities.
10. Individual dorm rooms or suites for student residential housing
11. Mechanical rooms and other areas (for emergency generators, switchgear, plumbing, security equipment, freight elevators, mechanical penthouses, etc.)
12. Student spaces which are open or accessible 24/7 (Novak, 1902 Room, and others)

E. Typical access-controlled door system door includes:

1. A Request to Enter Device (CR).
2. A Request to Exit device (REX).
3. An electrified locking device with integrated RX switch and as applicable a manufacturer's recommended power supply.
4. A Power Transfer Device (EPT).
5. A local audible device (PIEZO).
6. A Door Position Switch (DPS).
7. An interface to a door power operator (as applicable)

F. All door devices cables shall be gathered in a junction box and extended back to an access control panel (ACP), typically to be located in the telecommunication room. Each door shall be independently cabled back to the access control panel in a "Star Configuration".

G. Wireless access control shall only be considered in buildings as a last resort given the following criteria:

1. All proposed systems require review and approval at a mandatory Access Control Design Review Meeting (see below)
2. Networked wireless electronic locks must NOT utilize the Dartmouth WiFi network.
3. Networked wireless electronic locks shall communicate via 900mHz wireless to a Panel Interface Module (PIM) which is hardwired to the Mercury panel using Open Supervised Device Protocol (OSDP) v2.

H. Each Access Control Panel (ACP) shall include:

1. Power supplies and power distribution boards with intelligent monitoring function and Mercury controllers in a unified single enclosure.
2. Cabinet tamper alarm monitoring.
3. An interface to the building fire alarm system.
4. A connection to the Dartmouth College access control VLAN. Two data drops to each access control cabinet.
5. Cabinet tamper alarm monitoring.

1.5 INTRUSION DETECTION SYSTEMS

A. Intrusion detection shall be applied to provide protection of persons and assets as required for each building.

B. Intrusion Detection System (IDS) control panels must be IP Addressable panels.

C. The IDS shall be integrated with the access control system via zone based hard wired I/O linking.

1. Intrusion Devices:

a) Glass break sensors and/or dual technology motion detectors shall be provided where directed by DC in all rooms that have exterior glass up to 18 feet above finished grade.
b) Manually operated duress devices shall be provided at all Point-of-Sale locations, reception desk, or locations otherwise directed by the Owner.
c) Door position switches for IDS will be shared with the Access Control System.
d) Photoelectric Beam detectors at locations where directed by the Owner.
e) Alphanumeric keypads shall be provided at locations where directed by the Owner.

1.6 VIDEO SURVEILLANCE SYSTEMS

A. Video Surveillance shall be provided to provide surveillance of persons and assets as required.

1. Cameras shall be compatible with the ExacqVision Video Management Software platform. AXIS cameras are the preferred product.
2. Network recorders are installed at the University's Data Center. All server hardware, provisioning of IP addresses and storage is provided by the University's IT Department. Contractor shall be required to provide software licenses for each camera.

TYPICAL DIAGRAMS

List of current installation details:

ACS Door Details	Description
ACS-GEN1	General Requirements
ACS-GEN2	Typical Door Contact
ACS-GEN3	Typical Access Control Panel
ACS-S1	Door Type S1 – Emergency egress only single door
ACS-S2	Door Type S2 – Egress only single door with RX motion/piezo
ACS-S3	Door Type S3 – Egress only single door with RX in hardware and local alarm sounder.
ACS-S4	Door Type S4 – Access controlled single door with electric mortise lock and optional local alarm sounder
ACS-S5	Door Type S5 – Access controlled single door with electrified exit device, optional local alarm sounder and door operator
ACS-S6	Door Type S6 – Access controlled single door with magnetic lock
ACS-S7	Door Type S7 – Access controlled single door with delayed egress exit device and free egress
ACS-S8	Door Type S8 – Access controlled single door with delayed egress exit device and card in/out
ACS-S9	Door Type S9 – Access controlled single door with electric

	strike, optional door operator and local door alarm sounder
ACS-D1	Door Type D1 – Emergency egress only double door
ACS-D2	Door Type D2 – Egress only double door with RX motion/piezo
ACS-D3	Door Type D3 – Egress only double door with RX in hardware and local alarm sounder
ACS-D4	Door Type D4 – Access controlled double door with electric mortise lock and local alarm sounder (optional)
ACS-D5	Door Type D5 – Access controlled double door with electrified exit device, options local alarm sounder and door operator
ACS-D6	Door Type D6 – Access controlled double door with magnetic lock
ACS-D7	Door Type D7 – Access controlled double door with delayed egress exit device and RX
ACS-D8	Door Type D8 – Access controlled double door with delayed egress exit device and card in/out
VSS Camera Details	**Description**
VSS-GEN1	General Requirements
VSS-CFM	Typical Flush Ceiling Mounted Camera
VSS-CSM	Typical Surface Ceiling Mounted Camera
VSS-WSM	Typical Surface Wall Mounted Camera
VSS-WPM	Typical Wall Pendant Mounted Camera
VSS-WPM	Typical Ceiling Pendant Mounted Camera
VSS-CRM	Typical Corner Mounted Camera
IDS Device Details	**Description**
IDS-GEN1	General Requirements
IDS-MD1	Typical Ceiling Mounted Motion Detector
IDS-MD2	Typical Wall Mounted Motion Detector
IDS-GB1	Typical Ceiling Mounted Glassbreak Detector
IDS-KP	Typical IDS keypad
IDS-CP	Typical IDS Control Panel
IDS-DB	Typical IDS Duress Button

END OF SECTION 28 00 00

GENERAL NOTES:

1. SECURITY CABLING SHALL BE INSTALLED IN CONDUIT IN WALLS AND CEILINGS WHERE ROUTED THROUGH NON-RESTRICTED (PUBLIC SPACE). WHERE ROUTED THROUGH ACCESSIBLE CEILINGS IN RESTRICTED SPACE SECURITY CABLES MAY BE SUPPORTED BY J-HOOKS SPACED NO MORE THAN 5' APART OR BY CABLE TRAY. RESTRICTED SPACE IS THAT SPACE THAT CANNOT BE ENTERED WITHOUT PASSING THROUGH A CARD READER CONTROLLED DOOR.
2. WHERE CABLES PASS THROUGH SPACES WITH EXPOSED CEILING OR ABOVE INACCESSIBLE CEILING, INSTALL CABLES IN CONDUIT.
3. PROVIDE CONDUIT SLEEVES THROUGH ALL WALL PENETRATIONS AND FIRESTOP AS REQUIRED FOR PARTITION TYPE.
4. CABLING INSTALLED ON J-HOOKS, AND CONDUIT RUNS SHALL BE ROUTED PARALLEL OR PERPENDICULAR TO WALLS AND STRUCTURAL ELEMENTS. RUNNING CABLING OR CONDUIT DIAGONALLY ACROSS ANY SPACE, INCLUDING AREAS CONCEALED ABOVE FINISHED CEILING, SHALL NOT BE PERMITTED. ROUTE CABLING ON J-HOOKS OR IN TELECOM CABLE RUNWAY IN A NEAT BUNDLE HELD TOGETHER WITH PLENUM RATED VELCRO FASTENERS.
5. CONDUIT, WIRING, AND ASSOCIATED JUNCTION BOXES SHALL BE CONCEALED WITHIN WALLS, FLOORS, OR CEILINGS UNLESS OTHERWISE NOTED. PROVIDE PULL STRING SECURED ON BOTH SIDES IN ALL CONDUIT DURING ROUGH-IN.
6. HOMERUNS FOR MULTIPLE LIKE DEVICES CAN BE COMBINED INTO A SINGLE CONDUIT AS LONG AS THE OVERALL CAPACITY OF THE HOMERUN IS EQUAL TO OR LARGER THAN THE CAPACITY (AREA) OF THE INDIVIDUAL CONDUITS IT INCORPORATES. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO CALCULATE THE CONDUIT CAPACITY REQUIRED TO INCLUDE CABLING FROM MULTIPLE DOORS, CAMERAS, OR INTERCOMS TO ENSURE THAT THE NEC REQUIRED FILL IS NOT EXCEEDED.
7. BACK BOXES SHALL BE FLUSH MOUNTED UNLESS OTHERWISE NOTED, AND WHERE REQUIRED, COMPLY WITH THE ABAAG HEIGHT SPECIFICATIONS.
8. JUNCTION BOXES SHALL BE INSTALLED AT LOGICAL, ACCESSIBLE LOCATIONS WITH NO MORE THAN 180 DEGREES OF BENDS BETWEEN PULL BOXES DURING INSTALLATION, OR NO MORE THAN 200' DISTANCE BETWEEN PULL BOXES.
9. CONDUIT PENETRATIONS THROUGH NON FIRE RATED WALLS SHALL BE CAULKED ON BOTH SIDES WITH RESILIENT NON-HARDENING SEALANT.

DOOR HARDWARE NOTES:

1. COORDINATE DOOR ROUGH-IN AND WIRING REQUIREMENTS WITH THE FINAL DOOR SCHEDULE AND DOOR HARDWARE SPECIFICATIONS.
2. UNLESS OTHERWISE NOTED, DOOR LOCKS SHALL BE POWERED BY THE LOCKING HARDWARE POWER SUPPLIES LOCATED WITH THE SECURITY ENCLOSURES. EACH DOOR LOCK SHALL BE CONNECTED TO AN INDIVIDUALLY FUSED CLASS 2 RATED POWER CONNECTION AT THE LIFE SAFETY POWER SUPPLY DOOR CONTROL MODULE. DO NOT DOUBLE LUG.
3. SIZE POWER CONDUCTORS BETWEEN THE DOOR LOCKING HARDWARE POWER SUPPLIES AND THE LOCK SUCH THAT THE VOLTAGE LOSS DOES NOT EXCEED 10%.
4. CONFIGURE LOCK POWER SUPPLY DOOR CONTROL MODULE(S) TO RELEASE DOORS THAT ARE LOCKED IN THE DIRECTION OF EGRESS UPON FIRE ALARM OR POWER FAILURE. COORDINATE WITH FIRE ALARM DRAWINGS AND EGRESS PLANS.
5. MOUNT DOOR JUNCTION BOX ABOVE ACCESSIBLE CEILING ON SECURE SIDE OF DOOR. FOR DOORS WITH FINISHED CEILINGS ON SECURE SIDE MOUNT IN NEAREST ACCESSIBLE CEILING SPACE.
6. 120VAC BY ELECTRICAL CONTRACTOR.
7. COORDINATE EXIT DEVICE TYPE WITH FINAL DOOR HARDWARE SCHEDULE AND DOOR HARDWARE CONTRACTOR. DOORS EQUIPPED WITH ELECTRIC LATCH RETRACTION TYPE LOCKING HARDWARE SHALL BE POWERED BY STANDALONE POWER SUPPLIES LOCATED AT EACH DOOR PROVIDED UNDER DIVISION 8 SPECIFICATIONS. EXIT DEVICES WITH LOW CURRENT DRAW MOTOR DRIVEN RETRACTION OR ELECTRIC TRIM SHALL BE POWERED FROM THE DOOR LOCKING HARDWARE POWER SUPPLY AT THE SECURITY ENCLOSURES. EXIT DEVICE POWER SUPPLY PROVIDED UNDER DIVISION 8 SPECIFICATIONS. COORDINATE WITH THE FINAL DOOR HARDWARE SCHEDULE FOR LOCATIONS WHERE REQUIRED. TYPICALLY WITH QEL TYPE EXIT DEVICES THE HARDWARE CAN BE POWERED BY THE LOCK POWER SUPPLY AT THE SECURITY ENCLOSURES. FOR DOOR PAIRS WHERE BOTH LEAVES ARE ELECTRICALLY UNLOCKED A LOCAL POWER SUPPLY WILL BE REQUIRED.
8. COORDINATE WITH USER GROUPS AND/OR DEPARTMENT OF SAFETY AND SECURITY FOR LOCATIONS WHERE LOCAL DOOR ALARM SOUNDER IS REQUIRED.
9. COORDINATE EXIT DEVICE TYPE WITH FINAL DOOR HARDWARE SCHEDULE AND DOOR HARDWARE CONTRACTOR. DOORS EQUIPPED WITH ELECTRIC LATCH RETRACTION TYPE LOCKING HARDWARE SHALL BE POWERED BY STANDALONE POWER SUPPLIES LOCATED AT EACH DOOR PROVIDED UNDER DIVISION 8 SPECIFICATIONS. EXIT DEVICES WITH LOW CURRENT DRAW MOTOR DRIVEN RETRACTION OR ELECTRIC TRIM SHALL BE POWERED FROM THE DOOR LOCKING HARDWARE POWER SUPPLY AT THE SECURITY ENCLOSURES.

SECURITY DEVICE SYMBOLS AND ROUGH-IN REQUIREMENTS

	BACKBOX TYPE	DRAWING SYMBOL	MOUNTING HEIGHT	NOTES
CARD READER	SINGLE GANG	CR	42" A.F.F.	
RTE MOTION	SINGLE GANG	REX	CEILING	
DOOR POSITION SENSOR	N/A	M	N/A	STUB INTO HEADER
REQUEST TO EXIT PUSHBUTTON	SINGLE GANG	X	42" A.F.F.	
LOCAL DOOR ALARM	SINGLE GANG	LA	42" A.F.F.	
AUTOMATIC DOOR ACTUATOR	SINGLE GANG	DA	42" A.F.F	ADJACENT TO CARD READER

GENERAL NOTES:

1. FOR ALL DOOR HARDWARE STUB CONDUIT INTO DOOR FRAME OR HEADER AS INDICATED

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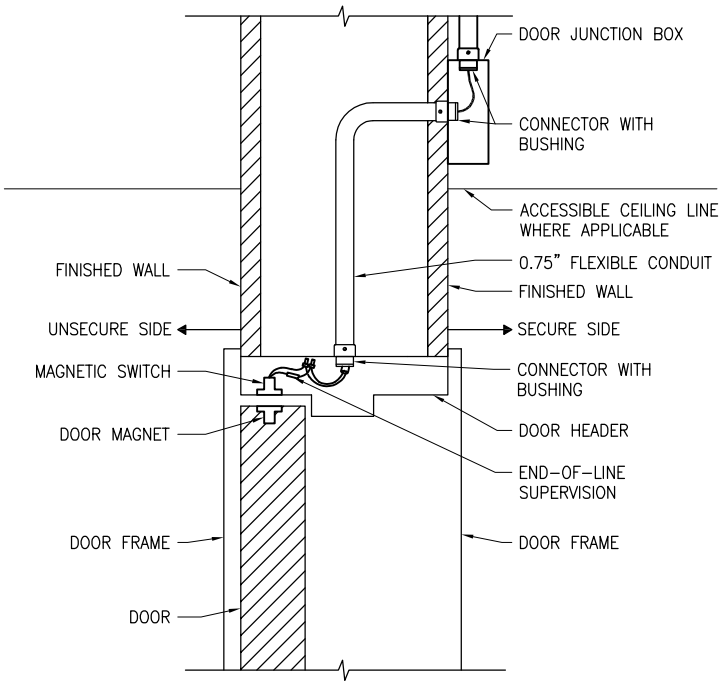
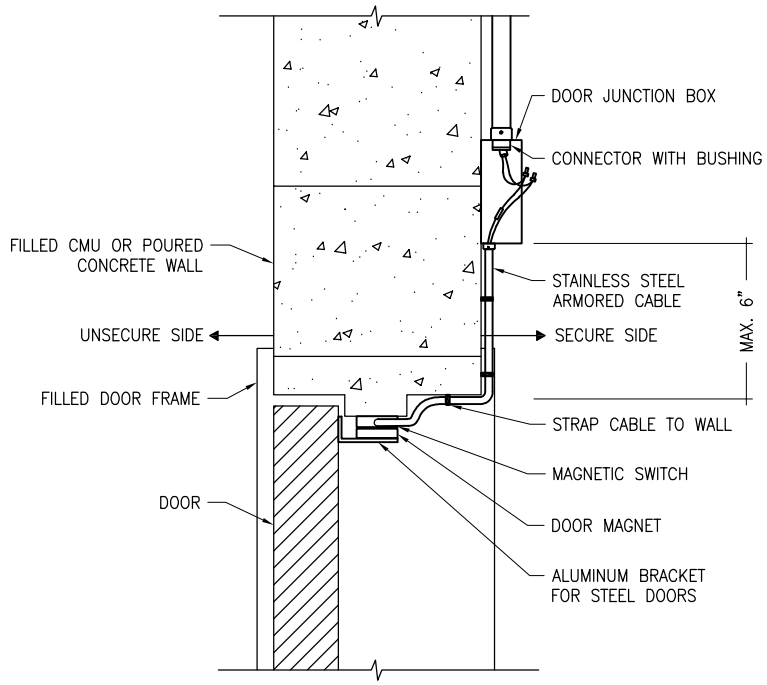
Title	GENERAL REQUIREMENTS		
System	ACCESS CONTROL	Revision	1.0
Date	2/14/2024	Scale	NTS

ACS-GEN1



1 RECESSED MAGNETIC SWITCH
N.T.S.



2 SURFACE MOUNTED MAGNETIC SWITCH
N.T.S.

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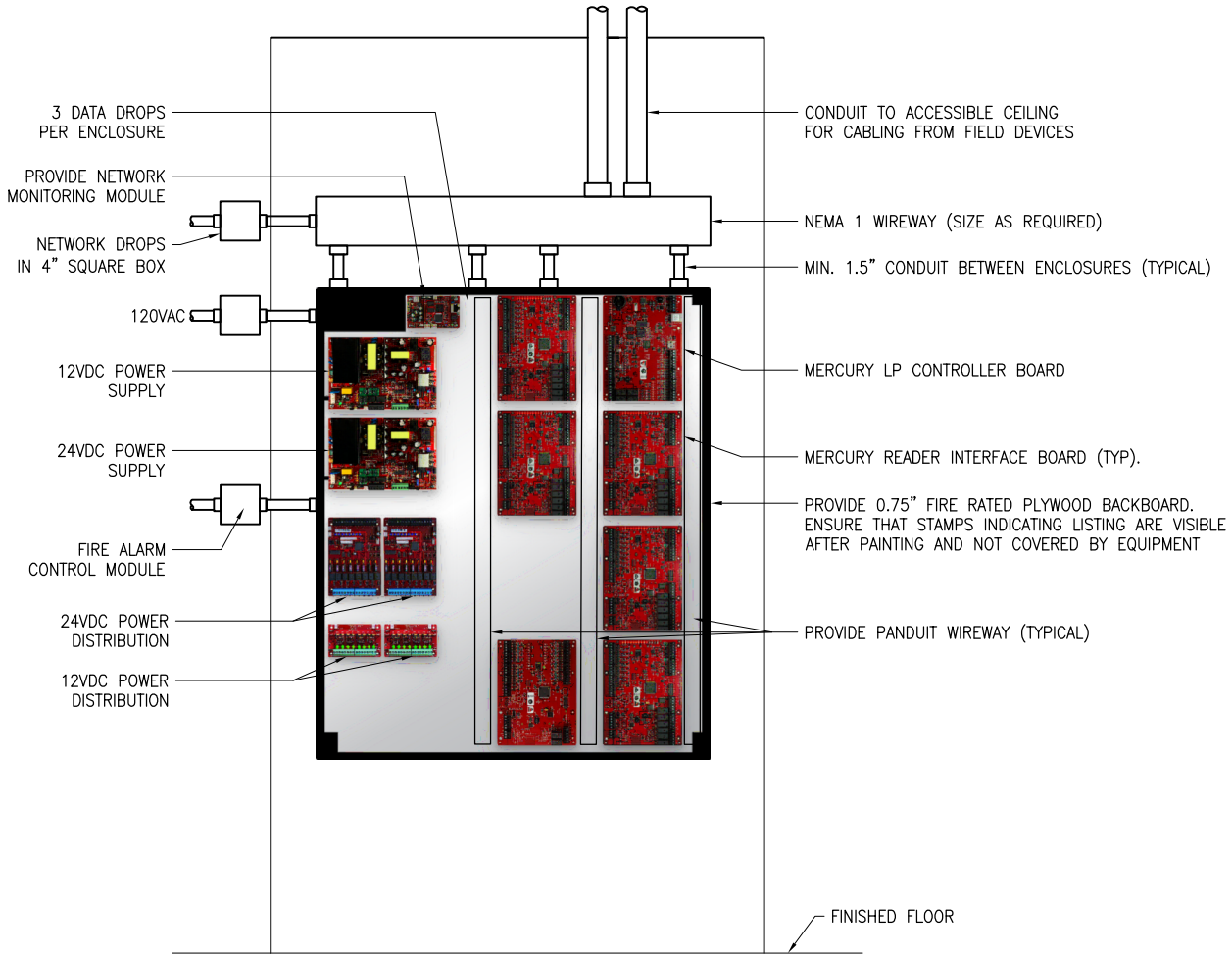
Title	TYPICAL DOOR CONTACT		
System	ACCESS CONTROL	Revision	1.0
Date	2/14/2024	Scale	NTS

ACS-GEN2



NOTES:

1. DETAIL INDICATES GENERIC LAYOUT AND EQUIPMENT QUANTITIES. COORDINATE WITH ACCESS CONTROL SHOP, TYPE OF EQUIPMENT PROVIDED AND FIELD CONDITIONS.
2. FOR EACH LOCATION PROVIDE MINIMUM 16-DOOR ENCLOSURE WITH READER AND I/O BOARD CONFIGURED FOR THE DOORS SUPPORTED AT THE TIME OF INSTALLATION. PROVIDE 25% SPARE CAPACITY. IF THE NUMBER OF BOARDS EXCEED THE THRESHOLD OF SPARE CAPACITY, PROVIDE AN ADDITIONAL 16-DOOR ENCLOSURE WITH FULLY LOADED POWER CONFIGURATION AND AN LP1502 CONTROLLER BOARD.
3. CONFIGURE ACS PANEL TO MONITOR AC POWER FAILURE AND LOW BATTERY CONDITION OF EACH POWER SUPPLY.

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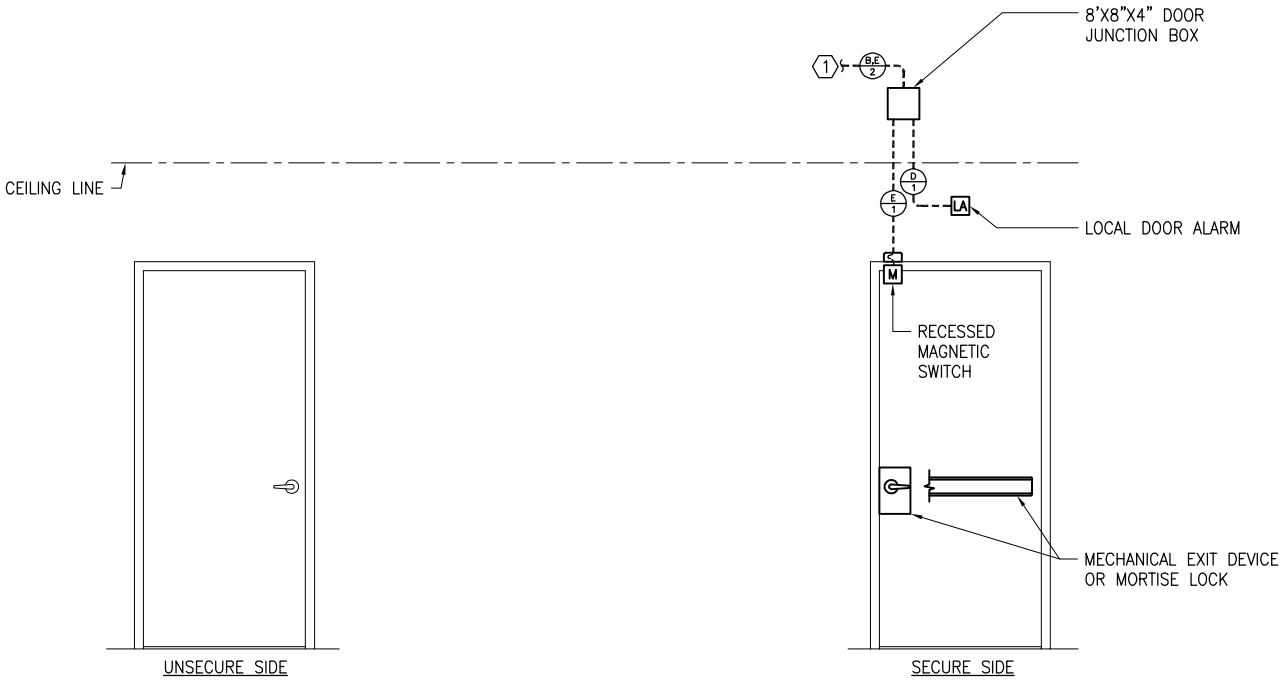
Title	TYPICAL ACCESS CONTROL PANEL		
System	ACCESS CONTROL	Revision	1.0
Date	2/14/2024	Scale	NTS

ACS-GEN3



DOOR SEQUENCE OF OPERATION:

FROM BOTH SIDES: OPENING THE DOOR SHALL START A FORCED DOOR SEQUENCE. THE SYSTEM SHALL IMMEDIATELY ACTIVATE THE LOCAL AUDIBLE DEVICE, GENERATE A FORCED DOOR ALARM LOGGED TO TO THE SYSTEM DATABASE AND REPORTED TO THE DEPARTMENT OF SAFETY AND SECURITY.

GENERAL NOTES:

1. THIS DETAIL IS ONLY TO BE USED FOR NEW EMERGENCY EGRESS ONLY DOORS.

KEYED NOTES:

(1) CABLING/CONDUIT TO SECURITY ENCLOSURES. REFERENCE DRAWING ACS-GEN1 FOR CONDUIT AND CABLE ROUTING REQUIREMENTS.

CABLE TYPE LEGEND: A/2

A – OSDP V.2 COMPLIANT COMPOSITE CABLE.
A.1 – COMPOSITE CABLE AWG22-4C (CR)
A.2 – COMPOSITE CABLE AWG18-4C (LOCK)
A.3 – COMPOSITE CABLE AWG22-2C (CONTACT)
A.4 – COMPOSITE CABLE AWG22-4C (REX PIR)
B – AWG18-4C
C – AWG18-2C
D – AWG22-4C
E – AWG22-2C
F – AWG22-4C OSDP
G – AWG22-6C

CONDUIT LEGEND: A/2

1 – 0.5" CONDUIT
2 – 0.75" CONDUIT
3 – 1" CONDUIT

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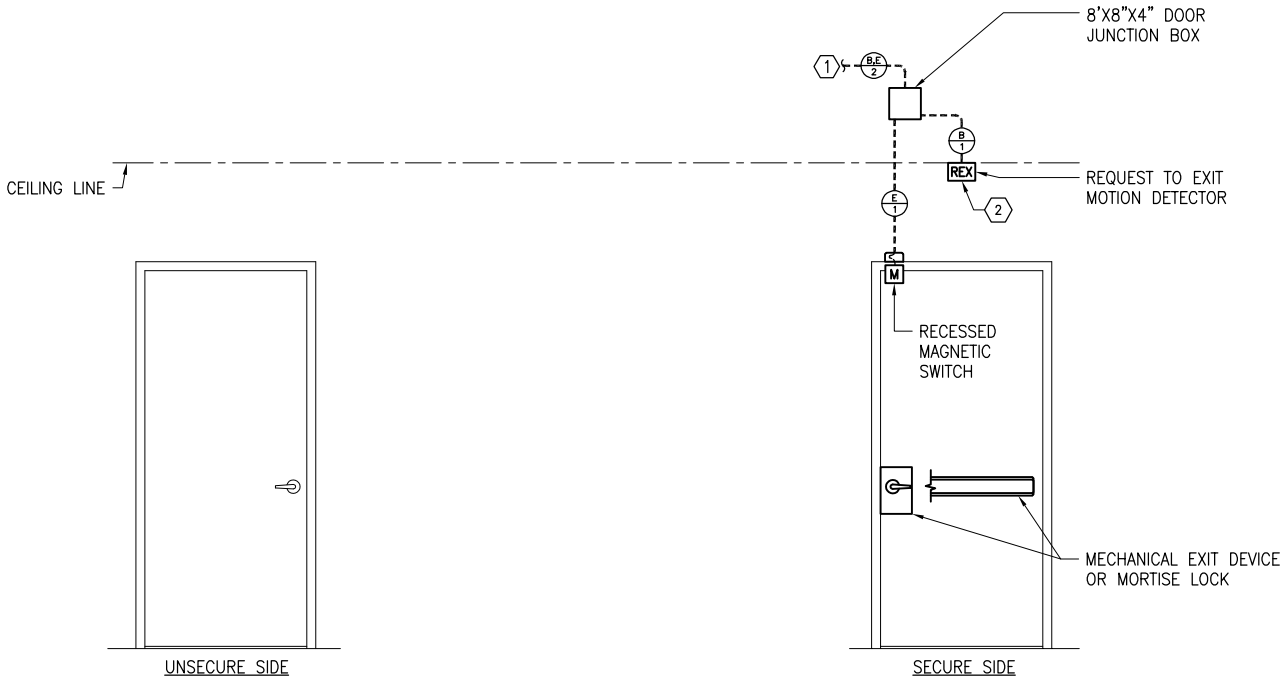
Title	DOOR TYPE S1		
System	ACCESS CONTROL	Revision	1.0
Date	2/14/2024	Scale	NTS

ACS-S1



DOOR SEQUENCE OF OPERATION:

FROM THE EXTERIOR: NO ENTRY IS PROVIDED.

FROM THE SECURE SIDE: FREE EGRESS IS PROVIDED. ACTIVATION OF THE REQUEST TO EXIT MOTION DETECTOR SHALL BYPASS THE DOOR CONTACT AND ALLOW FREE EGRESS.

DOOR HELD OPEN SEQUENCE (FOR EXTERIOR DOORS): SIXTY SECONDS (PROGRAMMABLE) FROM A DOOR POSITION CHANGE OF STATE, THE SYSTEM SHALL ACTIVATE THE LOCAL AUDIBLE DEVICE. NINETY SECONDS PROGRAMMABLE) FROM DOOR POSITION CHANGE OF STATE A DOOR HELD OPEN ALARM SHALL BE GENERATED, LOGGED TO THE SYSTEM DATABASE AND REPORTED TO THE DEPARTMENT OF SAFETY AND SECURITY

DOOR FORCED ALARM SEQUENCE FOR EXTERIOR DOORS): OPENING THE DOOR WITHOUT A VALID REQUEST TO EXIT SIGNAL SHALL START A FORCED DOOR SEQUENCE. THE SYSTEM SHALL IMMEDIATELY ACTIVATE THE LOCAL AUDIBLE DEVICE, GENERATE A FORCED DOOR ALARM LOGGED TO TO THE SYSTEM DATABASE AND REPORTED TO THE DEPARTMENT OF SAFETY AND SECURITY.

GENERAL NOTES:

1. THIS DETAIL IS ONLY TO BE USED FOR EXISTING DOOR WHERE THE EXISTING HARDWARE CANNOT BE REPLACED.

KEYED NOTES:

(1) CABLING/CONDUIT TO SECURITY ENCLOSURES. REFERENCE DRAWING ACS-GEN1 FOR CONDUIT AND CABLE ROUTING REQUIREMENTS.

(2) REQUEST TO EXIT SENSOR SHALL HAVE INTEGRATED PIEZO ALARM.

CABLE TYPE LEGEND: A 2

A – OSDP V.2 COMPLIANT COMPOSITE CABLE.
A.1 – COMPOSITE CABLE AWG22-4C (CR)
A.2 – COMPOSITE CABLE AWG18-4C (LOCK)
A.3 – COMPOSITE CABLE AWG22-2C (CONTACT)
A.4 – COMPOSITE CABLE AWG22-4C (REX PIR)
B – AWG18-4C
C – AWG18-2C
D – AWG22-4C
E – AWG22-2C
F – AWG22-4C OSDP
G – AWG22-6C

CONDUIT LEGEND: A 2

1 – 0.5" CONDUIT
2 – 0.75" CONDUIT
3 – 1" CONDUIT

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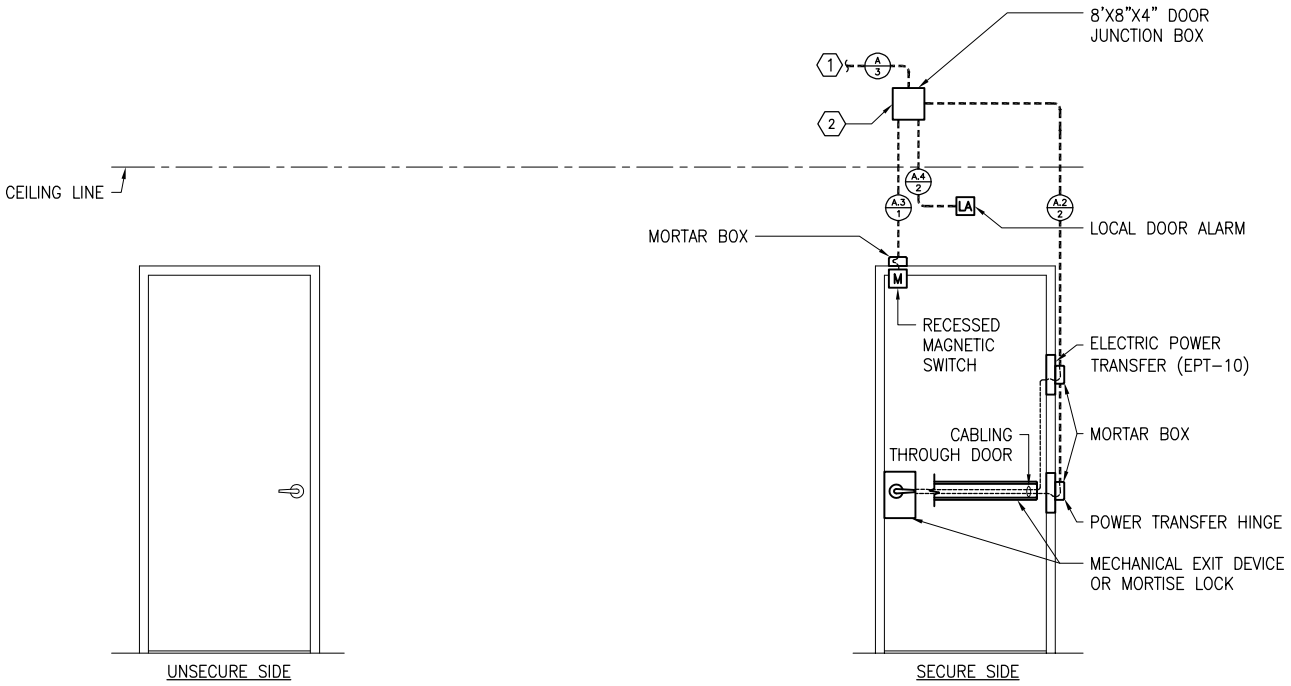
Title	DOOR TYPE S2		
System	ACCESS CONTROL	Revision	1.0
Date	2/14/2024	Scale	NTS

ACS-S2



DOOR SEQUENCE OF OPERATION:

FROM THE EXTERIOR: NO ENTRY IS PROVIDED.

FROM THE SECURE SIDE: FREE EGRESS IS PROVIDED. ACTIVATION OF THE REQUEST TO EXIT MOTION DETECTOR SHALL BYPASS THE DOOR CONTACT AND ALLOW FREE EGRESS.

DOOR HELD OPEN SEQUENCE (FOR EXTERIOR DOORS): SIXTY SECONDS (PROGRAMMABLE) FROM A DOOR POSITION CHANGE OF STATE THE SYSTEM SHALL ACTIVATE THE LOCAL AUDIBLE DEVICE. NINETY SECONDS PROGRAMMABLE) FROM DOOR POSITION CHANGE OF STATE A DOOR HELD OPEN ALARM SHALL BE GENERATED, LOGGED TO THE SYSTEM DATABASE AND REPORTED TO THE DEPARTMENT OF SAFETY AND SECURITY

DOOR FORCED ALARM SEQUENCE FOR EXTERIOR DOORS): OPENING THE DOOR WITHOUT A VALID REQUEST TO EXIT SIGNAL SHALL START A FORCED DOOR SEQUENCE. THE SYSTEM SHALL IMMEDIATELY ACTIVATE THE LOCAL AUDIBLE DEVICE, GENERATE A FORCED DOOR ALARM LOGGED TO TO THE SYSTEM DATABASE AND REPORTED TO THE DEPARTMENT OF SAFETY AND SECURITY.

GENERAL NOTES:

1. THIS DETAIL IS ONLY TO BE USED FOR NEW EXIT ONLY DOORS WHERE FREE EGRESS IS REQUIRED BUT DOOR HELD OPEN MUST BE MONITORED.

KEYED NOTES:

(1) CABLING/CONDUIT TO SECURITY ENCLOSURES. REFERENCE DRAWING ACS-GEN1 FOR CONDUIT AND CABLE ROUTING REQUIREMENTS.

(2) CARD READER CABLE FROM COMPOSITE CABLE SHALL BE COILED UP AS SPARE IN THE DOOR JUNCTION BOX. PROVIDE SUFFICIENT LENGTH TO REACH FUTURE CARD READER.

CABLE TYPE LEGEND: A/2

A – OSDP V.2 COMPLIANT COMPOSITE CABLE.
- A.1 – COMPOSITE CABLE AWG22-4C (CR)
- A.2 – COMPOSITE CABLE AWG18-4C (LOCK)
- A.3 – COMPOSITE CABLE AWG22-2C (CONTACT)
- A.4 – COMPOSITE CABLE AWG22-4C (REX PIR)

B – AWG18-4C
C – AWG18-2C
D – AWG22-4C
E – AWG22-2C
F – AWG22-4C OSDP
G – AWG22-6C

CONDUIT LEGEND: A/2

1 – 0.5" CONDUIT
2 – 0.75" CONDUIT
3 – 1" CONDUIT

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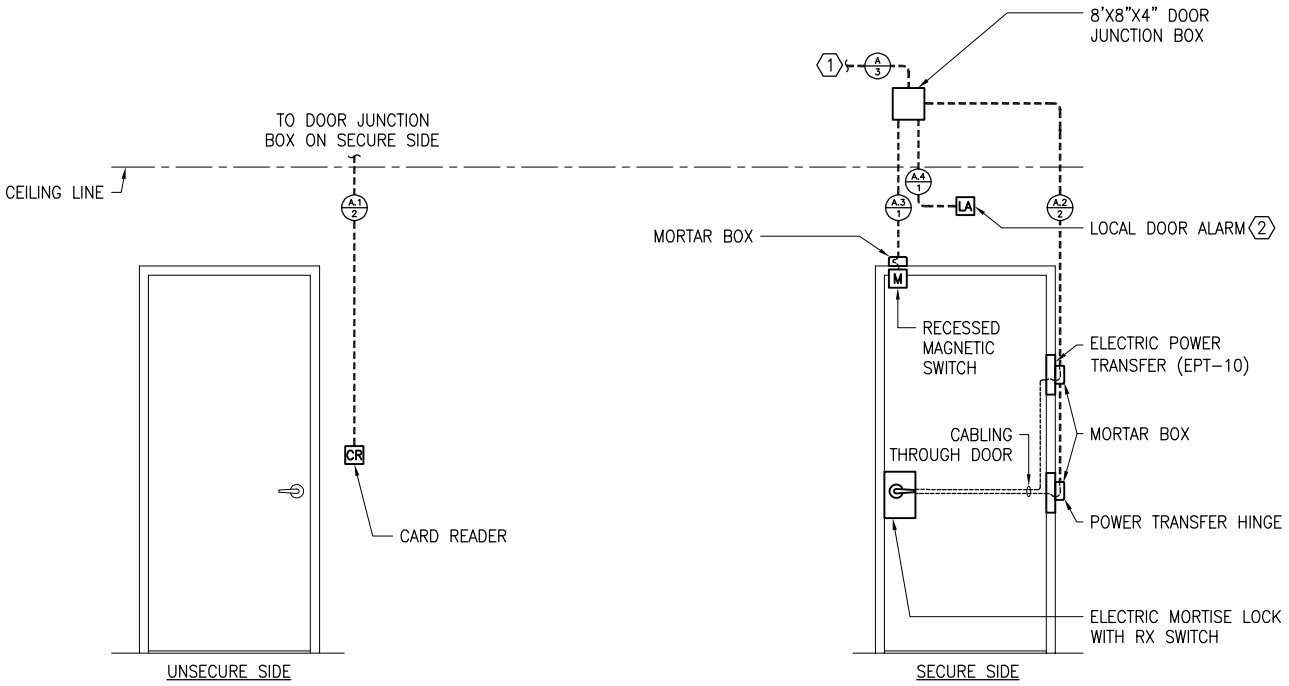
Title	DOOR TYPE S3		
System	ACCESS CONTROL	Revision	1.0
Date	2/14/2024	Scale	NTS

ACS-S3



DOOR SEQUENCE OF OPERATION:

FROM THE UNSECURE SIDE: UPON A VALID CARD READ THE ACS SHALL UNLOCK THE DOOR AND SHUNT THE DOOR CONTACT. AFTER THE DOOR IS OPENED THE LOCK SHALL IMMEDIATELY RELOCK.

FROM THE SECURE SIDE: FREE EGRESS IS PROVIDED. PRESSING THE DOOR HANDLE SHALL SHUNT THE DOOR CONTACT AND ALLOW FREE EGRESS.

DOOR HELD OPEN SEQUENCE (FOR EXTERIOR DOORS): SIXTY SECONDS (PROGRAMMABLE) FROM A DOOR POSITION CHANGE OF STATE THE SYSTEM SHALL ACTIVATE THE LOCAL AUDIBLE DEVICE. NINETY SECONDS PROGRAMMABLE) FROM DOOR POSITION CHANGE OF STATE A DOOR HELD OPEN ALARM SHALL BE GENERATED, LOGGED TO THE SYSTEM DATABASE AND REPORTED TO THE DEPARTMENT OF SAFETY AND SECURITY

DOOR FORCED ALARM SEQUENCE FOR EXTERIOR DOORS): OPENING THE DOOR WITHOUT A VALID CARD READ OR REQUEST TO EXIT SIGNAL SHALL START A FORCED DOOR SEQUENCE. THE SYSTEM SHALL IMMEDIATELY ACTIVATE THE LOCAL AUDIBLE DEVICE, GENERATE A FORCED DOOR ALARM LOGGED TO TO THE SYSTEM DATABASE AND REPORTED TO THE DEPARTMENT OF SAFETY AND SECURITY.

GENERAL NOTES:

1. THIS DETAIL IS INTENDED TO BE USED FOR NEW CARD ACCESS CONTROLLED DOORS WITH ELECTRIC LOCKS, WHERE FREE EGRESS IS REQUIRED BUT DOOR HELD OPEN MUST BE MONITORED.

KEYED NOTES:

(1) CABLING/CONDUIT TO SECURITY ENCLOSURES. REFERENCE DRAWING ACS-GEN1 FOR CONDUIT AND CABLE ROUTING REQUIREMENTS.

(2) PROVIDE ONLY AT EXTERIOR DOORS OR WHERE SPECIFICALLY REQUESTED BY USERS.

CABLE TYPE LEGEND: A 2

A – OSDP V.2 COMPLIANT COMPOSITE CABLE.
A.1 – COMPOSITE CABLE AWG22-4C (CR)
A.2 – COMPOSITE CABLE AWG18-4C (LOCK)
A.3 – COMPOSITE CABLE AWG22-2C (CONTACT)
A.4 – COMPOSITE CABLE AWG22-4C (REX PIR)
B – AWG18-4C
C – AWG18-2C
D – AWG22-4C
E – AWG22-2C
F – AWG22-4C OSDP
G – AWG22-6C

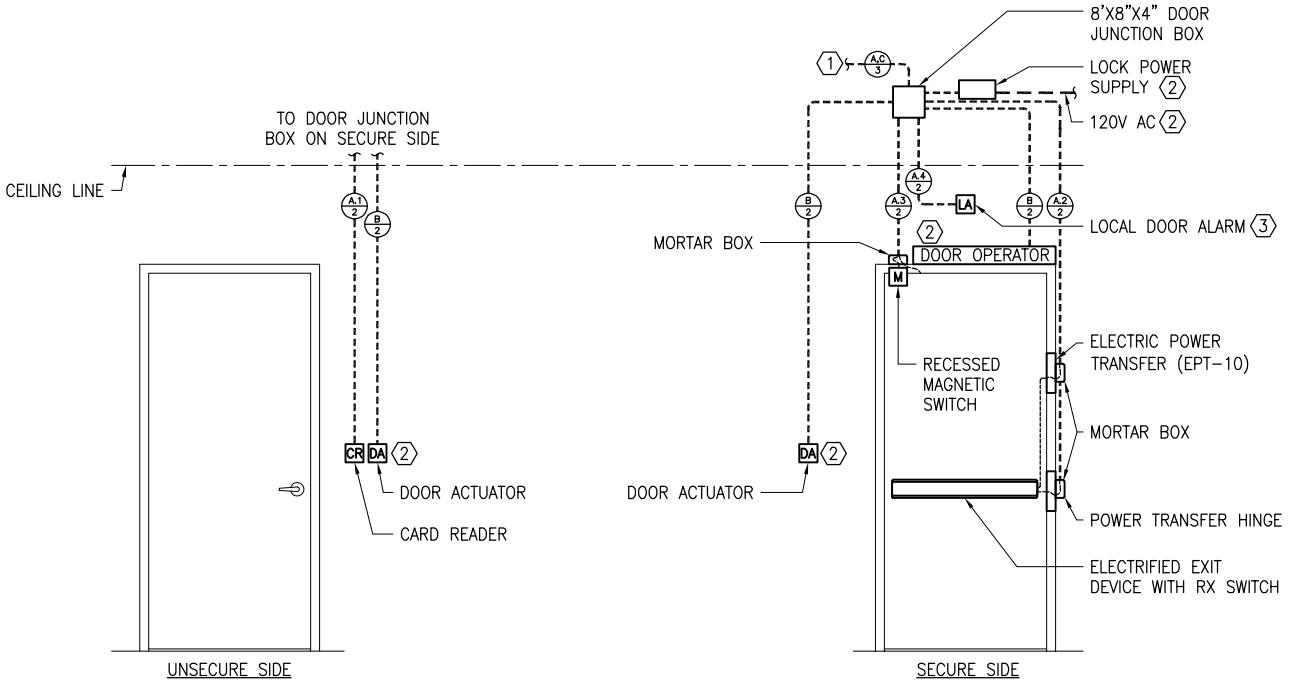
CONDUIT LEGEND: A 2

1 – 0.5" CONDUIT
2 – 0.75" CONDUIT
3 – 1" CONDUIT

Dartmouth College
Facilities Operations
& Management

Title	DOOR TYPE S4		
System	ACCESS CONTROL	Revision	1.0
Date	2/14/2024	Scale	NTS

ACS-S4



DOOR SEQUENCE OF OPERATION:

FROM THE UNSECURE SIDE: UPON A VALID CARD READ THE ACS SHALL UNLOCK THE DOOR AND SHUNT THE DOOR CONTACT. AS SOON AS THE DOOR IS OPENED THE LOCK SHALL AUTOMATICALLY RELOCK.

FROM THE SECURE SIDE: FREE EGRESS IS PROVIDED. DEPRESSING THE EXIT DEVICE SHALL SEND A REQUEST TO EXIT SIGNAL TO THE ACS TO SHUNT THE DOOR CONTACT AND ALLOW FREE EGRESS.

DOOR ACTUATOR FUNCTIONS: THE EXTERIOR DOOR ACTUATOR SHALL BE ONLY ACTIVE WHEN THE LOCK IS IN THE UNLOCKED POSITION. THE INTERIOR DOOR ACTUATOR SHALL BE PROVIDED WITH DPDT SWITCH TO ALLOW A SIGNAL TO BE SENT TO THE OPERATOR AND ANOTHER SIGNAL TO BE SENT TO THE ACS FOR REQUEST TO EXIT.

DOOR HELD OPEN SEQUENCE (FOR EXTERIOR DOORS): SIXTY SECONDS (PROGRAMMABLE) FROM A DOOR POSITION CHANGE OF STATE THE SYSTEM SHALL ACTIVATE THE LOCAL AUDIBLE DEVICE. NINETY SECONDS PROGRAMMABLE) FROM DOOR POSITION CHANGE OF STATE A DOOR HELD OPEN ALARM SHALL BE GENERATED, LOGGED TO THE SYSTEM DATABASE AND REPORTED TO THE DEPARTMENT OF SAFETY AND SECURITY

DOOR FORCED ALARM SEQUENCE FOR EXTERIOR DOORS): OPENING THE DOOR WITHOUT A VALID CARD READ OR REQUEST TO EXIT SIGNAL SHALL START A FORCED DOOR SEQUENCE. THE SYSTEM SHALL IMMEDIATELY ACTIVATE THE LOCAL AUDIBLE DEVICE, GENERATE A FORCED DOOR ALARM LOGGED TO TO THE SYSTEM DATABASE AND REPORTED TO THE DEPARTMENT OF SAFETY AND SECURITY.

GENERAL NOTES:

1. THIS DETAIL IS INTENDED TO BE USED FOR NEW CARD ACCESS CONTROLLED DOORS WITH ELECTRIFIED EXIT DEVICE WHERE FREE EGRESS IS REQUIRED BUT AND DOOR HELD IS MONITORED WITH LOCAL ALARM.

KEYED NOTES:

(1) CABLING/CONDUIT TO SECURITY ENCLOSURES. REFERENCE DRAWING ACS-GEN1 FOR CONDUIT AND CABLE ROUTING REQUIREMENTS.

(2) PROVIDED ONLY AT DOORS WITH DOOR OPERATORS.

(3) PROVIDE ONLY AT EXTERIOR DOORS OR WHERE SPECIFICALLY REQUESTED BY USERS.

CABLE TYPE LEGEND: (A/2)

A – OSDP V.2 COMPLIANT COMPOSITE CABLE.
A.1 – COMPOSITE CABLE AWG22-4C (CR)
A.2 – COMPOSITE CABLE AWG18-4C (LOCK)
A.3 – COMPOSITE CABLE AWG22-2C (CONTACT)
A.4 – COMPOSITE CABLE AWG22-4C (REX PIR)
B – AWG18-4C
C – AWG18-2C
D – AWG22-4C
E – AWG22-2C
F – AWG22-4C OSDP
G – AWG22-6C

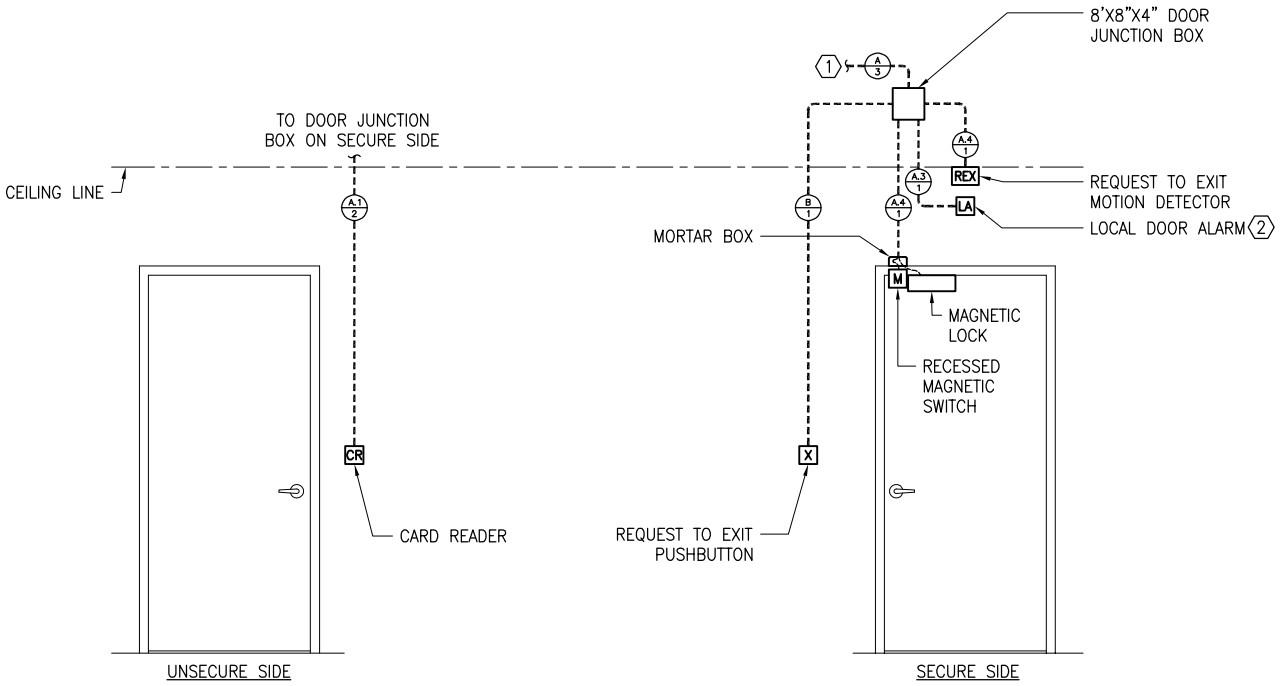
CONDUIT LEGEND: (A/2)

1 – 0.5" CONDUIT
2 – 0.75" CONDUIT
3 – 1" CONDUIT

Dartmouth College
Facilities Operations
& Management

Title	DOOR TYPE S5		
System	ACCESS CONTROL	Revision	1.0
Date	2/14/2024	Scale	NTS

ACS-S5



DOOR SEQUENCE OF OPERATION:

FROM THE UNSECURE SIDE: UPON A VALID CARD READ THE ACS SHALL RELEASE THE MAGLOCK AND SHUNT THE DOOR CONTACT. AS SOON AS THE DOOR IS OPENED THE MAGLOCK SHALL AUTOMATICALLY RE-ENERGIZE.

FROM THE SECURE SIDE: FREE EGRESS IS PROVIDED. UPON APPROACHING THE DOOR THE REQUEST TO EXIT MOTION SENSOR SHALL SEND A SIGNAL TO THE ACS TO RELEASE THE MAGLOCK AND SHUNT THE DOOR CONTACT TO ALLOW FREE EGRESS.

REQUEST TO EXIT PUSHBUTTON WIRING: WIRE THE REQUEST TO EXIT BUTTON SUCH THAT ONE POLE SHALL DIRECTLY INTERRUPT LOCK POWER UPON ACTIVATION, THE OTHER POLE SHALL CONNECT TO THE SAME REQUEST TO EXIT SIGNAL WIRE AS THE MOTION DETECTOR.

FIRE ALARM: CONFIGURE THE LOCK POWER SUPPLY TO RELEASE THE MAGNET ON FIRE ALARM ACTIVATION OR ON LOSS OF BUILDING PRIMARY POWER.

DOOR HELD OPEN SEQUENCE: SIXTY SECONDS (PROGRAMMABLE) FROM A DOOR POSITION CHANGE OF STATE THE SYSTEM SHALL ACTIVATE THE LOCAL AUDIBLE DEVICE. NINETY SECONDS PROGRAMMABLE) FROM DOOR POSITION CHANGE OF STATE A DOOR HELD OPEN ALARM SHALL BE GENERATED, LOGGED TO THE SYSTEM DATABASE AND REPORTED TO THE DEPARTMENT OF SAFETY AND SECURITY

DOOR FORCED ALARM SEQUENCE: OPENING THE DOOR WITHOUT A VALID CARD READ OR REQUEST TO EXIT SIGNAL SHALL START A FORCED DOOR SEQUENCE. THE SYSTEM SHALL IMMEDIATELY ACTIVATE THE LOCAL AUDIBLE DEVICE, GENERATE A FORCED DOOR ALARM LOGGED TO TO THE SYSTEM DATABASE AND REPORTED TO THE DEPARTMENT OF SAFETY AND SECURITY.

GENERAL NOTES:

1. THIS DETAIL IS INTENDED TO BE USED FOR NEW CARD ACCESS CONTROLLED SINGLE DOORS WITH MAGNETIC LOCK AND FREE EGRESS. LOCAL ALARM IS OPTIONAL. THESE SHOULD USED ONLY AS LAST OPTION AS THEY ARE NOT CONSIDERED TO BE SECURE MEANS TO LOCK A DOOR, THEY ARE EASILY DEFEATABLE.

KEYED NOTES:

(1) CABLING/CONDUIT TO SECURITY ENCLOSURES. REFERENCE DRAWING ACS-GEN1 FOR CONDUIT AND CABLE ROUTING REQUIREMENTS.

(2) PROVIDE ONLY AT EXTERIOR DOORS OR WHERE SPECIFICALLY REQUESTED BY USERS.

CABLE TYPE LEGEND: (A/2)

A – OSDP V.2 COMPLIANT COMPOSITE CABLE.
A.1 – COMPOSITE CABLE AWG22-4C (CR)
A.2 – COMPOSITE CABLE AWG18-4C (LOCK)
A.3 – COMPOSITE CABLE AWG22-2C (CONTACT)
A.4 – COMPOSITE CABLE AWG22-4C (REX PIR)
B – AWG18-4C
C – AWG18-2C
D – AWG22-4C
E – AWG22-2C
F – AWG22-4C OSDP
G – AWG22-6C

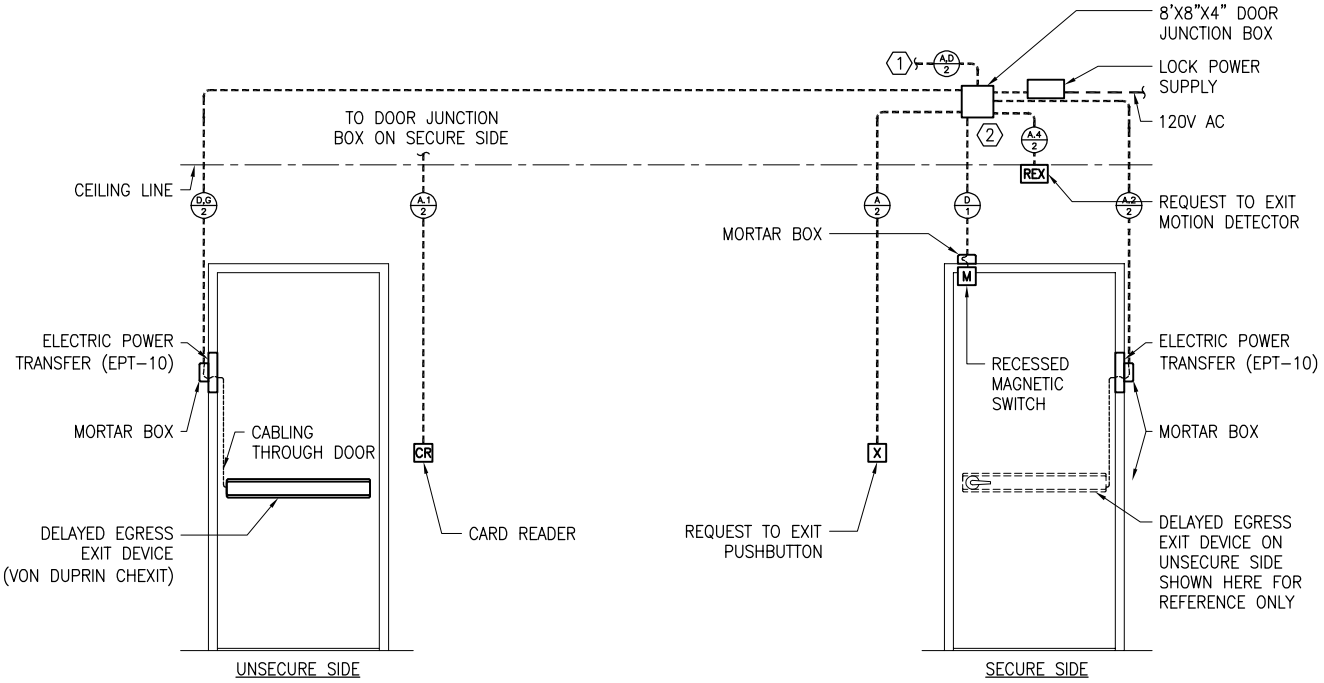
CONDUIT LEGEND: (A/2)

1 – 0.5" CONDUIT
2 – 0.75" CONDUIT
3 – 1" CONDUIT

Dartmouth College
Facilities Operations
& Management

Title	DOOR TYPE S6		
System	ACCESS CONTROL	Revision	1.0
Date	2/14/2024	Scale	NTS

ACS-S6



DOOR SEQUENCE OF OPERATION:

FROM THE UNSECURE SIDE: THE DOOR SHALL BE LOCKED AND DELAYED EGRESS SYSTEM SHALL BE ARMED.

IN AN EMERGENCY: UPON DEPRESSING THE PUSH BAR A WARNING SOUND SHALL SOUND ALERTING THE USER. IF THE BAR IS RELEASED THE WARNING SHALL AUTOMATICALLY RESET. HOLDING THE PUSH BAR SHALL START THE DELAYED EGRESS TIMER (15 OR 30 SECONDS) AND THE LOCAL SOUNDER ALARM. AN ALARM SHALL BE GENERATED, LOGGED TO THE SYSTEM DATABASE AND REPORTED TO THE DEPARTMENT OF SAFETY AND SECURITY AFTER THE TIMER EXPIRES THE DOOR PUSHBALL SHALL RELEASE, ALLOWING EGRESS.

FROM THE UNSECURE SIDE: UPON A VALID CARD READ THE ACS SHALL BYPASS THE DELAYED EGRESS SYSTEM, RELEASE THE PUSHBALL AND SHUNT THE DOOR CONTACT.

FROM THE SECURE SIDE: FREE EGRESS IS PROVIDED. UPON ACTIVATION OF THE REQUEST TO EXIT MOTION DETECTOR OR PRESSING THE REQUEST TO EXIT BUTTON THE ACS SHALL BYPASS THE DELAYED EGRESS SYSTEM, UNLOCK THE DOOR AND SHUNT THE DOOR CONTACT.

DOOR HELD OPEN SEQUENCE: IF THE DOOR IS HELD OPEN LONGER THAN THE PREPROGRAMMED ALLOWED TIME, A DOOR HELD OPEN ALARM SHALL BE GENERATED, THE DELAYED EGRESS ALARM SHALL SOUND AND AND ALARM EVENT SHALL BE LOGGED TO THE SYSTEM DATABASE AND REPORTED TO THE DEPARTMENT OF SAFETY AND SECURITY.

FIRE ALARM: CONNECT FIRE ALARM RELAY DIRECTLY TO THE FIRE ALARM INPUT ON THE DELAYED EGRESS EXIT DEVICE TO ALLOW IMMEDIATE RELEASE IN A FIRE ALARM CONDITION.

GENERAL NOTES:

1. THIS DETAIL IS INTENDED TO BE USED FOR NEW CARD ACCESS CONTROLLED SINGLE DOORS WITH DELAYED EGRESS IN THE CONTROLLED ACCESS DIRECTION AND FREE EGRESS.

KEYED NOTES:

(1) CABLING/CONDUIT TO SECURITY ENCLOSURES. REFERENCE DRAWING ACS-GEN1 FOR CONDUIT AND CABLE ROUTING REQUIREMENTS.

(2) PROVIDE FIRE ALARM CONNECTION TO ALLOW IMMEDIATE DOOR RELEASE UPON FIRE ALARM CONDITION.

CABLE TYPE LEGEND: (A/2)

A – OSDP V.2 COMPLIANT COMPOSITE CABLE.
A.1 – COMPOSITE CABLE AWG22-4C (CR)
A.2 – COMPOSITE CABLE AWG18-4C (LOCK)
A.3 – COMPOSITE CABLE AWG22-2C (CONTACT)
A.4 – COMPOSITE CABLE AWG22-4C (REX PIR)
B – AWG18-4C
C – AWG18-2C
D – AWG22-4C
E – AWG22-2C
F – AWG22-4C OSDP
G – AWG22-6C

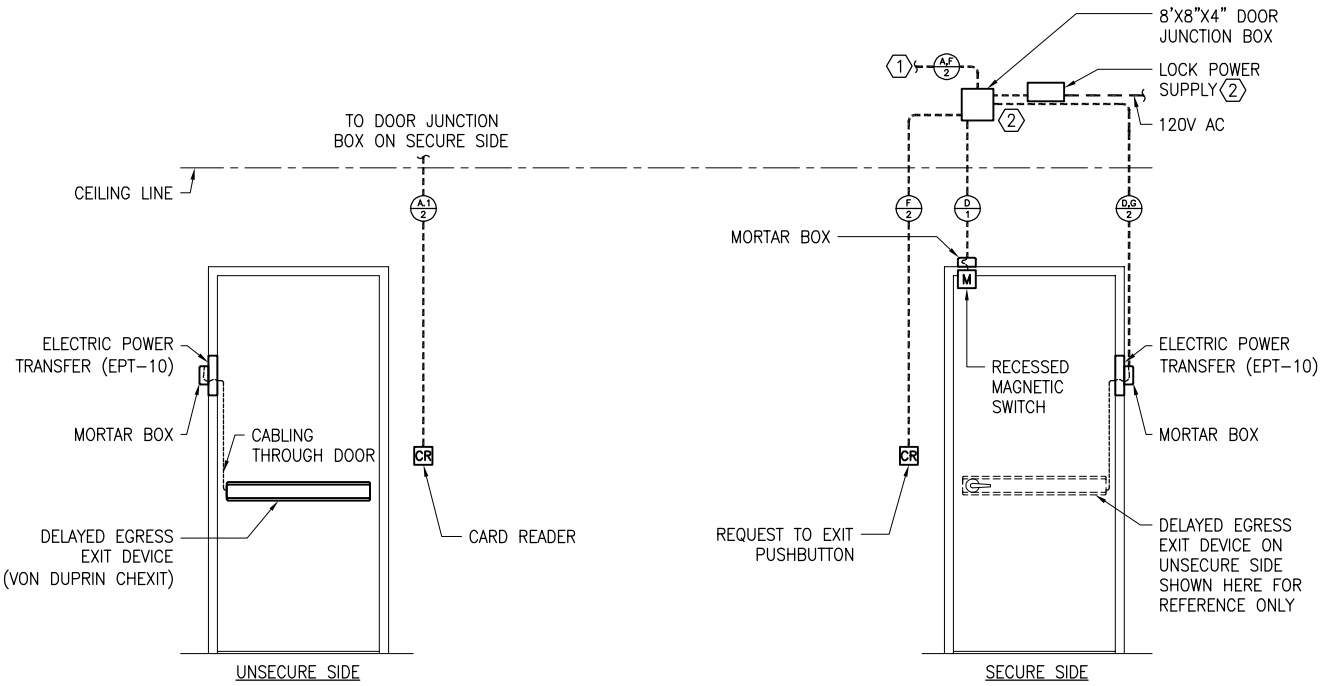
CONDUIT LEGEND: (A/2)

1 – 0.5" CONDUIT
2 – 0.75" CONDUIT
3 – 1" CONDUIT

Dartmouth College
Facilities Operations
& Management

Title	DOOR TYPE S7		
System	ACCESS CONTROL	Revision	1.0
Date	2/14/2024	Scale	NTS

ACS-S7



DOOR SEQUENCE OF OPERATION:

FROM THE UNSECURE SIDE: THE DOOR SHALL BE LOCKED AND DELAYED EGRESS SYSTEM SHALL BE ARMED.

IN AN EMERGENCY: UPON DEPRESSING THE PUSH BAR A WARNING SOUND SHALL SOUND ALERTING THE USER. IF THE BAR IS RELEASED THE WARNING SHALL AUTOMATICALLY RESET. HOLDING THE PUSH BAR SHALL START THE DELAYED EGRESS TIMER (15 OR 30 SECONDS) AND THE LOCAL SOUNDER ALARM. AN ALARM SHALL BE GENERATED, LOGGED TO THE SYSTEM DATABASE AND REPORTED TO THE DEPARTMENT OF SAFETY AND SECURITY AFTER THE TIMER EXPIRES THE DOOR PUSHBAR SHALL RELEASE, ALLOWING EGRESS.

FROM THE UNSECURE SIDE: UPON A VALID CARD READ THE ACS SHALL BYPASS THE DELAYED EGRESS SYSTEM, RELEASE THE PUSHBAR AND SHUNT THE DOOR CONTACT.

FROM THE SECURE SIDE: UPON A VALID CARD READ THE ACS SHALL BYPASS THE DELAYED EGRESS SYSTEM, UNLOCK THE DOOR AND SHUNT THE DOOR CONTACT.

DOOR HELD OPEN SEQUENCE: IF THE DOOR IS HELD OPEN LONGER THAN THE PREPROGRAMMED ALLOWED TIME, A DOOR HELD OPEN ALARM SHALL BE GENERATED, THE DELAYED EGRESS ALARM SHALL SOUND AND AND ALARM EVENT SHALL BE LOGGED TO THE SYSTEM DATABASE AND REPORTED TO THE DEPARTMENT OF SAFETY AND SECURITY.

FIRE ALARM: CONNECT FIRE ALARM RELAY DIRECTLY TO THE FIRE ALARM INPUT ON THE DELAYED EGRESS EXIT DEVICE TO ALLOW IMMEDIATE RELEASE IN A FIRE ALARM CONDITION.

GENERAL NOTES:

1. THIS DETAIL IS INTENDED TO BE USED FOR NEW CARD ACCESS CONTROLLED SINGLE DOORS WITH DELAYED EGRESS EXIT HARDWARE AND CONTROLLED ACCESS IN BOTH DIRECTIONS.

KEYED NOTES:

(1) CABLING/CONDUIT TO SECURITY ENCLOSURES. REFERENCE DRAWING ACS-GEN1 FOR CONDUIT AND CABLE ROUTING REQUIREMENTS.

(2) PROVIDE FIRE ALARM CONNECTION TO ALLOW IMMEDIATE DOOR RELEASE UPON FIRE ALARM CONDITION.

CABLE TYPE LEGEND: (A/2)

A – OSDP V.2 COMPLIANT COMPOSITE CABLE.
A.1 – COMPOSITE CABLE AWG22-4C (CR)
A.2 – COMPOSITE CABLE AWG18-4C (LOCK)
A.3 – COMPOSITE CABLE AWG22-2C (CONTACT)
A.4 – COMPOSITE CABLE AWG22-4C (REX PIR)
B – AWG18-4C
C – AWG18-2C
D – AWG22-4C
E – AWG22-2C
F – AWG22-4C OSDP
G – AWG22-6C

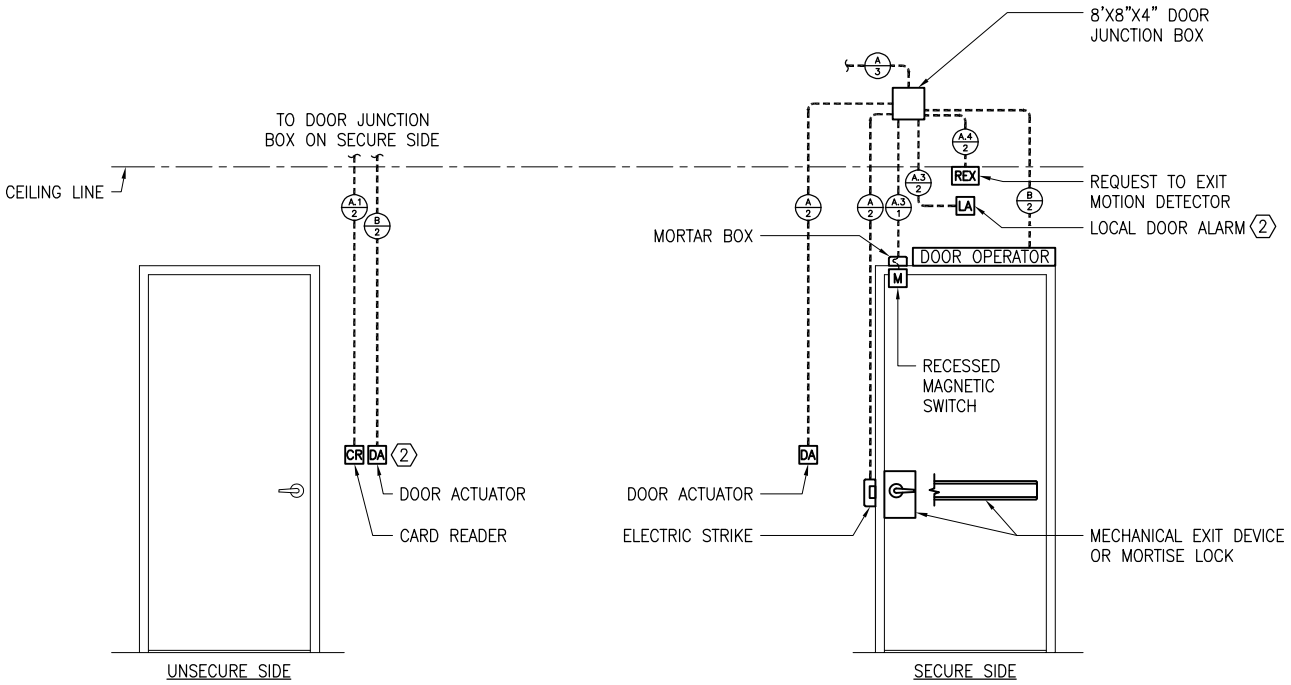
CONDUIT LEGEND: (A/2)

1 – 0.5" CONDUIT
2 – 0.75" CONDUIT
3 – 1" CONDUIT

Dartmouth College
Facilities Operations
& Management

Title	DOOR TYPE S8		
System	ACCESS CONTROL	Revision	1.0
Date	2/14/2024	Scale	NTS

ACS-S8



DOOR SEQUENCE OF OPERATION:

FROM THE UNSECURE SIDE: UPON A VALID CARD READ THE ACS SHALL UNLOCK THE STRIKE AND SHUNT THE DOOR CONTACT ALLOWING ENTRY.

FROM THE SECURE SIDE: FREE EGRESS IS PROVIDED. UPON APPROACHING THE DOOR THE REQUEST TO EXIT MOTION DETECTOR SHALL SEND A SIGNAL TO THE ACS TO SHUNT THE DOOR CONTACT TO ALLOW FREE EGRESS. THE STRIKE SHALL NOT BE ENERGIZED.

DOOR ACTUATOR FUNCTIONS: THE EXTERIOR DOOR ACTUATOR SHALL BE ONLY ACTIVE WHEN THE DOOR IS UNLOCKED. THE INTERIOR DOOR ACTUATOR SHALL BE PROVIDED WITH DPDT SWITCH TO ALLOW A SIGNAL TO BE SENT TO THE OPERATOR AND ANOTHER SIGNAL TO BE SENT TO THE ACS FOR REQUEST TO EXIT.

DOOR HELD OPEN SEQUENCE (FOR EXTERIOR DOORS): SIXTY SECONDS (PROGRAMMABLE) FROM A DOOR POSITION CHANGE OF STATE THE SYSTEM SHALL ACTIVATE THE LOCAL AUDIBLE DEVICE. NINETY SECONDS PROGRAMMABLE) FROM DOOR POSITION CHANGE OF STATE A DOOR HELD OPEN ALARM SHALL BE GENERATED, LOGGED TO THE SYSTEM DATABASE AND REPORTED TO THE DEPARTMENT OF SAFETY AND SECURITY.

DOOR FORCED ALARM SEQUENCE FOR EXTERIOR DOORS): OPENING THE DOOR WITHOUT A VALID CARD READ OR REQUEST TO EXIT SIGNAL SHALL START A FORCED DOOR SEQUENCE. THE SYSTEM SHALL IMMEDIATELY ACTIVATE THE LOCAL AUDIBLE DEVICE, GENERATE A FORCED DOOR ALARM LOGGED TO TO THE SYSTEM DATABASE AND REPORTED TO THE DEPARTMENT OF SAFETY AND SECURITY.

GENERAL NOTES:

1. THIS DETAIL IS INTENDED TO BE USED FOR NEW CARD ACCESS CONTROLLED SINGLE DOORS WITH ELECTRIC STRIKE AND FREE EGRESS. LOCAL ALARM IS OPTIONAL.

KEYED NOTES:

(1) CABLING/CONDUIT TO SECURITY ENCLOSURES. REFERENCE DRAWING ACS-GEN1 FOR CONDUIT AND CABLE ROUTING REQUIREMENTS.

(2) PROVIDE ONLY AT EXTERIOR DOORS OR WHERE SPECIFICALLY REQUESTED BY USERS.

CABLE TYPE LEGEND: (A/2)

A – OSDP V.2 COMPLIANT COMPOSITE CABLE.
A.1 – COMPOSITE CABLE AWG22-4C (CR)
A.2 – COMPOSITE CABLE AWG18-4C (LOCK)
A.3 – COMPOSITE CABLE AWG22-2C (CONTACT)
A.4 – COMPOSITE CABLE AWG22-4C (REX PIR)
B – AWG18-4C
C – AWG18-2C
D – AWG22-4C
E – AWG22-2C
F – AWG22-4C OSDP
G – AWG22-6C

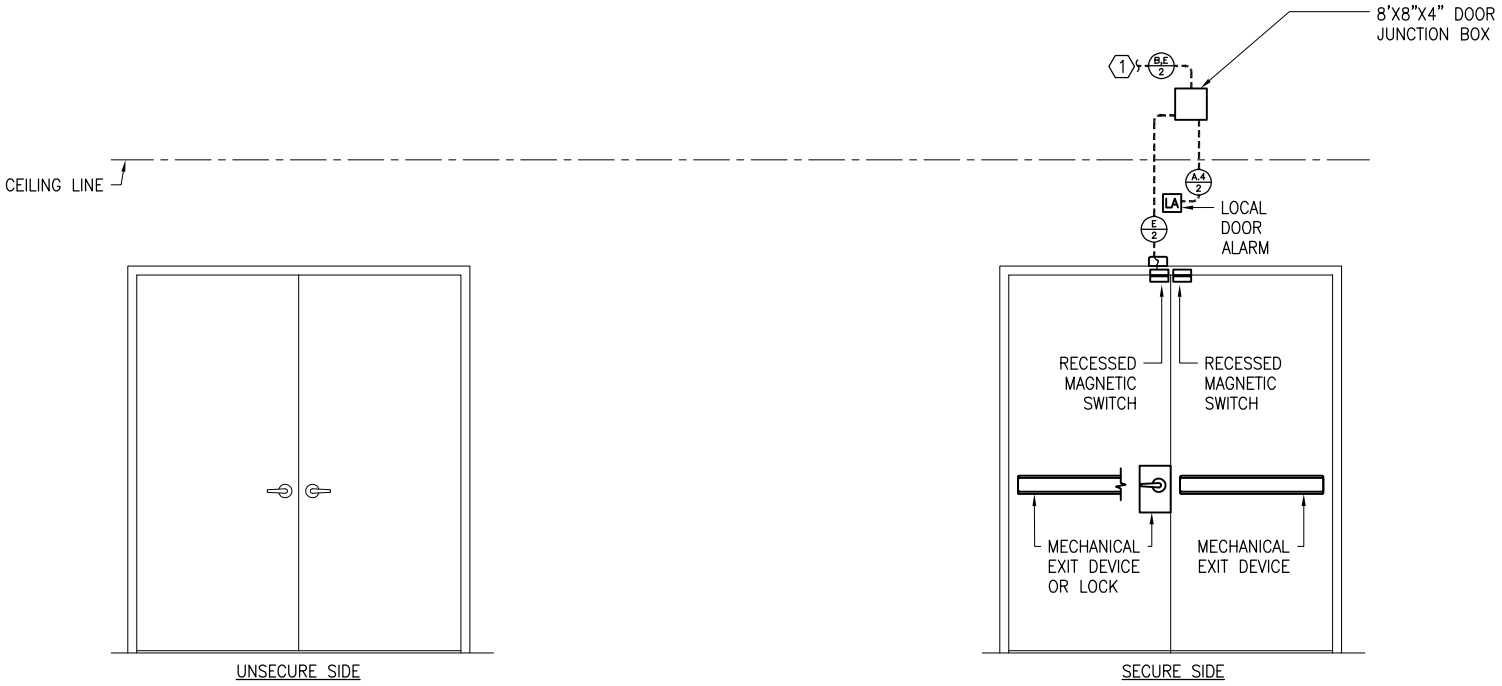
CONDUIT LEGEND: (A/2)

1 – 0.5" CONDUIT
2 – 0.75" CONDUIT
3 – 1" CONDUIT

Dartmouth College
Facilities Operations
& Management

Title	DOOR TYPE S9		
System	ACCESS CONTROL	Revision	1.0
Date	2/14/2024	Scale	NTS

ACS-S9



DOOR SEQUENCE OF OPERATION:

FROM BOTH SIDES: OPENING THE DOOR SHALL START A FORCED DOOR SEQUENCE. THE SYSTEM SHALL IMMEDIATELY ACTIVATE THE LOCAL AUDIBLE DEVICE, GENERATE A FORCED DOOR ALARM LOGGED TO TO THE SYSTEM DATABASE AND REPORTED TO THE DEPARTMENT OF SAFETY AND SECURITY.

GENERAL NOTES:

1. THIS DETAIL IS ONLY TO BE USED FOR NEW EMERGENCY EGRESS ONLY DOORS.

KEYED NOTES:

(1) CABLING/CONDUIT TO SECURITY ENCLOSURES. REFERENCE DRAWING ACS-GEN1 FOR CONDUIT AND CABLE ROUTING REQUIREMENTS.

CABLE TYPE LEGEND: A/2

A – OSDP V.2 COMPLIANT COMPOSITE CABLE.
A.1 – COMPOSITE CABLE AWG22-4C (CR)
A.2 – COMPOSITE CABLE AWG18-4C (LOCK)
A.3 – COMPOSITE CABLE AWG22-2C (CONTACT)
A.4 – COMPOSITE CABLE AWG22-4C (REX PIR)
B – AWG18-4C
C – AWG18-2C
D – AWG22-4C
E – AWG22-2C
F – AWG22-4C OSDP
G – AWG22-6C

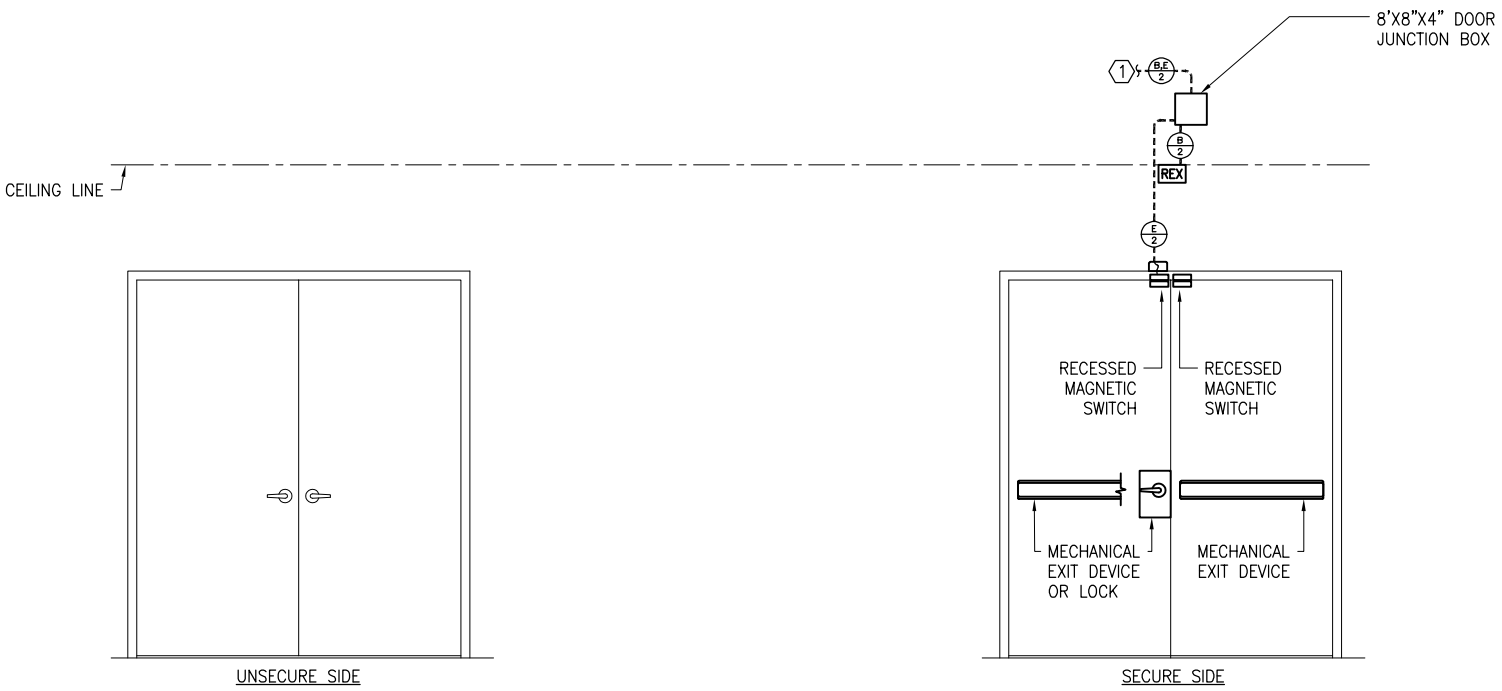
CONDUIT LEGEND: A/2

1 – 0.5" CONDUIT
2 – 0.75" CONDUIT
3 – 1" CONDUIT

Dartmouth College
Facilities Operations
& Management

Title	DOOR TYPE D1		
System	ACCESS CONTROL	Revision	1.0
Date	2/14/2024	Scale	NTS

ACS-D1



DOOR SEQUENCE OF OPERATION:

FROM THE EXTERIOR: NO ENTRY IS PROVIDED.

FROM THE SECURE SIDE: FREE EGRESS IS PROVIDED. ACTIVATION OF THE REQUEST TO EXIT MOTION DETECTOR SHALL BYPASS THE DOOR CONTACT AND ALLOW FREE EGRESS.

DOOR HELD OPEN SEQUENCE (FOR EXTERIOR DOORS): SIXTY SECONDS (PROGRAMMABLE) FROM A DOOR POSITION CHANGE OF STATE THE SYSTEM SHALL ACTIVATE THE LOCAL AUDIBLE DEVICE. NINETY SECONDS (PROGRAMMABLE) FROM DOOR POSITION CHANGE OF STATE A DOOR HELD OPEN ALARM SHALL BE GENERATED, LOGGED TO THE SYSTEM DATABASE AND REPORTED TO THE DEPARTMENT OF SAFETY AND SECURITY

DOOR FORCED ALARM SEQUENCE FOR EXTERIOR DOORS): OPENING THE DOOR WITHOUT A VALID REQUEST TO EXIT SIGNAL SHALL START A FORCED DOOR SEQUENCE. THE SYSTEM SHALL IMMEDIATELY ACTIVATE THE LOCAL AUDIBLE DEVICE, GENERATE A FORCED DOOR ALARM LOGGED TO TO THE SYSTEM DATABASE AND REPORTED TO THE DEPARTMENT OF SAFETY AND SECURITY.

GENERAL NOTES:

1. THIS DETAIL IS ONLY TO BE USED FOR EXISTING DOOR WHERE THE EXISTING HARDWARE CANNOT BE REPLACED.

KEYED NOTES:

(1) CABLING/CONDUIT TO SECURITY ENCLOSURES. REFERENCE DRAWING ACS-GEN1 FOR CONDUIT AND CABLE ROUTING REQUIREMENTS.

(2) REQUEST TO EXIT SENSOR SHALL HAVE INTEGRATED PIEZO ALARM.

CABLE TYPE LEGEND: A 2

A – OSDP V.2 COMPLIANT COMPOSITE CABLE.
A.1 – COMPOSITE CABLE AWG22-4C (CR)
A.2 – COMPOSITE CABLE AWG18-4C (LOCK)
A.3 – COMPOSITE CABLE AWG22-2C (CONTACT)
A.4 – COMPOSITE CABLE AWG22-4C (REX PIR)
B – AWG18-4C
C – AWG18-2C
D – AWG22-4C
E – AWG22-2C
F – AWG22-4C OSDP
G – AWG22-6C

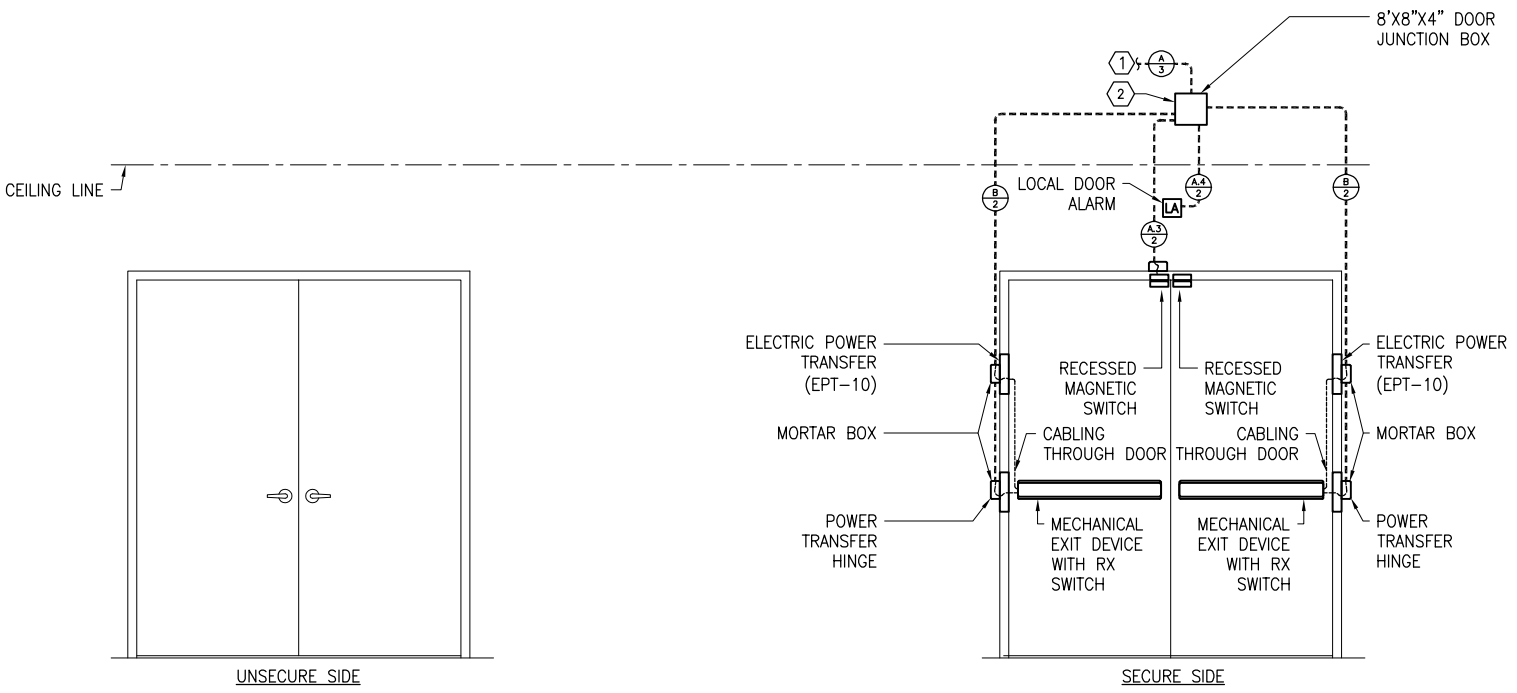
CONDUIT LEGEND: A 2

1 – 0.5" CONDUIT
2 – 0.75" CONDUIT
3 – 1" CONDUIT

Dartmouth College
Facilities Operations
& Management

Title	DOOR TYPE D2		
System	ACCESS CONTROL	Revision	1.0
Date	2/14/2024	Scale	NTS

ACS-D2



DOOR SEQUENCE OF OPERATION:

FROM THE EXTERIOR: NO ENTRY IS PROVIDED.

FROM THE SECURE SIDE: FREE EGRESS IS PROVIDED. PRESSING THE EXIT DEVICE SHALL SEND A REQUEST TO EXIT SIGNAL TO THE ACS TO BYPASS THE DOOR CONTACT AND ALLOW FREE EGRESS.

DOOR HELD OPEN SEQUENCE (FOR EXTERIOR DOORS): SIXTY SECONDS (PROGRAMMABLE) FROM A DOOR POSITION CHANGE OF STATE THE SYSTEM SHALL ACTIVATE THE LOCAL AUDIBLE DEVICE. NINETY SECONDS (PROGRAMMABLE) FROM DOOR POSITION CHANGE OF STATE A DOOR HELD OPEN ALARM SHALL BE GENERATED, LOGGED TO THE SYSTEM DATABASE AND REPORTED TO THE DEPARTMENT OF SAFETY AND SECURITY

DOOR FORCED ALARM SEQUENCE FOR EXTERIOR DOORS): OPENING THE DOOR WITHOUT A VALID REQUEST TO EXIT SIGNAL SHALL START A FORCED DOOR SEQUENCE. THE SYSTEM SHALL IMMEDIATELY ACTIVATE THE LOCAL AUDIBLE DEVICE, GENERATE A FORCED DOOR ALARM LOGGED TO TO THE SYSTEM DATABASE AND REPORTED TO THE DEPARTMENT OF SAFETY AND SECURITY.

GENERAL NOTES:

1. THIS DETAIL IS ONLY TO BE USED FOR NEW DOORS WHERE FREE EGRESS IS REQUIRED BUT DOOR HELD OPEN MUST BE MONITORED.

KEYED NOTES:

(1) CABLING/CONDUIT TO SECURITY ENCLOSURES. REFERENCE DRAWING ACS-GEN1 FOR CONDUIT AND CABLE ROUTING REQUIREMENTS.

(2) CARD READER CABLE FROM COMPOSITE CABLE SHALL BE COILED UP AS SPARE IN THE DOOR JUNCTION BOX. PROVIDE SUFFICIENT LENGTH TO REACH FUTURE CARD READER.

CABLE TYPE LEGEND: (A/2)

A – OSDP V.2 COMPLIANT COMPOSITE CABLE.
A.1 – COMPOSITE CABLE AWG22-4C (CR)
A.2 – COMPOSITE CABLE AWG18-4C (LOCK)
A.3 – COMPOSITE CABLE AWG22-2C (CONTACT)
A.4 – COMPOSITE CABLE AWG22-4C (REX PIR)
B – AWG18-4C
C – AWG18-2C
D – AWG22-4C
E – AWG22-2C
F – AWG22-4C OSDP
G – AWG22-6C

CONDUIT LEGEND: (A/2)

1 – 0.5" CONDUIT
2 – 0.75" CONDUIT
3 – 1" CONDUIT

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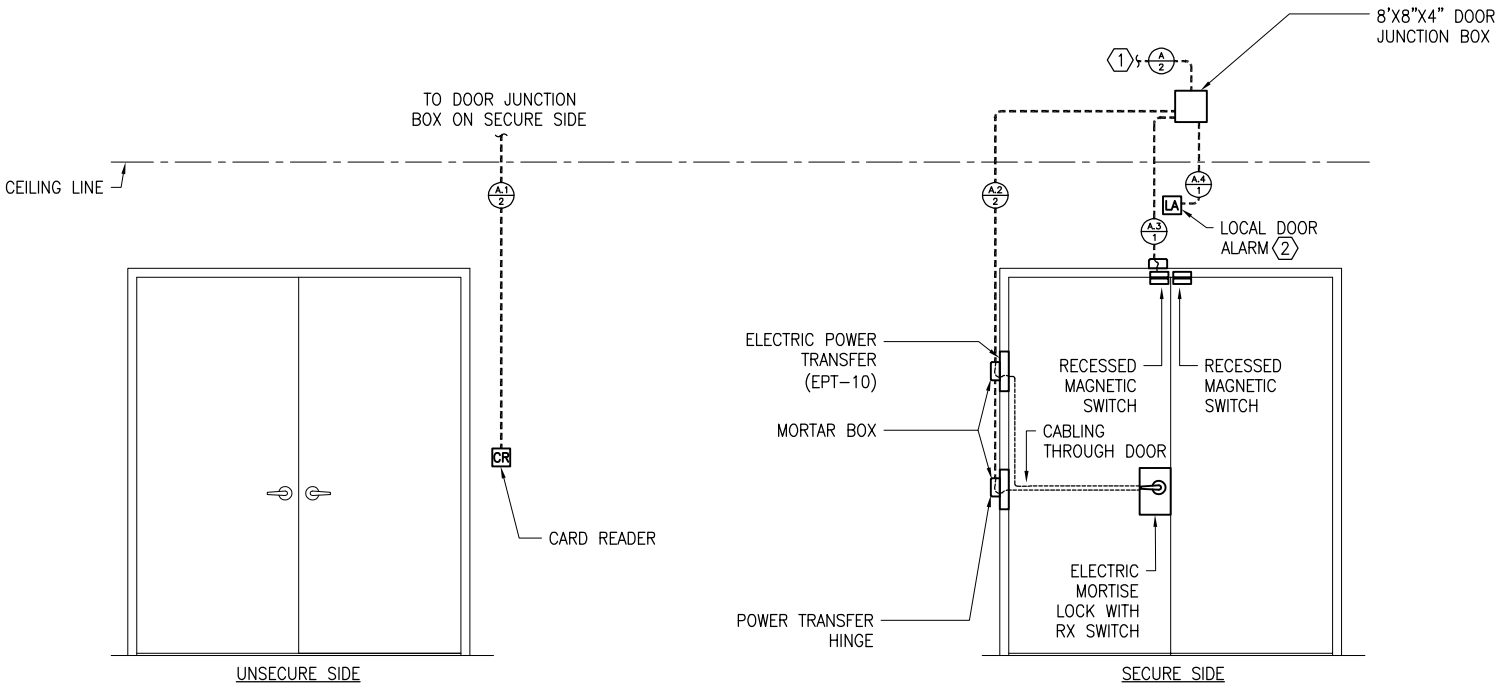
Facilities Operations
& Management

Title	DOOR TYPE D3		
System	ACCESS CONTROL	Revision	1.0
Date	2/14/2024	Scale	NTS

ACS-D3



DOOR SEQUENCE OF OPERATION:

FROM THE UNSECURE SIDE: UPON A VALID CARD READ THE ACS SHALL UNLOCK THE DOOR AND SHUNT THE DOOR CONTACT. AFTER THE DOOR IS OPENED THE LOCK SHALL IMMEDIATELY RELOCK.

FROM THE SECURE SIDE: FREE EGRESS IS PROVIDED. PRESSING THE DOOR HANDLE SHALL SHUNT THE DOOR CONTACT AND ALLOW FREE EGRESS.

DOOR HELD OPEN SEQUENCE (FOR EXTERIOR DOORS): SIXTY SECONDS (PROGRAMMABLE) FROM A DOOR POSITION CHANGE OF STATE THE SYSTEM SHALL ACTIVATE THE LOCAL AUDIBLE DEVICE. NINETY SECONDS PROGRAMMABLE) FROM DOOR POSITION CHANGE OF STATE A DOOR HELD OPEN ALARM SHALL BE GENERATED, LOGGED TO THE SYSTEM DATABASE AND REPORTED TO THE DEPARTMENT OF SAFETY AND SECURITY

DOOR FORCED ALARM SEQUENCE FOR EXTERIOR DOORS): OPENING THE DOOR WITHOUT A VALID CARD READ OR REQUEST TO EXIT SIGNAL SHALL START A FORCED DOOR SEQUENCE. THE SYSTEM SHALL IMMEDIATELY ACTIVATE THE LOCAL AUDIBLE DEVICE, GENERATE A FORCED DOOR ALARM LOGGED TO TO THE SYSTEM DATABASE AND REPORTED TO THE DEPARTMENT OF SAFETY AND SECURITY.

GENERAL NOTES:

1. THIS DETAIL IS INTENDED TO BE USED FOR NEW CARD ACCESS CONTROLLED DOORS WITH ELECTRIC LOCKS, WHERE FREE EGRESS IS REQUIRED BUT DOOR HELD OPEN MUST BE MONITORED.

KEYED NOTES:

(1) CABLING/CONDUIT TO SECURITY ENCLOSURES. REFERENCE DRAWING ACS-GEN1 FOR CONDUIT AND CABLE ROUTING REQUIREMENTS.

(2) PROVIDE ONLY AT EXTERIOR DOORS OR WHERE SPECIFICALLY REQUESTED BY USERS.

CABLE TYPE LEGEND: (A/2)

A – OSDP V.2 COMPLIANT COMPOSITE CABLE.
A.1 – COMPOSITE CABLE AWG22-4C (CR)
A.2 – COMPOSITE CABLE AWG18-4C (LOCK)
A.3 – COMPOSITE CABLE AWG22-2C (CONTACT)
A.4 – COMPOSITE CABLE AWG22-4C (REX PIR)
B – AWG18-4C
C – AWG18-2C
D – AWG22-4C
E – AWG22-2C
F – AWG22-4C OSDP
G – AWG22-6C

CONDUIT LEGEND: (A/2)

1 – 0.5" CONDUIT
2 – 0.75" CONDUIT
3 – 1" CONDUIT

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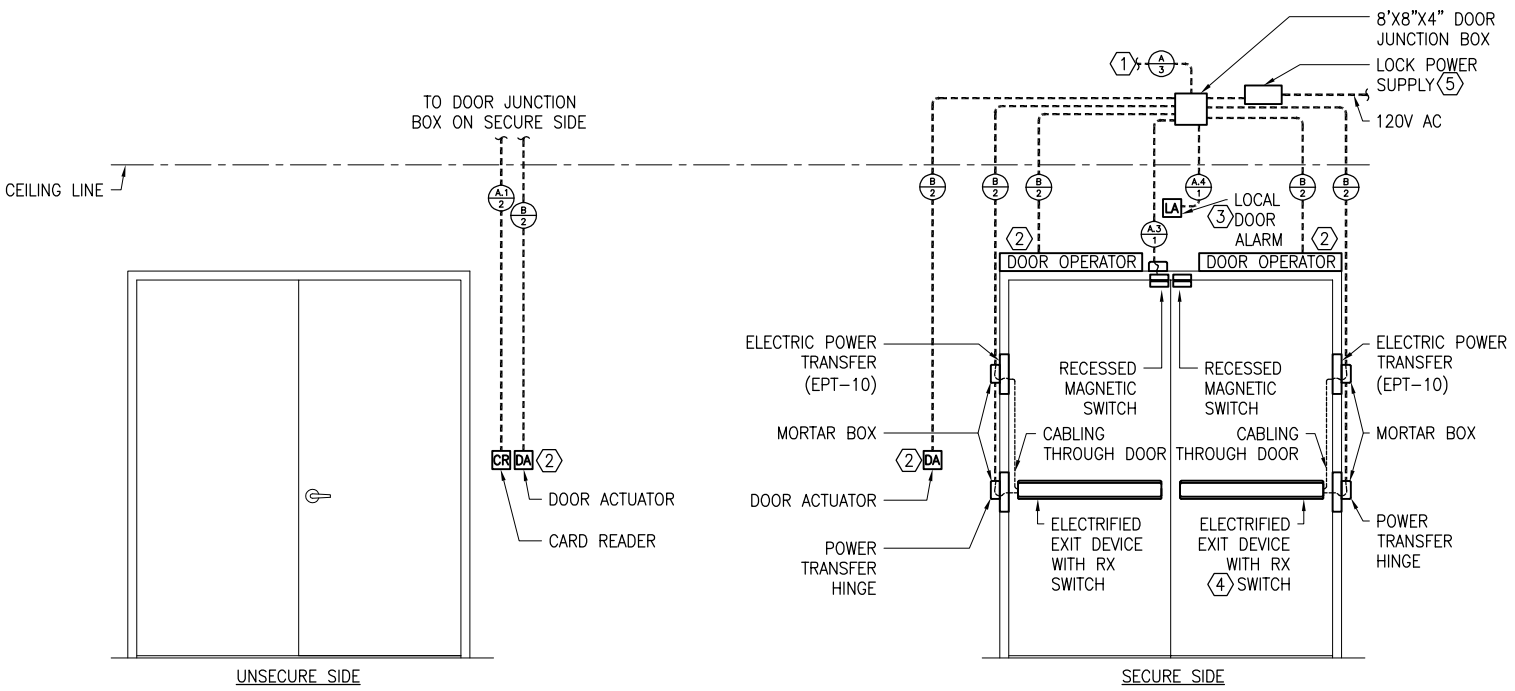
Title	DOOR TYPE D4		
System	ACCESS CONTROL	Revision	1.0
Date	2/14/2024	Scale	NTS

ACS-D4



DOOR SEQUENCE OF OPERATION:

FROM THE UNSECURE SIDE: UPON A VALID CARD READ THE ACS SHALL RELEASE THE MAGLOCK AND SHUNT THE DOOR CONTACT. AS SOON AS THE DOOR IS OPENED THE MAGLOCK SHALL AUTOMATICALLY RE-ENERGIZE.

FROM THE SECURE SIDE: FREE EGRESS IS PROVIDED. UPON APPROACHING THE DOOR THE REQUEST TO EXIT MOTION SENSOR SHALL SEND A SIGNAL TO THE ACS TO RELEASE THE MAGLOCK AND SHUNT THE DOOR CONTACT TO ALLOW FREE EGRESS.

REQUEST TO EXIT PUSHBUTTON WIRING: WIRE THE REQUEST TO EXIT BUTTON SUCH THAT ONE POLE SHALL DIRECTLY INTERRUPT LOCK POWER UPON ACTIVATION, THE OTHER POLE SHALL CONNECT TO THE SAME REQUEST TO EXIT SIGNAL WIRE AS THE MOTION DETECTOR.

CONFIGURE THE LOCK POWER SUPPLY TO RELEASE THE MAGNET ON FIRE ALARM ACTIVATION OR ON LOSS OF BUILDING PRIMARY POWER.

DOOR HELD OPEN SEQUENCE: SIXTY SECONDS (PROGRAMMABLE) FROM A DOOR POSITION CHANGE OF STATE THE SYSTEM SHALL ACTIVATE THE LOCAL AUDIBLE DEVICE. NINETY SECONDS PROGRAMMABLE) FROM DOOR POSITION CHANGE OF STATE A DOOR HELD OPEN ALARM SHALL BE GENERATED, LOGGED TO THE SYSTEM DATABASE AND REPORTED TO THE DEPARTMENT OF SAFETY AND SECURITY

DOOR FORCED ALARM SEQUENCE: OPENING THE DOOR WITHOUT A VALID CARD READ OR REQUEST TO EXIT SIGNAL SHALL START A FORCED DOOR SEQUENCE. THE SYSTEM SHALL IMMEDIATELY ACTIVATE THE LOCAL AUDIBLE DEVICE, GENERATE A FORCED DOOR ALARM LOGGED TO TO THE SYSTEM DATABASE AND REPORTED TO THE DEPARTMENT OF SAFETY AND SECURITY.

GENERAL NOTES:

1. THIS DETAIL IS INTENDED TO BE USED FOR NEW CARD ACCESS CONTROLLED DOORS WITH ELECTRIFIED EXIT DEVICE WHERE FREE EGRESS IS REQUIRED BUT AND DOOR HELD IS MONITORED WITH LOCAL ALARM.

KEYED NOTES:

1. CABLING/CONDUIT TO SECURITY ENCLOSURES. REFERENCE DRAWING ACS-GEN1 FOR CONDUIT AND CABLE ROUTING REQUIREMENTS.
2. PROVIDED ONLY AT DOORS WITH DOOR OPERATORS.
3. PROVIDE ONLY AT EXTERIOR DOORS OR WHERE SPECIFICALLY REQUESTED BY USERS.
4. ELECTRIFIED EXIT DEVICE ON THIS LEAF ONLY AT DOORS THAT NEED TO BE UNLOCKED ON SCHEDULE. FOR DOORS THAT ARE LOCKED AT ALL TIMES, PROVIDE RX SWITCH ONLY.
5. POWER SUPPLY ONLY REQUIRED AT DOORS WHERE BOTH LEAVES ARE ELECTRIFIED.

CABLE TYPE LEGEND: (A/2)

A – OSDP V.2 COMPLIANT COMPOSITE CABLE.
A.1 – COMPOSITE CABLE AWG22-4C (CR)
A.2 – COMPOSITE CABLE AWG18-4C (LOCK)
A.3 – COMPOSITE CABLE AWG22-2C (CONTACT)
A.4 – COMPOSITE CABLE AWG22-4C (REX PIR)
B – AWG18-4C
C – AWG18-2C
D – AWG22-4C
E – AWG22-2C
F – AWG22-4C OSDP
G – AWG22-6C

CONDUIT LEGEND: (A/2)

1 – 0.5" CONDUIT
2 – 0.75" CONDUIT
3 – 1" CONDUIT

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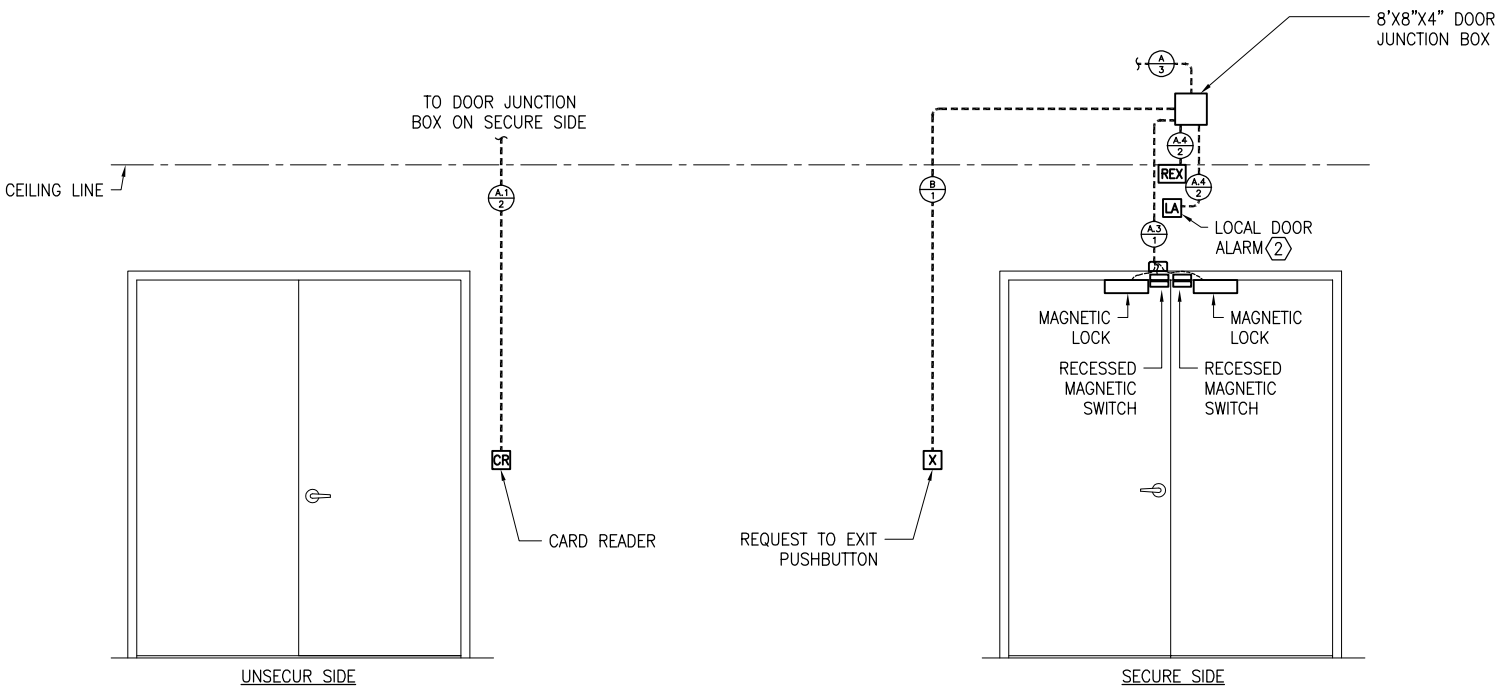
Title	DOOR TYPE D5		
System	ACCESS CONTROL	Revision	1.0
Date	2/14/2024	Scale	NTS

ACS-D5



DOOR SEQUENCE OF OPERATION:

FROM THE UNSECURE SIDE: UPON A VALID CARD READ THE ACS SHALL RELEASE THE MAGLOCKS AND SHUNT THE DOOR CONTACT. AS SOON AS THE DOOR IS OPENED THE MAGLOCKS SHALL AUTOMATICALLY RE-ENERGIZE.

FROM THE SECURE SIDE: FREE EGRESS IS PROVIDED. UPON APPROACHING THE DOOR THE REQUEST TO EXIT MOTION SENSOR SHALL SEND A SIGNAL TO THE ACS TO RELEASE THE MAGLOCKS AND SHUNT THE DOOR CONTACT TO ALLOW FREE EGRESS.

REQUEST TO EXIT PUSHBUTTON WIRING: WIRE THE REQUEST TO EXIT BUTTON SUCH THAT ONE POLE SHALL DIRECTLY INTERRUPT LOCK POWER UPON ACTIVATION, THE OTHER POLE SHALL CONNECT TO THE SAME REQUEST TO EXIT SIGNAL WIRE AS THE MOTION DETECTOR.

FIRE ALARM: CONFIGURE THE LOCK POWER SUPPLY TO RELEASE THE MAGNET ON FIRE ALARM ACTIVATION OR ON LOSS OF BUILDING PRIMARY POWER.

DOOR HELD OPEN SEQUENCE: SIXTY SECONDS (PROGRAMMABLE) FROM A DOOR POSITION CHANGE OF STATE THE SYSTEM SHALL ACTIVATE THE LOCAL AUDIBLE DEVICE. NINETY SECONDS PROGRAMMABLE) FROM DOOR POSITION CHANGE OF STATE A DOOR HELD OPEN ALARM SHALL BE GENERATED, LOGGED TO THE SYSTEM DATABASE AND REPORTED TO THE DEPARTMENT OF SAFETY AND SECURITY

DOOR FORCED ALARM SEQUENCE: OPENING THE DOOR WITHOUT A VALID CARD READ OR REQUEST TO EXIT SIGNAL SHALL START A FORCED DOOR SEQUENCE. THE SYSTEM SHALL IMMEDIATELY ACTIVATE THE LOCAL AUDIBLE DEVICE, GENERATE A FORCED DOOR ALARM LOGGED TO TO THE SYSTEM DATABASE AND REPORTED TO THE DEPARTMENT OF SAFETY AND SECURITY.

GENERAL NOTES:

1. THIS DETAIL IS INTENDED TO BE USED FOR NEW CARD ACCESS CONTROLLED DOUBLE DOORS WITH MAGNETIC LOCK AND FREE EGRESS. LOCAL ALARM IS OPTIONAL. THESE SHOULD USED ONLY AS LAST OPTION AS THEY ARE NOT CONSIDERED TO BE SECURE MEANS TO LOCK A DOOR, THEY ARE EASILY DEFEATABLE.

KEYED NOTES:

(1) CABLING/CONDUIT TO SECURITY ENCLOSURES. REFERENCE DRAWING ACS-GEN1 FOR CONDUIT AND CABLE ROUTING REQUIREMENTS.

(2) PROVIDE ONLY AT EXTERIOR DOORS OR WHERE SPECIFICALLY REQUESTED BY USERS.

CABLE TYPE LEGEND: (A/2)

A – OSDP V.2 COMPLIANT COMPOSITE CABLE.
A.1 – COMPOSITE CABLE AWG22-4C (CR)
A.2 – COMPOSITE CABLE AWG18-4C (LOCK)
A.3 – COMPOSITE CABLE AWG22-2C (CONTACT)
A.4 – COMPOSITE CABLE AWG22-4C (REX PIR)
B – AWG18-4C
C – AWG18-2C
D – AWG22-4C
E – AWG22-2C
F – AWG22-4C OSDP
G – AWG22-6C

CONDUIT LEGEND: (A/2)

1 – 0.5" CONDUIT
2 – 0.75" CONDUIT
3 – 1" CONDUIT

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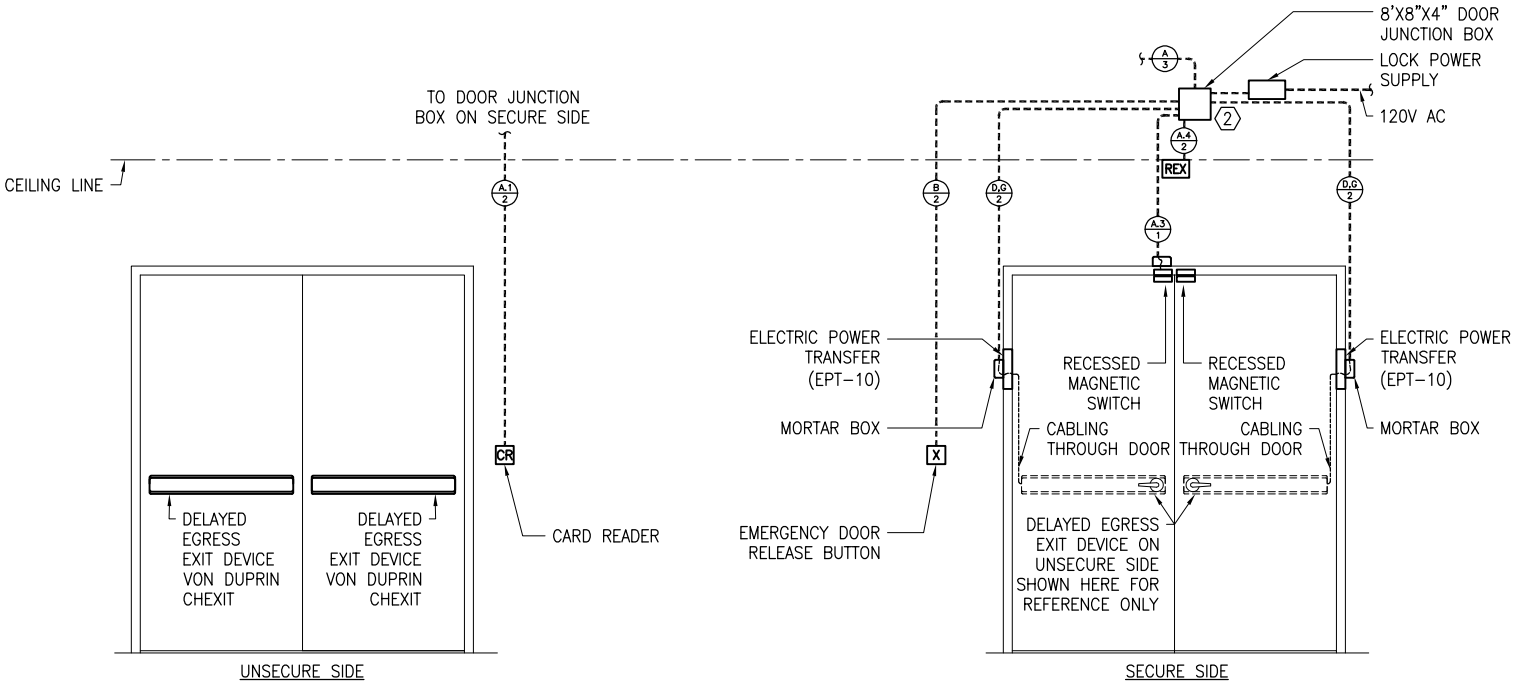
Title	DOOR TYPE D6		
System	ACCESS CONTROL	Revision	1.0
Date	2/14/2024	Scale	NTS

ACS-D6



DOOR SEQUENCE OF OPERATION:

FROM THE UNSECURE SIDE: THE DOOR SHALL BE LOCKED AND DELAYED EGRESS SYSTEM SHALL BE ARMED.

IN AN EMERGENCY: UPON DEPRESSING THE PUSH BAR A WARNING SOUND SHALL SOUND ALERTING THE USER. IF THE BAR IS RELEASED THE WARNING SHALL AUTOMATICALLY RESET. HOLDING THE PUSH BAR SHALL START THE DELAYED EGRESS TIMER (15 OR 30 SECONDS) AND THE LOCAL SOUNDER ALARM. AN ALARM SHALL BE GENERATED, LOGGED TO THE SYSTEM DATABASE AND REPORTED TO THE DEPARTMENT OF SAFETY AND SECURITY AFTER THE TIMER EXPIRES THE DOOR PUSHBAR SHALL RELEASE, ALLOWING EGRESS.

FROM THE UNSECURE SIDE: UPON A VALID CARD READ THE ACS SHALL BYPASS THE DELAYED EGRESS SYSTEM, RELEASE THE PUSHBAR AND SHUNT THE DOOR CONTACT.

FROM THE SECURE SIDE: FREE EGRESS IS PROVIDED. UPON ACTIVATION OF THE REQUEST TO EXIT MOTION DETECTOR OR PRESSING THE REQUEST TO EXIT BUTTON THE ACS SHALL BYPASS THE DELAYED EGRESS SYSTEM, UNLOCK THE DOOR AND SHUNT THE DOOR CONTACT.

DOOR HELD OPEN SEQUENCE: IF THE DOOR IS HELD OPEN LONGER THAN THE PREPROGRAMMED ALLOWED TIME, A DOOR HELD OPEN ALARM SHALL BE GENERATED, THE DELAYED EGRESS ALARM SHALL SOUND AND AND ALARM EVENT SHALL BE LOGGED TO THE SYSTEM DATABASE AND REPORTED TO THE DEPARTMENT OF SAFETY AND SECURITY.

FIRE ALARM: CONNECT FIRE ALARM RELAY DIRECTLY TO THE FIRE ALARM INPUT ON THE DELAYED EGRESS EXIT DEVICE TO ALLOW IMMEDIATE RELEASE IN A FIRE ALARM CONDITION.

GENERAL NOTES:

1. THIS DETAIL IS INTENDED TO BE USED FOR NEW CARD ACCESS CONTROLLED SINGLE DOORS WITH DELAYED EGRESS IN THE CONTROLLED ACCESS DIRECTION AND FREE EGRESS.

KEYED NOTES:

(1) CABLING/CONDUIT TO SECURITY ENCLOSURES. REFERENCE DRAWING ACS-GEN1 FOR CONDUIT AND CABLE ROUTING REQUIREMENTS.

(2) PROVIDE FIRE ALARM CONNECTION TO ALLOW IMMEDIATE DOOR RELEASE UPON FIRE ALARM CONDITION.

CABLE TYPE LEGEND: (A/2)

A – OSDP V.2 COMPLIANT COMPOSITE CABLE.
A.1 – COMPOSITE CABLE AWG22-4C (CR)
A.2 – COMPOSITE CABLE AWG18-4C (LOCK)
A.3 – COMPOSITE CABLE AWG22-2C (CONTACT)
A.4 – COMPOSITE CABLE AWG22-4C (REX PIR)
B – AWG18-4C
C – AWG18-2C
D – AWG22-4C
E – AWG22-2C
F – AWG22-4C OSDP
G – AWG22-6C

CONDUIT LEGEND: (A/2)

1 – 0.5" CONDUIT
2 – 0.75" CONDUIT
3 – 1" CONDUIT

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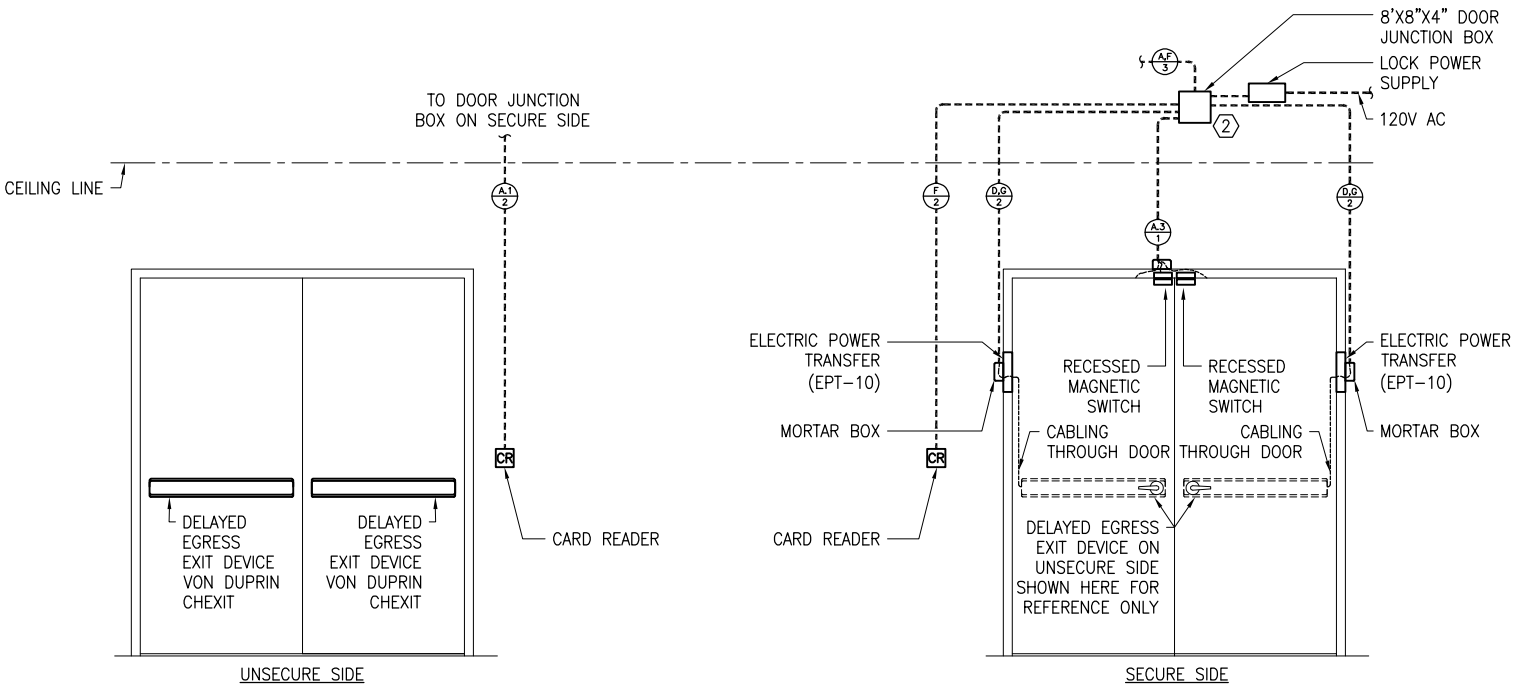
Title	DOOR TYPE D7		
System	ACCESS CONTROL	Revision	1.0
Date	2/14/2024	Scale	NTS

ACS-D7



DOOR SEQUENCE OF OPERATION:

FROM THE UNSECURE SIDE: THE DOOR SHALL BE LOCKED AND DELAYED EGRESS SYSTEM SHALL BE ARMED.

IN AN EMERGENCY: UPON DEPRESSING THE PUSH BAR A WARNING SOUND SHALL SOUND ALERTING THE USER. IF THE BAR IS RELEASED THE WARNING SHALL AUTOMATICALLY RESET. HOLDING THE PUSH BAR SHALL START THE DELAYED EGRESS TIMER (15 OR 30 SECONDS) AND THE LOCAL SOUNDER ALARM. AN ALARM SHALL BE GENERATED, LOGGED TO THE SYSTEM DATABASE AND REPORTED TO THE DEPARTMENT OF SAFETY AND SECURITY AFTER THE TIMER EXPIRES THE DOOR PUSHBAR SHALL RELEASE, ALLOWING EGRESS.

FROM THE UNSECURE SIDE: UPON A VALID CARD READ THE ACS SHALL BYPASS THE DELAYED EGRESS SYSTEM, RELEASE THE PUSHBAR AND SHUNT THE DOOR CONTACT.

FROM THE SECURE SIDE: UPON A VALID CARD READ THE ACS SHALL BYPASS THE DELAYED EGRESS SYSTEM, UNLOCK THE DOOR AND SHUNT THE DOOR CONTACT.

DOOR HELD OPEN SEQUENCE: IF THE DOOR IS HELD OPEN LONGER THAN THE PREPROGRAMMED ALLOWED TIME, A DOOR HELD OPEN ALARM SHALL BE GENERATED, THE DELAYED EGRESS ALARM SHALL SOUND AND AND ALARM EVENT SHALL BE LOGGED TO THE SYSTEM DATABASE AND REPORTED TO THE DEPARTMENT OF SAFETY AND SECURITY.

FIRE ALARM: CONNECT FIRE ALARM RELAY DIRECTLY TO THE FIRE ALARM INPUT ON THE DELAYED EGRESS EXIT DEVICE TO ALLOW IMMEDIATE RELEASE IN A FIRE ALARM CONDITION.

GENERAL NOTES:

1. THIS DETAIL IS INTENDED TO BE USED FOR NEW CARD ACCESS CONTROLLED SINGLE DOORS WITH DELAYED EGRESS EXIT HARDWARE AND CONTROLLED ACCESS IN BOTH DIRECTIONS.

KEYED NOTES:

(1) CABLING/CONDUIT TO SECURITY ENCLOSURES. REFERENCE DRAWING ACS-GEN1 FOR CONDUIT AND CABLE ROUTING REQUIREMENTS.

(2) PROVIDE FIRE ALARM CONNECTION TO ALLOW IMMEDIATE DOOR RELEASE UPON FIRE ALARM CONDITION.

CABLE TYPE LEGEND: (A/2)

A – OSDP V.2 COMPLIANT COMPOSITE CABLE.
A.1 – COMPOSITE CABLE AWG22-4C (CR)
A.2 – COMPOSITE CABLE AWG18-4C (LOCK)
A.3 – COMPOSITE CABLE AWG22-2C (CONTACT)
A.4 – COMPOSITE CABLE AWG22-4C (REX PIR)
B – AWG18-4C
C – AWG18-2C
D – AWG22-4C
E – AWG22-2C
F – AWG22-4C OSDP
G – AWG22-6C

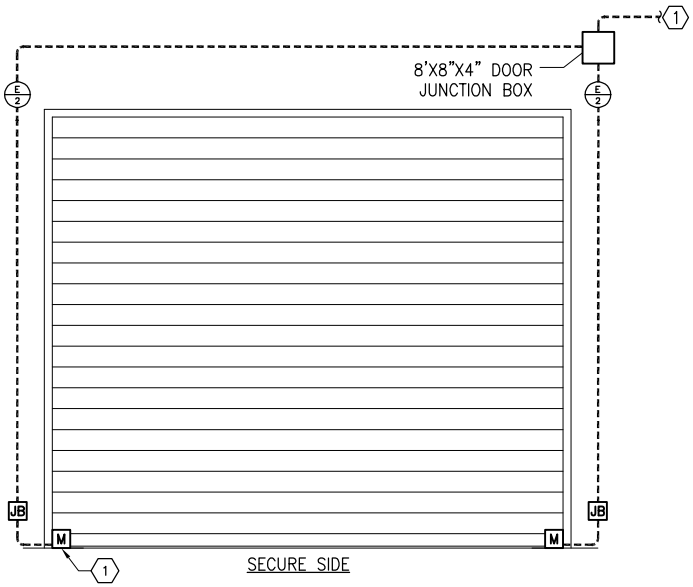
CONDUIT LEGEND: (A/2)

1 – 0.5" CONDUIT
2 – 0.75" CONDUIT
3 – 1" CONDUIT

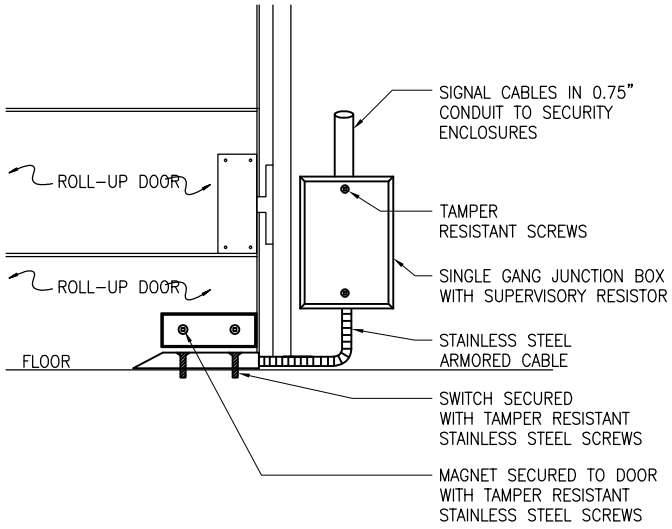
Dartmouth College
Facilities Operations
& Management

Title	DOOR TYPE D8		
System	ACCESS CONTROL	Revision	1.0
Date	2/14/2024	Scale	NTS

ACS-D8



1 TYPICAL ROLLUP DOOR N.T.S.



2 TYPICAL ROLLUP DOOR CONTACT N.T.S.

DOOR SEQUENCE OF OPERATION:

FROM BOTH SIDES: OPENING THE DOOR SHALL START A FORCED DOOR SEQUENCE. THE SYSTEM SHALL IMMEDIATELY GENERATE A FORCED DOOR ALARM LOGGED TO TO THE SYSTEM DATABASE AND REPORTED TO THE DEPARTMENT OF SAFETY AND SECURITY.

GENERAL NOTES:

1. THIS DETAIL IS ONLY TO BE USED FOR NEW EMERGENCY EGRESS ONLY DOORS.

KEYED NOTES:

(1) FOR DOORS LONGER THAN 12 FEET WIDE PROVIDE CONTACTS ON BOTH SIDES.

CABLE TYPE LEGEND: (A/2)

A – OSDP V.2 COMPLIANT COMPOSITE CABLE.
A.1 – COMPOSITE CABLE AWG22-4C (CR)
A.2 – COMPOSITE CABLE AWG18-4C (LOCK)
A.3 – COMPOSITE CABLE AWG22-2C (CONTACT)
A.4 – COMPOSITE CABLE AWG22-4C (REX PIR)
B – AWG18-4C
C – AWG18-2C
D – AWG22-4C
E – AWG22-2C
F – AWG22-4C OSDP
G – AWG22-6C

CONDUIT LEGEND: (A/2)

1 – 0.5" CONDUIT
2 – 0.75" CONDUIT
3 – 1" CONDUIT

Dartmouth College
Facilities Operations
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Title	TYPICAL ROLLUP DOOR		
System	ACCESS CONTROL	Revision	1.0
Date	2/14/2024	Scale	NTS

ACS-OH-1

GENERAL NOTES:

1. SECURITY CABLING SHALL BE INSTALLED IN CONDUIT IN WALLS AND CEILINGS WHERE ROUTED THROUGH NON–RESTRICTED (PUBLIC SPACE). WHERE ROUTED THROUGH ACCESSIBLE CEILINGS IN RESTRICTED SPACE SECURITY CABLES MAY BE SUPPORTED BY J–HOOKS SPACED NO MORE THAN 5' APART OR BY CABLE TRAY. RESTRICTED SPACE IS THAT SPACE THAT CANNOT BE ENTERED WITHOUT PASSING THROUGH A CARD READER CONTROLLED DOOR.

2. WHERE CABLES PASS THROUGH SPACES WITH EXPOSED CEILING OR ABOVE INACCESSIBLE CEILING, INSTALL CABLES IN CONDUIT.

3. PROVIDE CONDUIT SLEEVES THROUGH ALL WALL PENETRATIONS AND FIRESTOP AS REQUIRED FOR PARTITION TYPE.

4. CABLING INSTALLED ON J–HOOKS, AND CONDUIT RUNS SHALL BE ROUTED PARALLEL OR PERPENDICULAR TO WALLS AND STRUCTURAL ELEMENTS. RUNNING CABLING OR CONDUIT DIAGONALLY ACROSS ANY SPACE, INCLUDING AREAS CONCEALED ABOVE FINISHED CEILING, SHALL NOT BE PERMITTED. ROUTE CABLING ON J–HOOKS OR IN TELECOM CABLE RUNWAY IN A NEAT BUNDLE HELD TOGETHER WITH PLENUM RATED VELCRO FASTENERS.

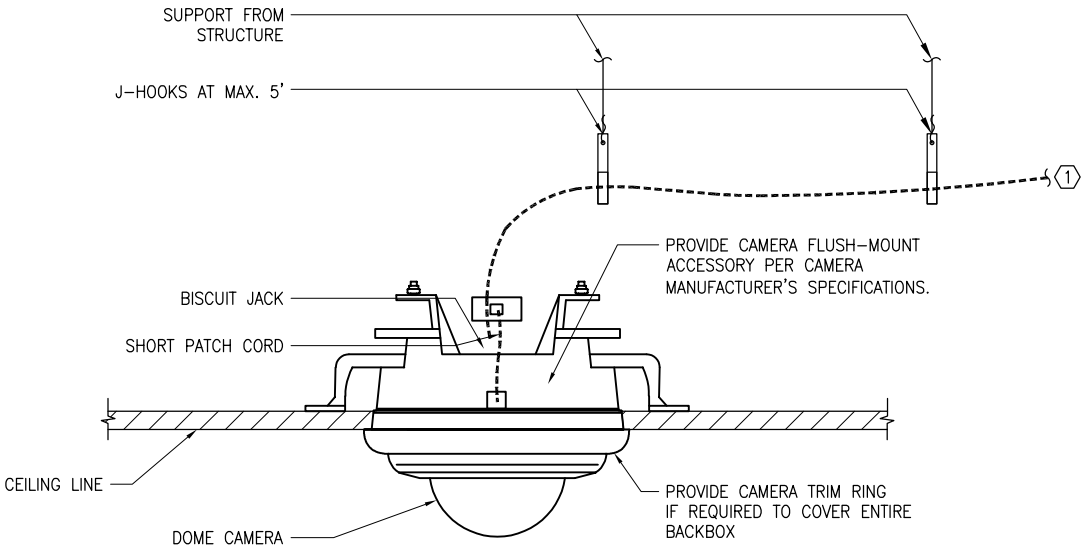
5. CONDUIT, WIRING, AND ASSOCIATED JUNCTION BOXES SHALL BE CONCEALED WITHIN WALLS, FLOORS, OR CEILINGS UNLESS OTHERWISE NOTED. PROVIDE PULL STRING SECURED ON BOTH SIDES IN ALL CONDUIT DURING ROUGH–IN.

6. HOMERUNS FOR MULTIPLE LIKE DEVICES CAN BE COMBINED INTO A SINGLE CONDUIT AS LONG AS THE OVERALL CAPACITY OF THE HOMERUN IS EQUAL TO OR LARGER THAN THE CAPACITY (AREA) OF THE INDIVIDUAL CONDUITS IT INCORPORATES. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO CALCULATE THE CONDUIT CAPACITY REQUIRED TO INCLUDE CABLING FROM MULTIPLE DOORS, CAMERAS, OR INTERCOMS TO ENSURE THAT THE NEC REQUIRED FILL IS NOT EXCEEDED.

7. BACK BOXES SHALL BE FLUSH MOUNTED UNLESS OTHERWISE NOTED, AND WHERE REQUIRED, COMPLY WITH THE ABAAG HEIGHT SPECIFICATIONS.

8. JUNCTION BOXES SHALL BE INSTALLED AT LOGICAL, ACCESSIBLE LOCATIONS WITH NO MORE THAN 180 DEGREES OF BENDS BETWEEN PULL BOXES DURING INSTALLATION, OR NO MORE THAN 200' DISTANCE BETWEEN PULL BOXES.

9. CONDUIT PENETRATIONS THROUGH NON FIRE RATED WALLS SHALL BE CAULKED ON BOTH SIDES WITH RESILIENT NON–HARDENING SEALANT.



GENERAL NOTES:

1. REFERENCE DRAWING VSS-GEN1 FOR CONDUIT AND CABLE ROUTING REQUIREMENTS.

KEYED NOTES:

(1) CATEGORY 6 CABLING TO TELECOMMUNICATION ROOM PROVIDED BY DARTHMOUTH COLLEGE IT DEPARTMENT. INSTALL ON DEDICATED J-HOOKS OR CABLE TRAY.

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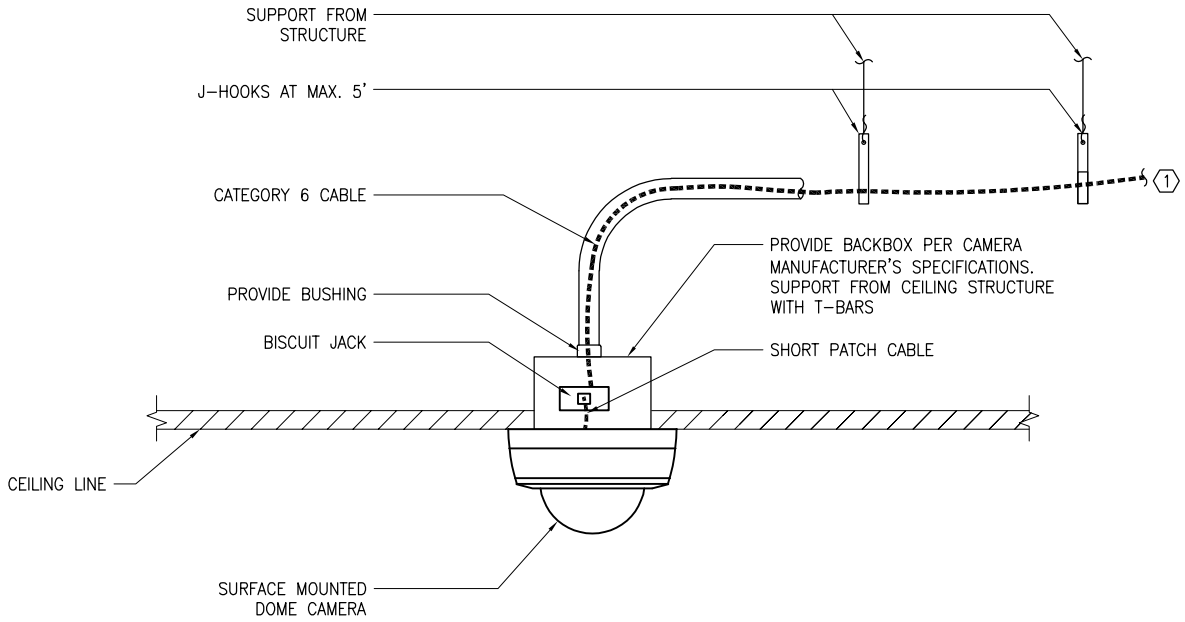
Title	TYPICAL FLUSH CEILING MOUNTED CAMERA		
System	VIDEO SURVEILLANCE	Revision	1.0
Date	2/14/2024	Scale	NTS

VSS-CFM



GENERAL NOTES:

1. REFERENCE DRAWING VSS-GEN1 FOR CONDUIT AND CABLE ROUTING REQUIREMENTS.

KEYED NOTES:

(1) CATEGORY 6 CABLING TO TELECOMMUNICATION ROOM PROVIDED BY DARTHMOUTH COLLEGE IT DEPARTMENT. INSTALL IN CONDUIT, ON DEDICATED J-HOOKS, OR IN TELECOM CABLE TRAY.

Dartmouth College
Facilities Operations
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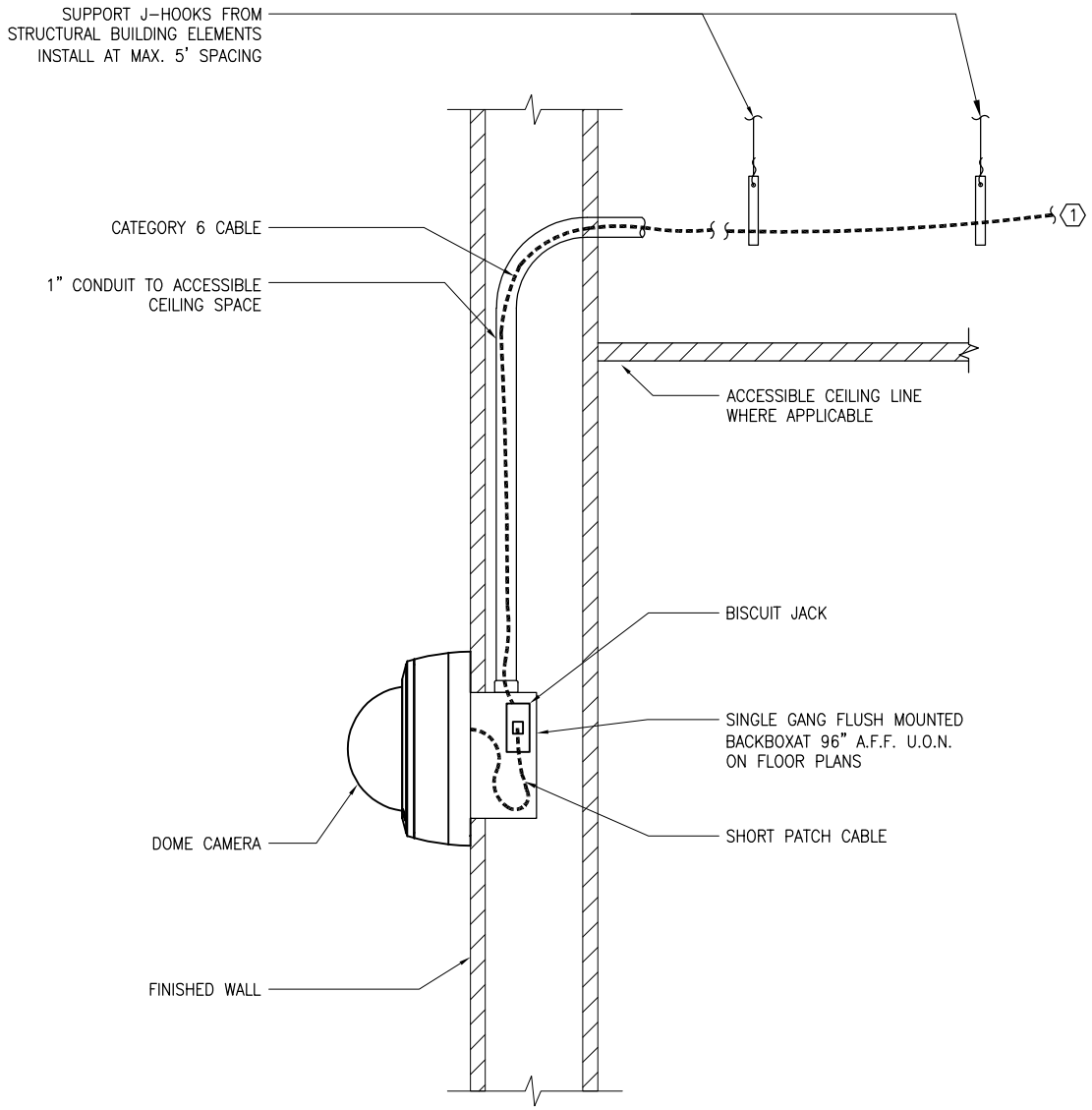
Title	TYPICAL CEILING SURFACE MOUNTED CAMERA		
System	VIDEO SURVEILLANCE	Revision	1.0
Date	2/14/2024	Scale	NTS

VSS-CSM



GENERAL NOTES:

1. REFERENCE DRAWING VSS-GEN1 FOR CONDUIT AND CABLE ROUTING REQUIREMENTS.

KEYED NOTES:

(1) CATEGORY 6 CABLING TO TELECOMMUNICATION ROOM PROVIDED BY DARTHMOUTH COLLEGE IT DEPARTMENT. INSTALL IN CONDUIT, ON DEDICATED J-HOOKS, OR IN TELECOM CABLE TRAY.

Dartmouth College
Facilities Operations
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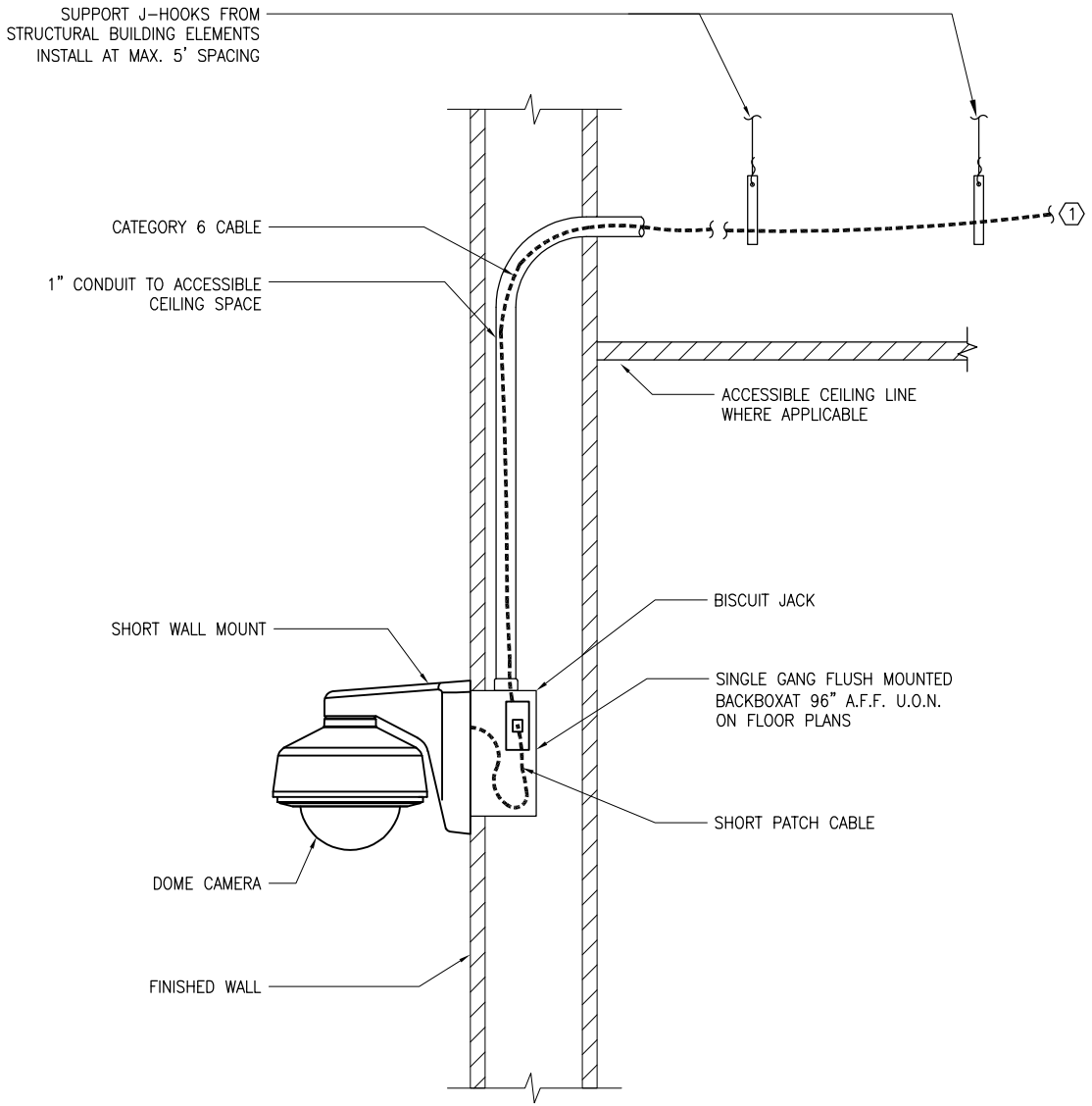
Title	TYPICAL SURFACE WALL MOUNTED CAMERA		
System	VIDEO SURVEILLANCE	Revision	1.0
Date	2/14/2024	Scale	NTS

VSS-WSM



GENERAL NOTES:

1. REFERENCE DRAWING VSS-GEN1 FOR CONDUIT AND CABLE ROUTING REQUIREMENTS.

KEYED NOTES:

(1) CATEGORY 6 CABLING TO TELECOMMUNICATION ROOM PROVIDED BY DARTHMOUTH COLLEGE IT DEPARTMENT. INSTALL IN CONDUIT, ON DEDICATED J-HOOKS, OR IN TELECOM CABLE TRAY.

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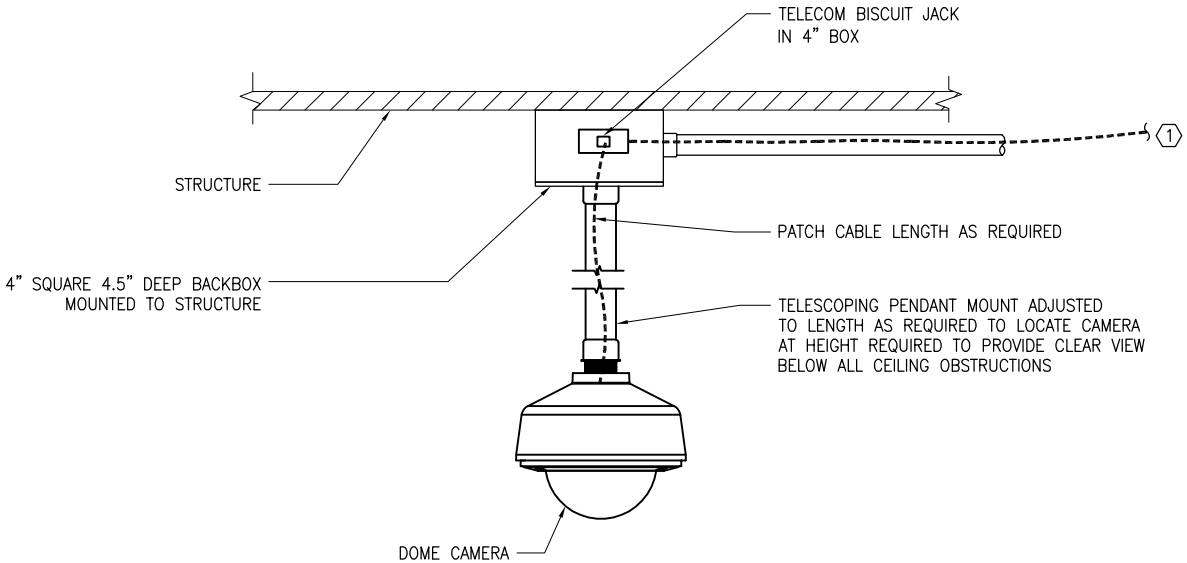
Title	TYPICAL WALL PENDANT MOUNTED CAMERA		
System	VIDEO SURVEILLANCE	Revision	1.0
Date	2/14/2024	Scale	NTS

VSS-WPM



GENERAL NOTES:

1. REFERENCE DRAWING VSS-GEN1 FOR CONDUIT AND CABLE ROUTING REQUIREMENTS.

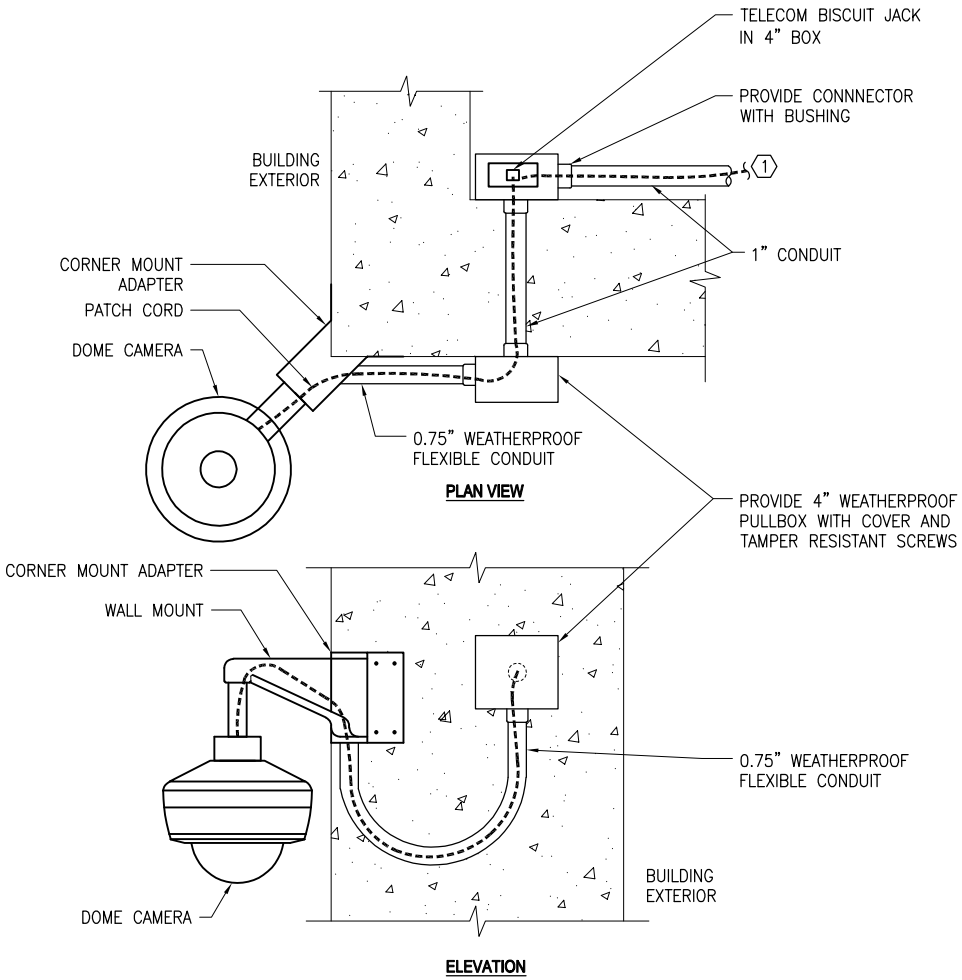
KEYED NOTES:

(1) CATEGORY 6 CABLING TO TELECOMMUNICATION ROOM PROVIDED BY DARTHMOUTH COLLEGE IT DEPARTMENT. INSTALL IN CONDUIT, ON DEDICATED J-HOOKS, OR IN TELECOM CABLE TRAY.

Dartmouth College
Facilities Operations
& Management

Title	TYPICAL CEILING PENDANT MOUNTED CAMERA		
System	VIDEO SURVEILLANCE	Revision	1.0
Date	2/14/2024	Scale	NTS

VSS-CPM



GENERAL NOTES:

1. REFERENCE DRAWING VSS-GEN1 FOR CONDUIT AND CABLE ROUTING REQUIREMENTS.

KEYED NOTES:

(1) CATEGORY 6 CABLING TO TELECOMMUNICATION ROOM PROVIDED BY DARTHMOUTH COLLEGE IT DEPARTMENT. INSTALL IN CONDUIT, ON DEDICATED J-HOOKS, OR IN TELECOM CABLE TRAY.

Dartmouth College
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Title	TYPICAL CORNER MOUNTED CAMERA		
System	VIDEO SURVEILLANCE	Revision	1.0
Date	2/14/2024	Scale	NTS

VSS-CRM

GENERAL NOTES:

1. SECURITY CABLING SHALL BE INSTALLED IN CONDUIT IN WALLS AND CEILINGS WHERE ROUTED THROUGH NON–RESTRICTED (PUBLIC SPACE). WHERE ROUTED THROUGH ACCESSIBLE CEILINGS IN RESTRICTED SPACE SECURITY CABLES MAY BE SUPPORTED BY J–HOOKS SPACED NO MORE THAN 5' APART OR BY CABLE TRAY. RESTRICTED SPACE IS THAT SPACE THAT CANNOT BE ENTERED WITHOUT PASSING THROUGH A CARD READER CONTROLLED DOOR.

2. WHERE CABLES PASS THROUGH SPACES WITH EXPOSED CEILING OR ABOVE INACCESSIBLE CEILING, INSTALL CABLES IN CONDUIT.

3. PROVIDE CONDUIT SLEEVES THROUGH ALL WALL PENETRATIONS AND FIRESTOP AS REQUIRED FOR PARTITION TYPE.

4. CABLING INSTALLED ON J–HOOKS, AND CONDUIT RUNS SHALL BE ROUTED PARALLEL OR PERPENDICULAR TO WALLS AND STRUCTURAL ELEMENTS. RUNNING CABLING OR CONDUIT DIAGONALLY ACROSS ANY SPACE, INCLUDING AREAS CONCEALED ABOVE FINISHED CEILING, SHALL NOT BE PERMITTED. ROUTE CABLING ON J–HOOKS OR IN TELECOM CABLE RUNWAY IN A NEAT BUNDLE HELD TOGETHER WITH PLENUM RATED VELCRO FASTENERS.

5. CONDUIT, WIRING, AND ASSOCIATED JUNCTION BOXES SHALL BE CONCEALED WITHIN WALLS, FLOORS, OR CEILINGS UNLESS OTHERWISE NOTED. PROVIDE PULL STRING SECURED ON BOTH SIDES IN ALL CONDUIT DURING ROUGH–IN.

6. HOMERUNS FOR MULTIPLE LIKE DEVICES CAN BE COMBINED INTO A SINGLE CONDUIT AS LONG AS THE OVERALL CAPACITY OF THE HOMERUN IS EQUAL TO OR LARGER THAN THE CAPACITY (AREA) OF THE INDIVIDUAL CONDUITS IT INCORPORATES. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO CALCULATE THE CONDUIT CAPACITY REQUIRED TO INCLUDE CABLING FROM MULTIPLE DOORS, CAMERAS, OR INTERCOMS TO ENSURE THAT THE NEC REQUIRED FILL IS NOT EXCEEDED.

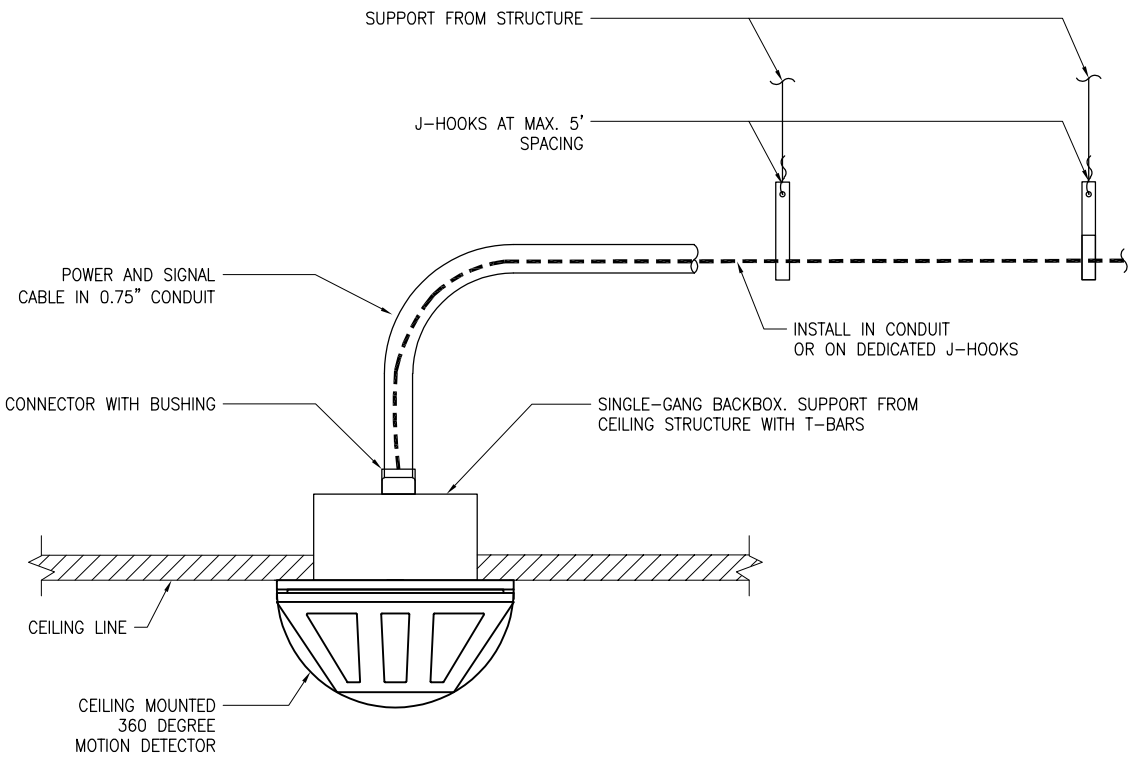
7. BACK BOXES SHALL BE FLUSH MOUNTED UNLESS OTHERWISE NOTED, AND WHERE REQUIRED, COMPLY WITH THE ABAAG HEIGHT SPECIFICATIONS.

8. JUNCTION BOXES SHALL BE INSTALLED AT LOGICAL, ACCESSIBLE LOCATIONS WITH NO MORE THAN 180 DEGREES OF BENDS BETWEEN PULL BOXES DURING INSTALLATION, OR NO MORE THAN 200' DISTANCE BETWEEN PULL BOXES.

9. CONDUIT PENETRATIONS THROUGH NON FIRE RATED WALLS SHALL BE CAULKED ON BOTH SIDES WITH RESILIENT NON–HARDENING SEALANT.

GENERAL NOTES:

1. REFERENCE DRAWING IDS-GEN1 FOR CONDUIT AND CABLE ROUTING REQUIREMENTS.



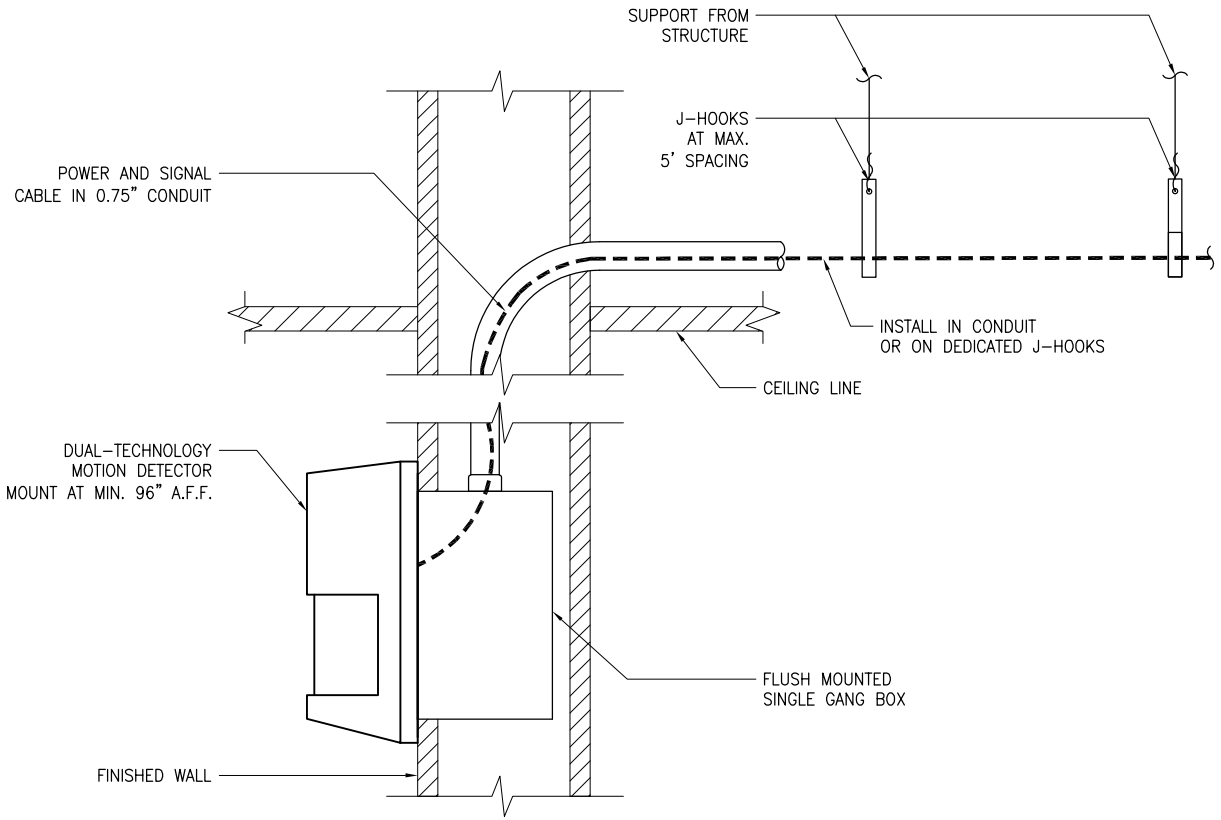
Dartmouth College
Facilities Operations
& Management

Title	TYPICAL CEILING MOUNTED MOTION DETECTOR		
System	INTRUSION DETECTION	Revision	1.0
Date	2/14/2024	Scale	NTS

IDS-MD1

GENERAL NOTES:

1. REFERENCE DRAWING IDS–GEN1 FOR CONDUIT AND CABLE ROUTING REQUIREMENTS.



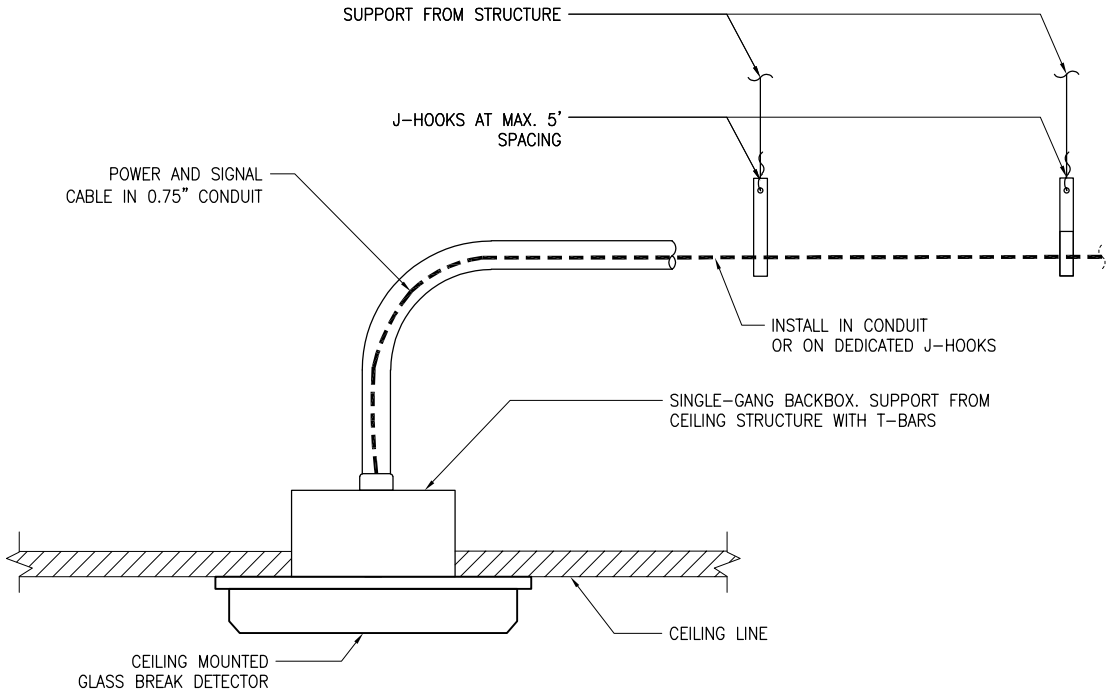
Dartmouth College
Facilities Operations
& Management

Title	TYPICAL WALL MOUNTED MOTION DETECTOR		
System	INTRUSION DETECTION	Revision	1.0
Date	2/14/2024	Scale	NTS

IDS-MD2

GENERAL NOTES:

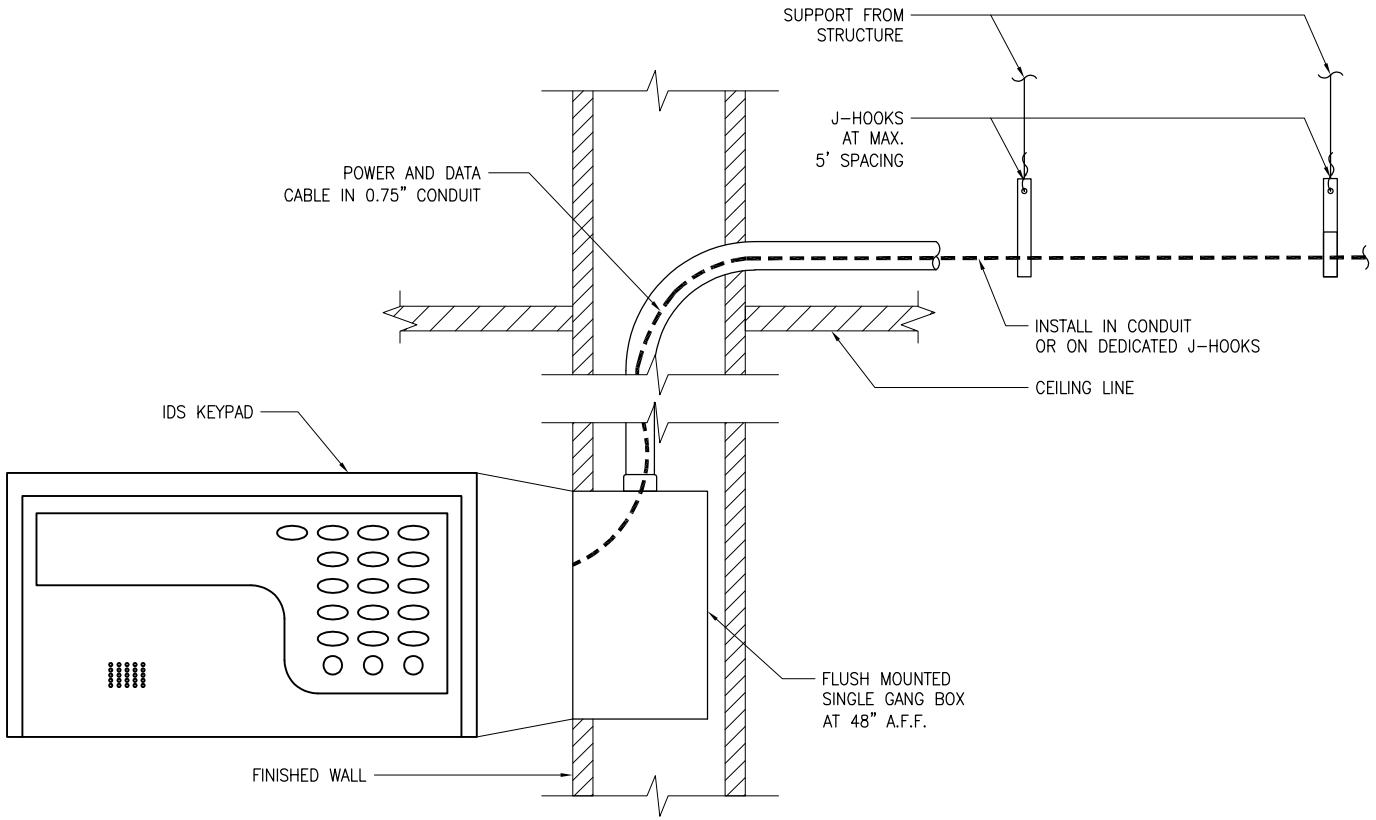
1. REFERENCE DRAWING IDS-GEN1 FOR CONDUIT AND CABLE ROUTING REQUIREMENTS.



Dartmouth College
Facilities Operations
& Management

Title	TYPICAL CEILING GLASS BREAK DETECTOR		
System	INTRUSION DETECTION	Revision	1.0
Date	2/14/2024	Scale	NTS

IDS-GB1



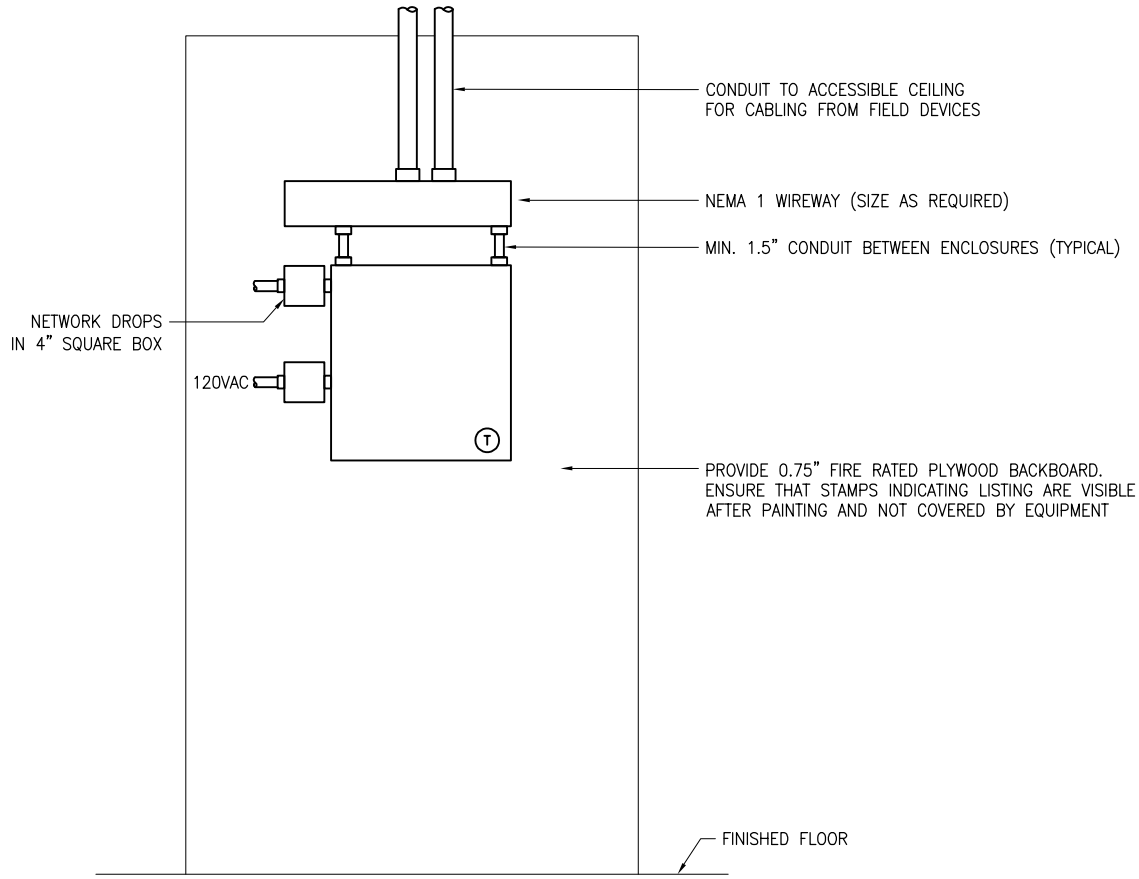
GENERAL NOTES:

1. REFERENCE DRAWING IDS-GEN1 FOR CONDUIT AND CABLE ROUTING REQUIREMENTS.

Dartmouth College
Facilities Operations
& Management

Title	TYPICAL IDS KEYPAD		
System	INTRUSION DETECTION	Revision	1.0
Date	2/14/2024	Scale	NTS

VSS-KP



GENERAL NOTES:

1. REFERENCE DRAWING IDS-GEN1 FOR CONDUIT AND CABLE ROUTING REQUIREMENTS.
2. DETAIL INDICATES GENERIC LAYOUT AND EQUIPMENT QUANTITIES. COORDINATE WITH ACTUAL TYPE OF EQUIPMENT PROVIDED AND FIELD CONDITIONS.
3. CONFIGURE IDS CONTROLLER TO MONITOR AC POWER FAILURE AND LOW BATTERY CONDITION.

Dartmouth College
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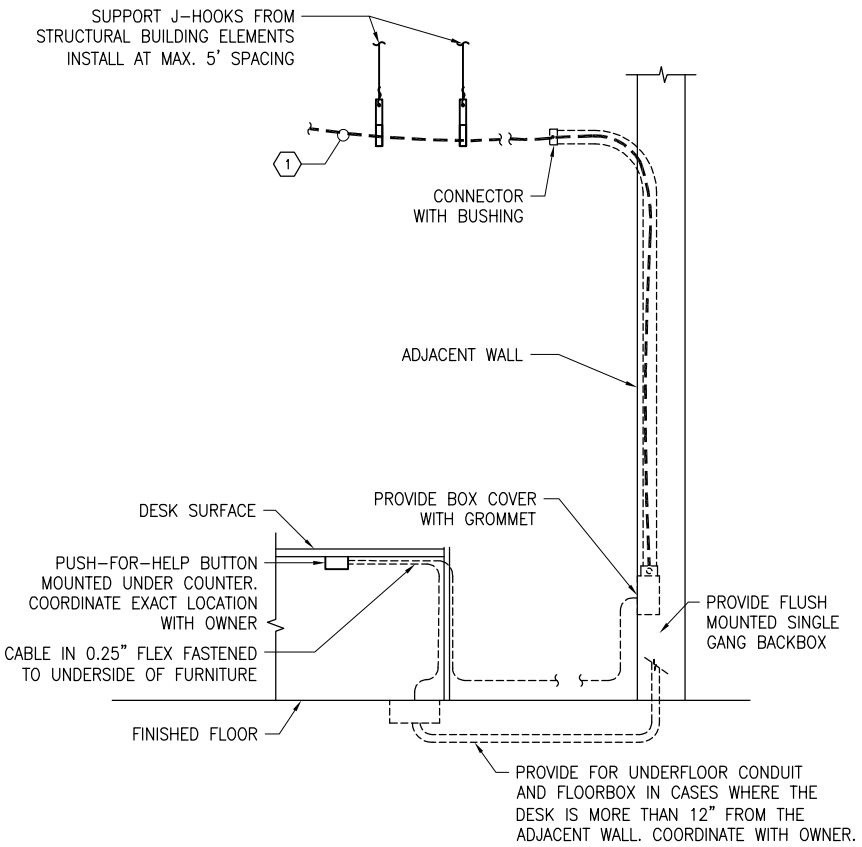
Title	TYPICAL IDS CONTROL PANEL		
System	INTRUSION DETECTION	Revision	1.0
Date	2/14/2024	Scale	NTS

IDS-CP



GENERAL NOTES:

1. REFERENCE DRAWING IDS-GEN1 FOR CONDUIT AND CABLE ROUTING REQUIREMENTS.

Dartmouth College
Facilities Operations
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Title	TYPICAL IDS DURESS BUTTON		
System	INTRUSION DETECTION	Revision	1.0
Date	2/14/2024	Scale	NTS

IDS-DB