

DIVISION 28 ELECTRONIC SAFETY AND SECURITY

CENTRALLY MANAGED ELECTRONIC ACCESS CONTROL, VIDEO SURVEILLANCE, AND INTRUSION ALARM SYSTEMS

1. All questions on equipment approvals in this section shall be forwarded to the Security Program Manager at 400 Donhowe Building, 612-626-2936.
2. Requirements and standards in this section apply to all security systems to be installed, retrofitted, repaired, or otherwise modified by any project, entity, or department.
3. The Security Program Manager will conduct a security assessment during the Design Development phase of all new construction or retrofits.
 - 3.1. The purpose of the security assessment shall be to apply University of Minnesota security design criteria and how electronic access control, video surveillance, alarm systems, systems intelligence, and the environmental factors will be incorporated into the scope of the project.
 - A. Determine how electronic access control, surveillance, alarms, and environmental factors shall be incorporated into the scope of the project
 - B. Assess the design for crime prevention and public safety system utilization in real time
 - C. Assess the design for criminology and public safety system utilization of archived data and forensics
 - D. Incorporate Department of Public Safety systems for wide area digital presents for emergency, security, and safety management

Electronic Access Control Systems

4. Incorporate a minimum of two exterior doors with hard-wired card access, door monitoring switches for all other exterior doors and a controller for all new buildings.
 - 4.1. All exterior card reader doors shall have door position switches, request to exit sensors, ADA door opener coordinator board (where applicable), and card readers.
 - 4.2. Electronically controlled exterior entries that do not have an occupied reception area shall include surveillance.
 - 4.3. All non-reader exterior doors are ~~exit only~~ unless electronically controlled to unlocked and should have

a Door Position Switch.

- 4.4. All exterior electronically controlled doors will have the following components:
 - 4.4.1. Exit Sensor
 - 4.4.2. Door Position Switch
 - 4.4.3. Refer to [28.2](#) for specific hardware
5. Rekeying of all exterior doors and/or mullions is required upon completion of installation and testing. Two emergency bypass keys shall be created and distributed as follows to
 - 5.1. Fire Department Lock Box and
 - 5.2. Public Safety key box.
6. All card reader control panels shall have a battery backup, and battery standby power supplies to maintain database programming and card reader operation. Electric locking devices on perimeter doors shall have a battery standby power supply to electric strikes operated by card readers. Refer to [28.2](#).
7. All card readers, perimeter door access control systems, and door monitoring systems shall interface with the University of Minnesota's primary access control system. The aforementioned security assessment will determine if other card readers or door access control systems such as biometric devices shall be required.
8. Use conduit, raceways, ladder racks, and J Hooks on system installation. They shall comply with conduit, raceways, ladder racks, and J Hooks standards specified in construction standards [Division 27 05 28 Pathways for Communications Systems](#) and the manufacturer's requirements of the access control systems.
9. System installation shall use wire and cable that complies with wire and cable standards specified in the manufacturer's requirements.
10. Refer to [Division 8, Section 08700](#) - Finish Hardware for system hardware requirements.
11. Interior access control systems shall have the following components/capabilities:
 - 11.1 Card reader
 - 11.2 Exit Sensor
 - 11.3 Door Position Switch
 - 11.4 ADA operation and integration with card reader
 1. during unlock times ADA paddles are enabled
 2. during lock times ADA paddles will only operate following a valid card read
 - 11.5 Refer to [28.2](#) for specific hardware
12. Nominal Card Reader Mounting Height: Card readers shall be mounted at the following heights:
 - A. Interior: 30 inches to center of card reader above the finished floor. If mounted with an ADA Power Operated door paddle, the door paddle is mounted at 30 inches to the center of the 6 inch diameter round door paddle and the card reader is mounted alongside also at 30 inches to center. If insufficient room to mount side by side, the card reader will be mounted above the ADA Power Operated door paddle at 39 inches to the center of the card reader.
 - B. Exterior: 30 inches to center of card reader above the finished floor. If mounted with an ADA

Power Operated door paddle, the door paddle is mounted at 30 inches to the center of the 6 inch diameter round door paddle and the card reader is mounted alongside also at 30 inches to center. If insufficient room to mount side by side, the card reader will be mounted above the ADA Power Operated door paddle at 39 inches to the center of the card reader.

C. Elevators: 36 inches to center above the finished floor

D. Bollard Mount: 30 inches to center of card reader above the walkway. . If mounted with an ADA Power Operated door paddle, the door paddle is mounted at 30 inches to the center of the 6 inch diameter round door paddle and the card reader is mounted above the ADA Power Operated door paddle at 39 inches to the center of the card reader.

13. Card Reader Control Panels: Card reader controllers shall be compatible with the University's primary access control system, and will be specified per Division [28.2](#). No substitutions are permitted. Controllers shall support a minimum of eight card reader interface options unless a substitution is allowed, in the security assessment, which cannot handle 8 reader interfaces. Card reader controllers shall have the following components/capabilities:

13.1. Controllers:

13.1.1. The Controller will be connected with the University Access Control Management System via ethernet connection to the approved security network. The Office of Information Technology is responsible for the connection to the network. Network jacks shall be located inside the access control panel.

13.1.2. For up to date hardware specs refer to division [28.2](#).

14. Elevator Control: Elevators with access control capabilities shall be managed from the University Card Access Management System with cable and wire that connects the card reader to the iStar and the iStar to the elevator controller, if elevator controller is required. Refer to Division 14, Section 14200 – Elevators

15. Key Safes: Security assessments may dictate that a key safe is required for a given building, depending on building design or usage. If a key safe is determined to be required, it will comply with standards specified in [28.2](#).

Video Surveillance Systems

19. Video Surveillance shall be incorporated into the design of all projects, and will meet the specifications as determined by the aforementioned security assessment.

19.1. Refer to section [28.2](#) for up to date specs on video surveillance and intelligence

20. Security/Intrusion Alarms - Refer to section [28.2](#)

Appendix I: Security Design Levels:

Safe - not secure and are vulnerable (any building using a schedule off of the standard are considered safe only)

- Entries Have Card Access
- Perimeter doors Monitored & Electronically controlled for unlocking
- Lobbies Surveyed
- Grounds Surveyed
- Clear line of sight in Lobbies and on the Grounds
- Adequate lighting in all public areas, sidewalks, loading docks, and drives

Secure - minimal level of security, building can be remotely locked down, schedules adhere to standard

- Entries Have Card Access and are secured on one of the standard schedules
- Perimeter doors designated as emergency exit only accept the primary entrances and docks
- Bay doors monitored
- Lobbies Surveyed
- Grounds Surveyed
- Clear line of sight in Lobbies and on the Grounds
- Adequate lighting in all public areas, sidewalks, loading docks, and drives

Comprehensive - secured to the suite level, suites can be isolated and locked down remotely

- Entries Secured with Card Access 24/7 and surveyed
- Bay doors and perimeter doors monitored or secured with card access & surveyed
- Lobbies Surveyed
- Grounds Surveyed
- Suites have card access
- Clear line of sight in Lobbies and on the Grounds
- Adequate lighting in all public areas, sidewalks, loading docks, and drives
- Building has non-occupancy intrusion detection (if applicable)

Protected - secured and actionable remotely down to the suite level

- Entries Secured with Card Access 24/7
- Entry Points Surveyed on grounds
- Entry Points Surveyed internally
- Bay doors and perimeter doors monitored or secured with card access & surveyed
- Main Entry and Main Dock have video intercom for non-card access
- Suites Secured with Card access, entries surveyed, & panic buttons available
- Clear line of sight in Lobbies, at suite entries, and on the Grounds
- Visible security fixtures on the grounds (code blue phones, cameras, stations)
- Adequate lighting in all public areas, sidewalks, loading docks, and drives
- Building has non-occupancy intrusion detection (applicable)

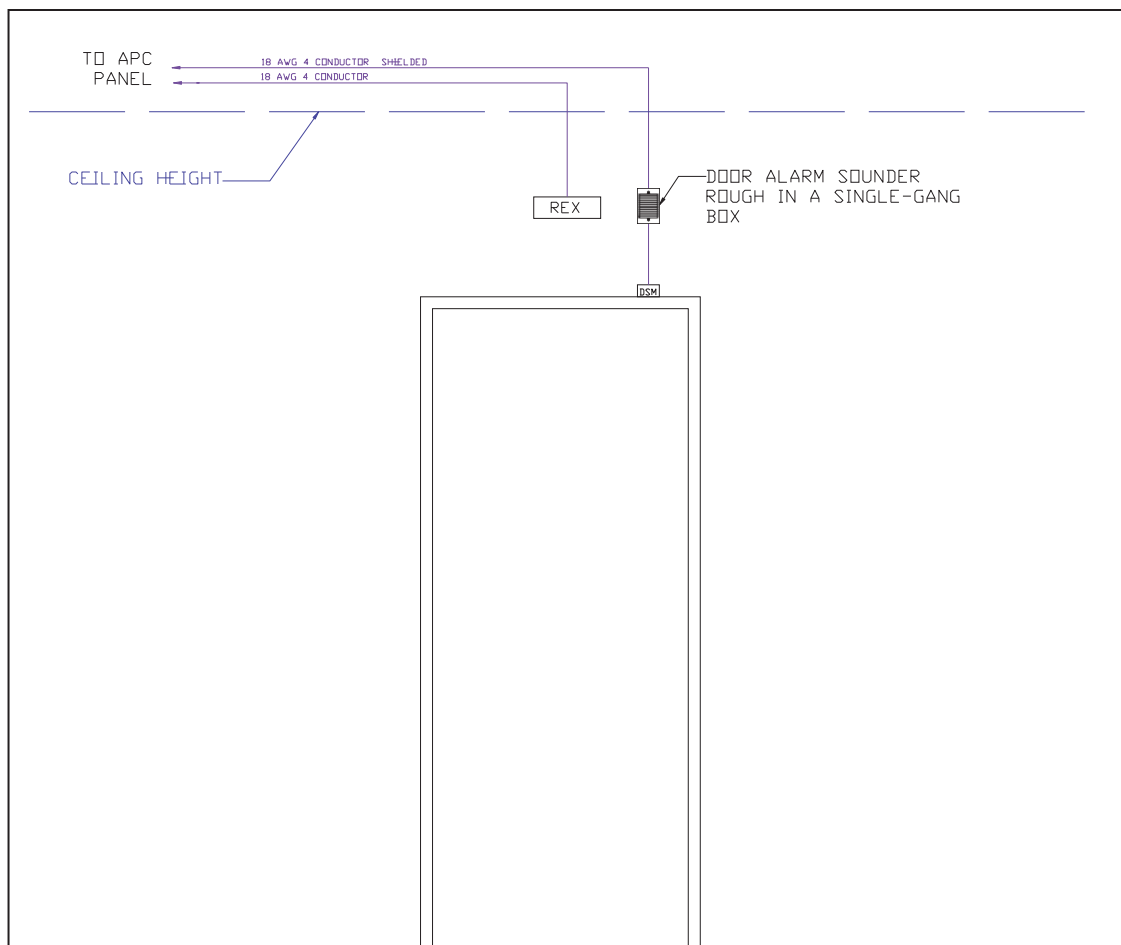
Defended - crime prevention intelligence used, actionable and remote response capable

- Entries Secured with Card Access 24/7
- Elevators secured with card access and surveyed
- Grounds surveyed with analytics and night vision (IR)
- Entries surveyed internally
- Bay doors secured with card access, perimeter doors exit only, & all surveyed
- Main Entry and Main Dock have video intercom
- Suites Secured with Card access, entries surveyed, panic buttons installed
- Clear line of sight in Lobbies, at suite entries, and on the Grounds
- Visible security fixtures on the grounds (code blue phones, cameras, stations)
- Adequate lighting in all public areas, sidewalks, loading docks, and drives

- Building has non-occupancy intrusion detection (applicable)
- Dedicated Security/Reception Person at desk

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1. Door Library



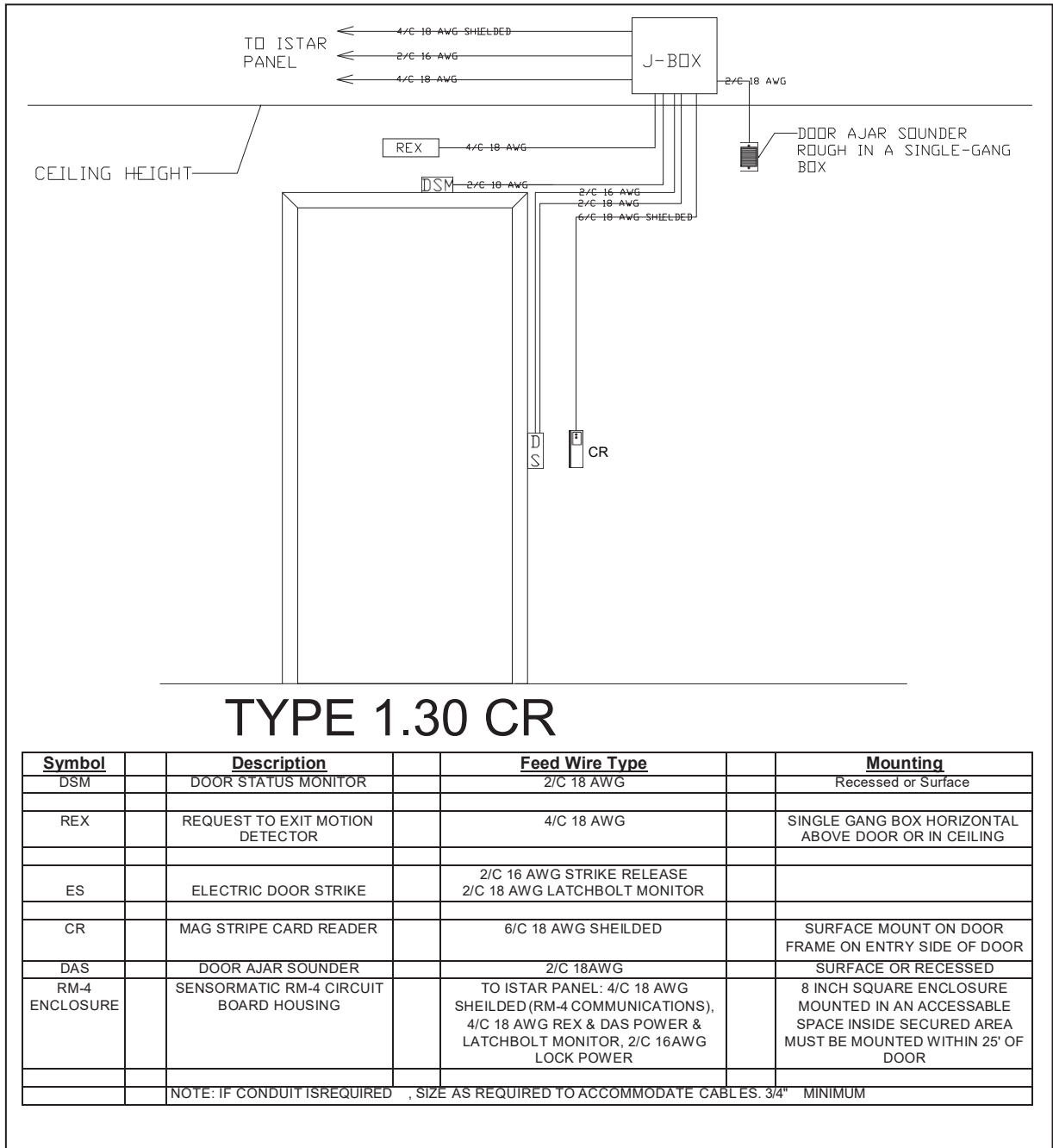
TYPE 1.10 W/ SOUNDER

<u>Symbol</u>	<u>Description</u>	<u>Feed Wire Type</u>	<u>Mounting</u>
DSM	DOOR STATUS MONITOR	2 C/ 18 AWG	RECESSED OR SURFACED
REX	REQUEST TO EXIT	4/C 18 AWG	SURFACE MOUNT ON WALL OR CEILING
DAS	DOOR ALARM SOUNDER	4/C 18 AWG SHEILDDED (TO ISTAR), CONNECT DSM AT DAS	FLUSH MOUNT ON A SINGLE-GANG BOX

NOTE: IF CONDUIT IS REQUIRED, SIZE AS REQUIRED TO ACCOMMODATE CABLES. 3/4" MINIMUM

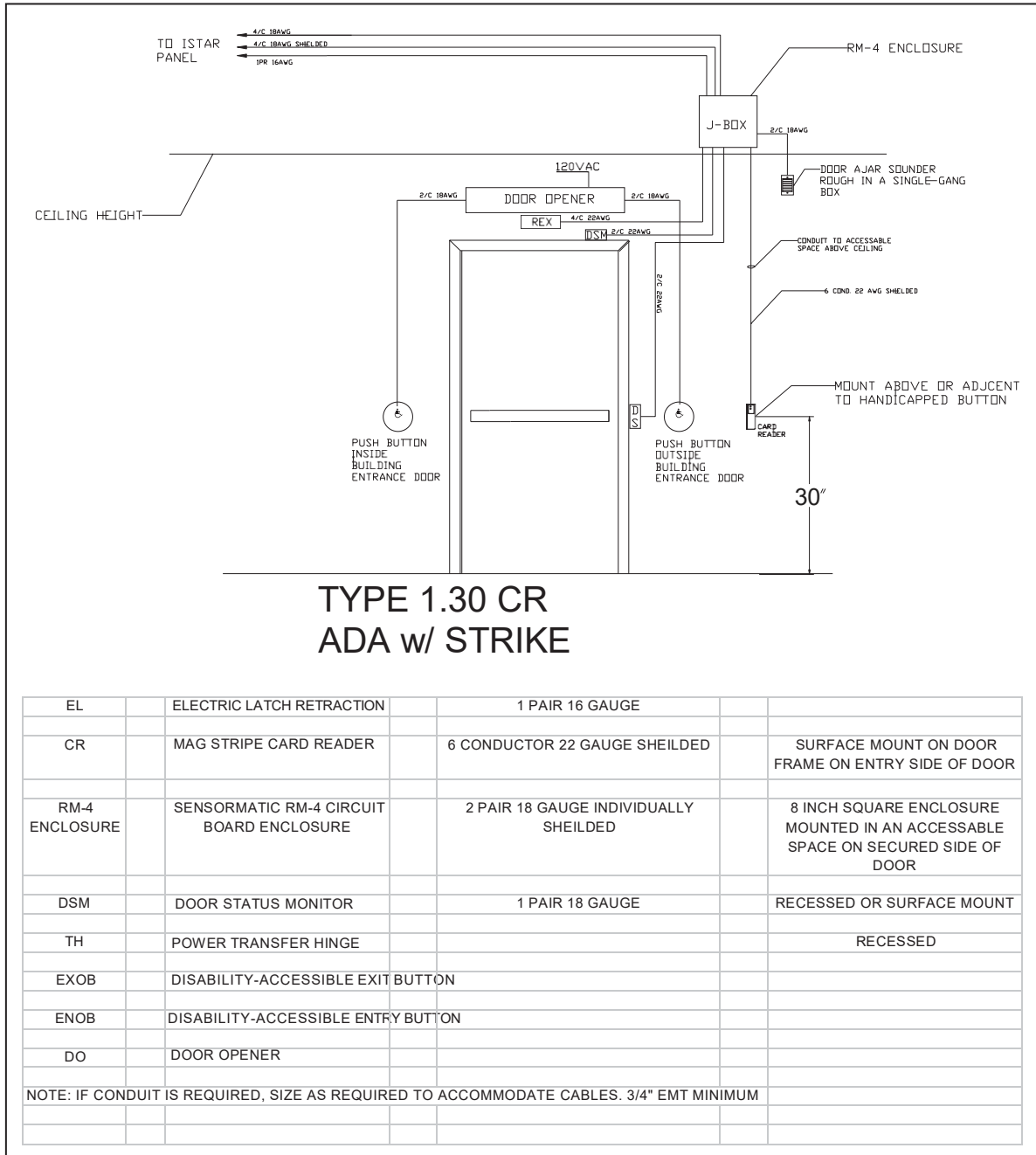
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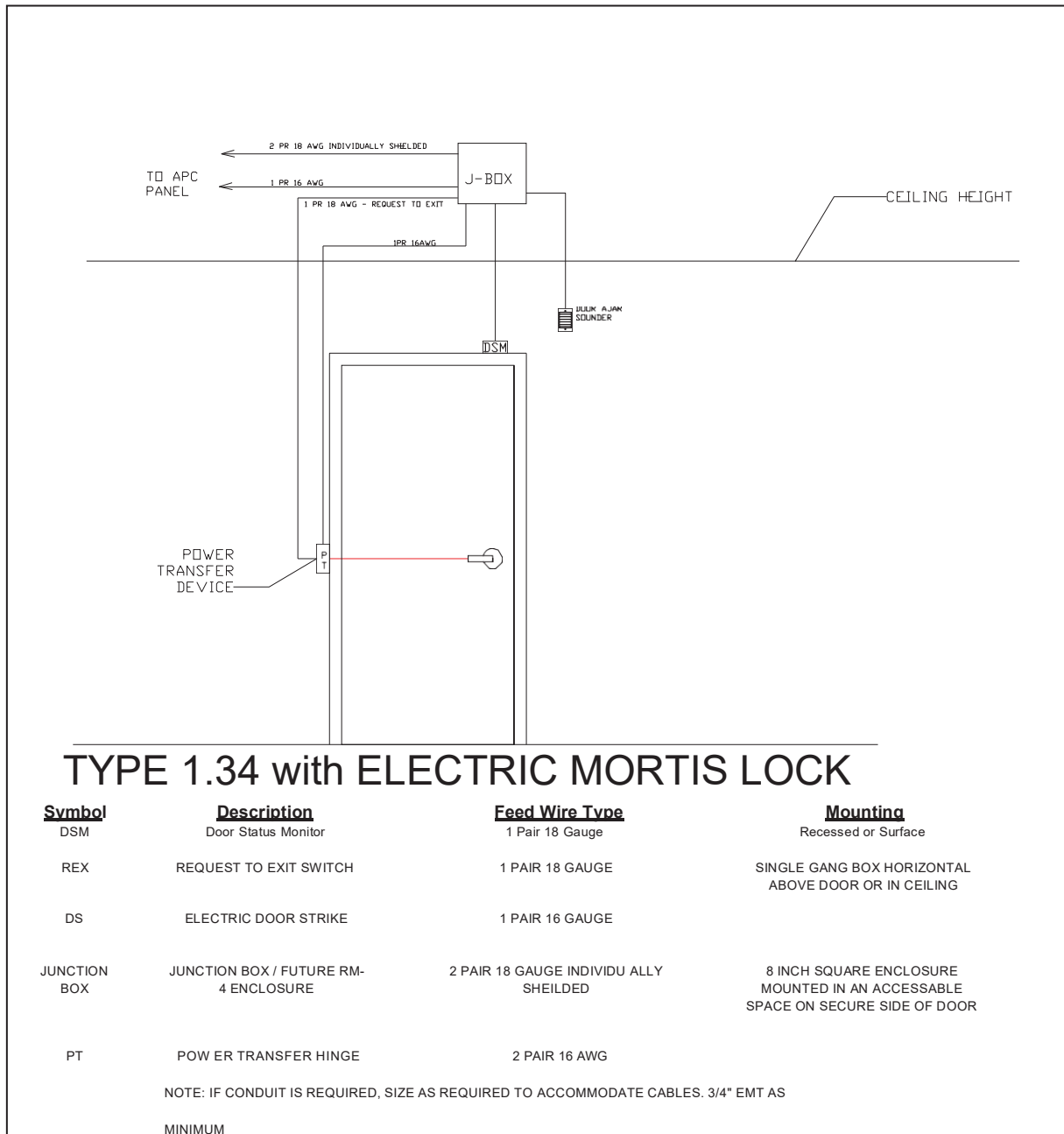
TYPE 1.30 CR

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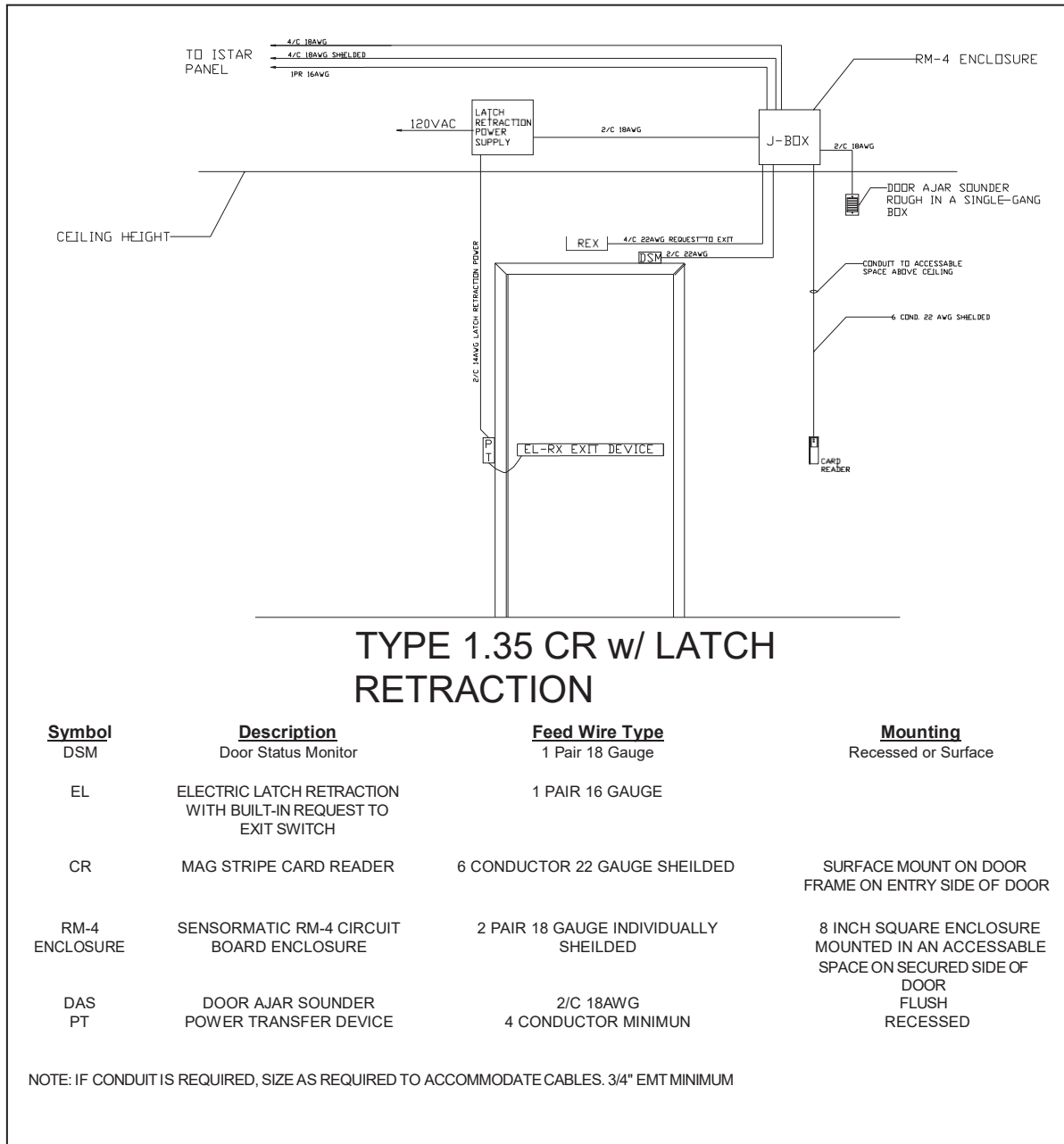
Type 1.30ADA

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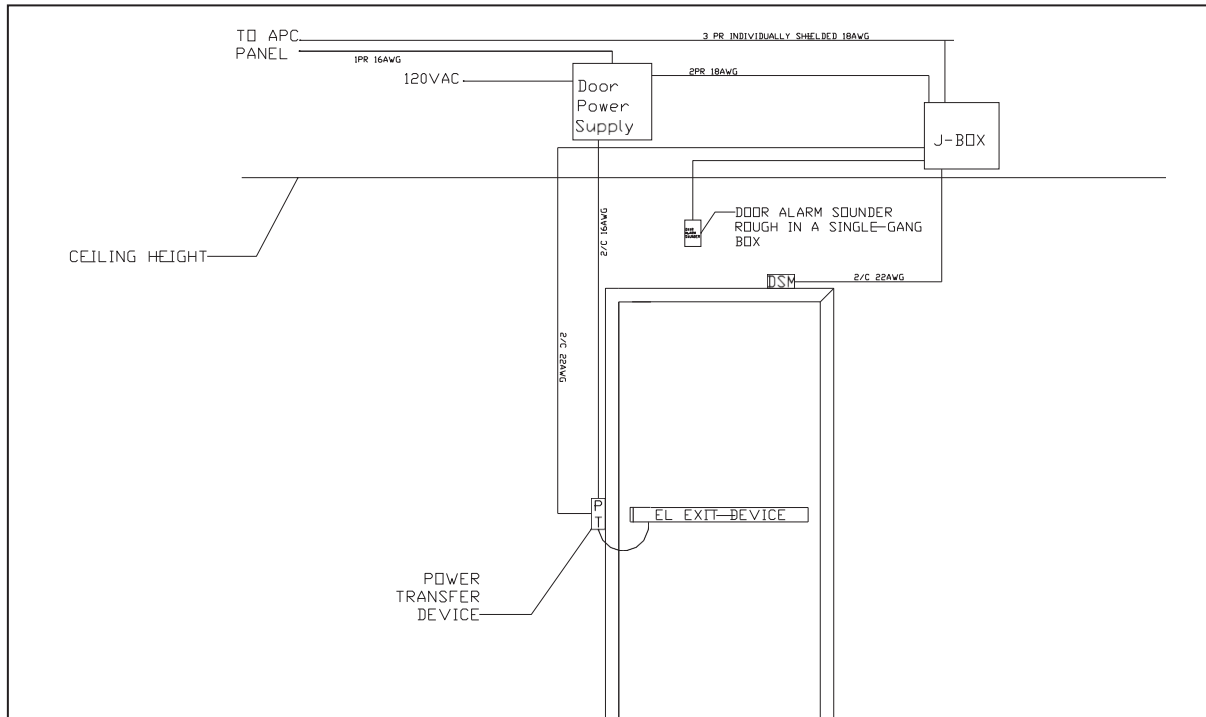
Type 1.34 EL

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TYPE 1.35 CR w/ Latch Retraction

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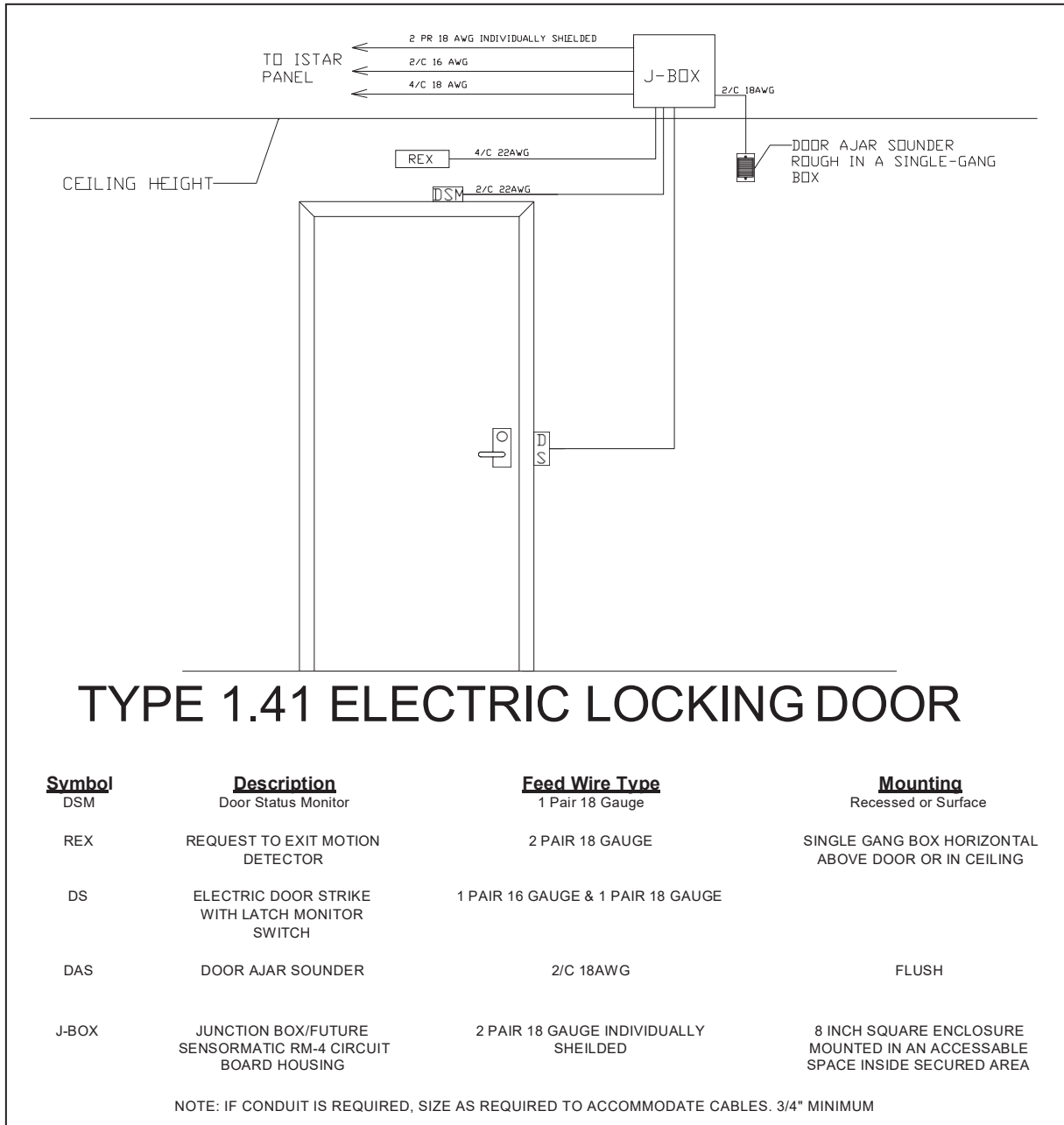
TYPE 1.40 ELECTRIC LOCKING DOOR

<u>Symbol</u>	<u>Description</u>	<u>Feed Wire Type</u>	<u>Mounting</u>
DSM	Door Status Monitor	2/C 22AWG	Recessed or Surface
EL	ELECTRIC LATCH RETRACTION WITH BUILT-IN REQUEST TO EXIT SWITCH	EL 2/C 16 AWG - RX 2/C 22AWG	
DAS	DOOR AJAR SOUNDER	2/C 18 AWG	FLUSH
J-BOX	JUNCTION BOX/ FUTURE SENSORMATIC RM-4 CIRCUIT BOARD ENCLOSURE	2 PAIR 18 GAUGE INDIVIDUALLY SHIELDED	8 INCH SQUARE ENCLOSURE MOUNTED IN AN ACCESSIBLE SPACE ON SECURED SIDE OF DOOR
PT	POWER TRANSFER DEVICE	4 CONDUCTOR MINIMUM	RECESSED

NOTE: IF CONDUIT IS REQUIRED, SIZE AS REQUIRED TO ACCOMMODATE CABLES. 3/4" EMT MINIMUM

Type 1.40 EL

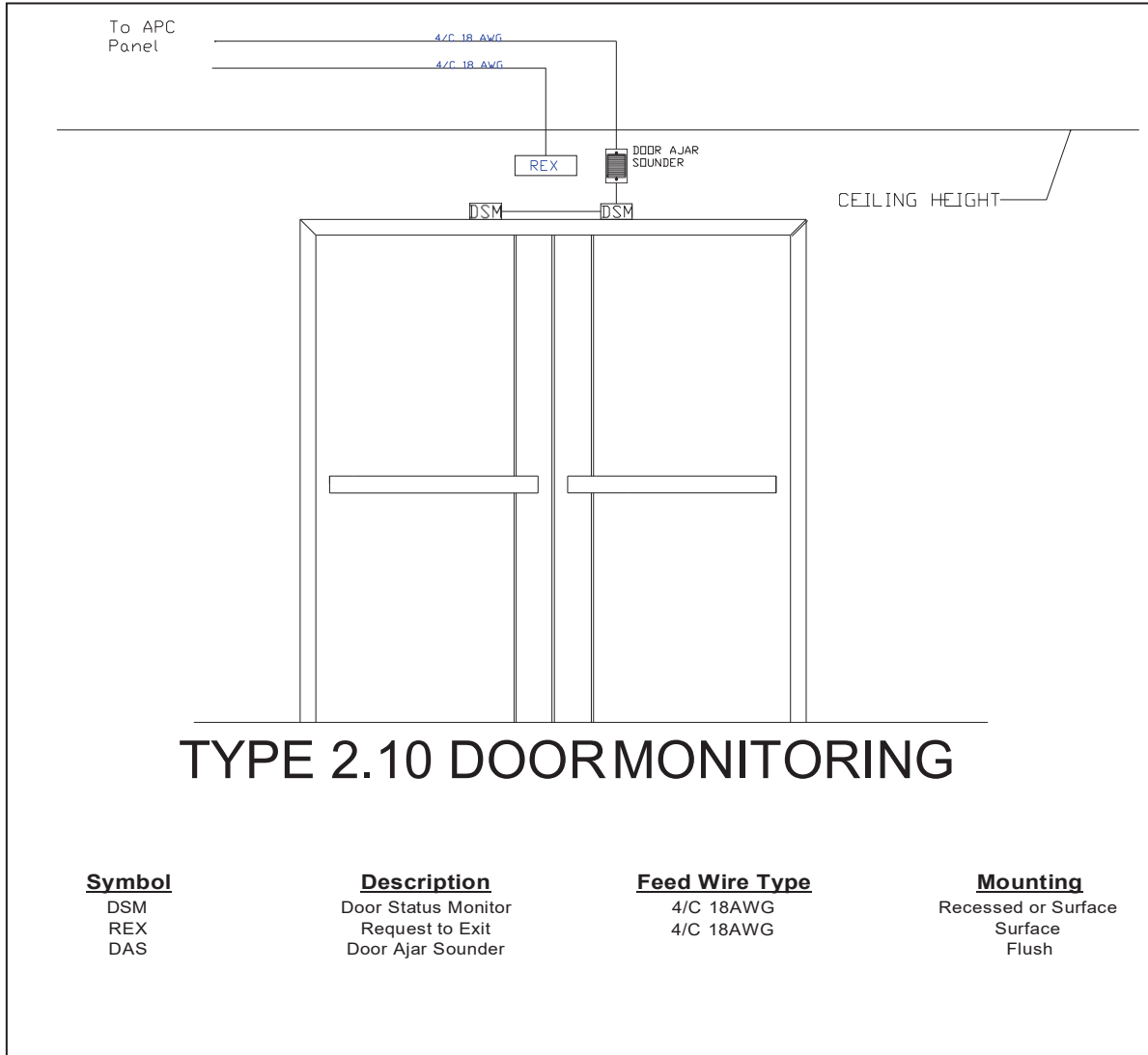
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Type 1.41 EL

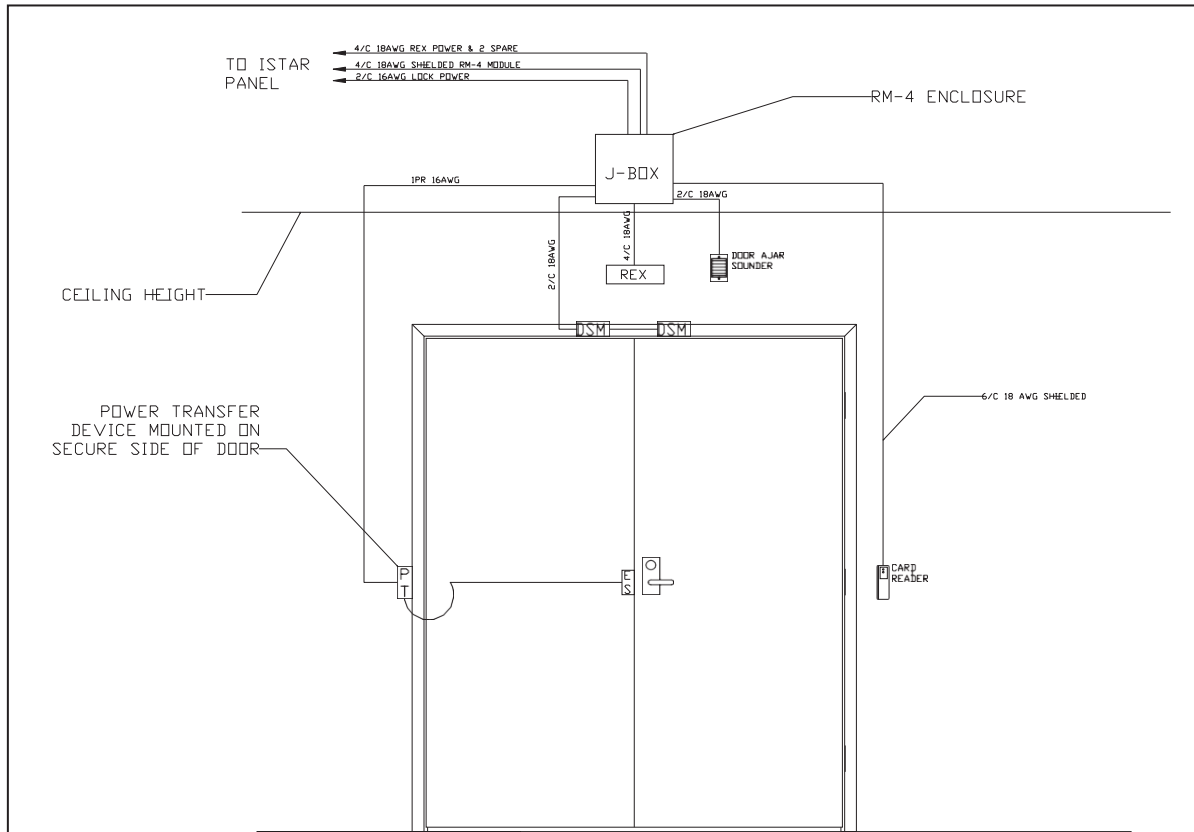
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2. Double Door Library



TYPE 2.10 DSM

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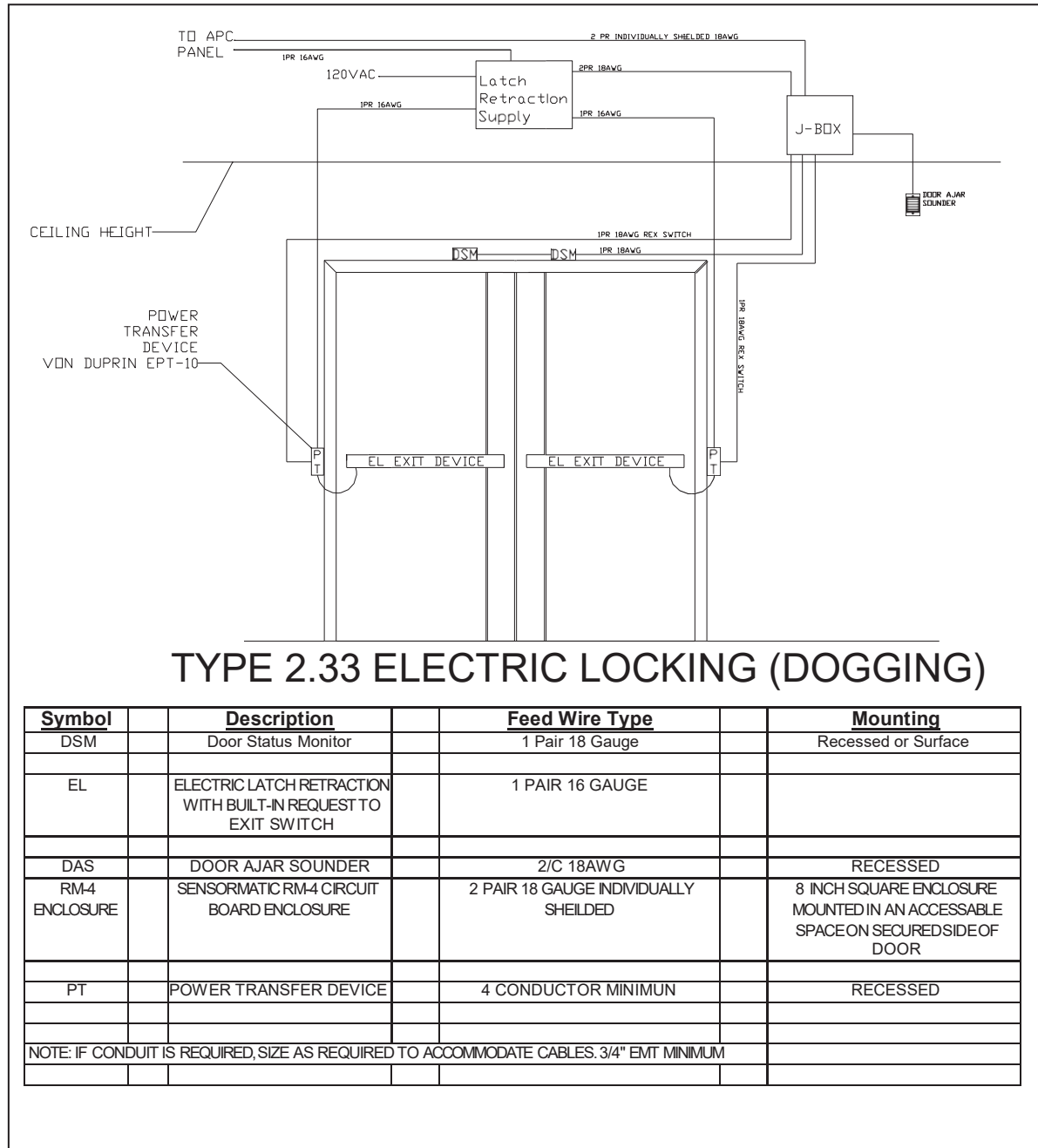
TYPE 2.30 DOUBLE
W/ INACTIVE LEAF

<u>Symbol</u>	<u>Description</u>	<u>Feed Wire Type</u>	<u>Mounting</u>
DSM	Door Status Monitor	2/C 18 AWG	Recessed or Surface
REX	REQUEST TO EXIT MOTION DETECTOR	4/C 18 AWG	SINGLE GANG BOX HORIZONTAL ABOVE DOOR OR IN CEILING
ES	ELECTRIC DOOR STRIKE	2/C 16 AWG	
CR	MAG STRIPE CARD READER	6/C 18 AWG SHELDED	SURFACE MOUNT ON DOOR FRAME ON ENTRY SIDE OF DOOR
RM ENCLOSURE	SENSORMATIC RM-4 CIRCUIT BOARD ENCLOSURE	4/C 18 AWG SHELDED RM-4 MODULE 4/C 18 AWG REX POWER & 2 SPARE 2/C 16 AWG LOCK POWER	8 INCH SQUARE ENCLOSURE MOUNTED IN AN ACCESSIBLE SPACE ON SECURE SIDE OF DOOR
PT	POWER TRANSFER DEVICE	2/C 16 AWG	

NOTE: IF CONDUIT IS REQUIRED, SIZE AS REQUIRED TO ACCOMMODATE CABLES. 3/4" EMT AS MINIMUM

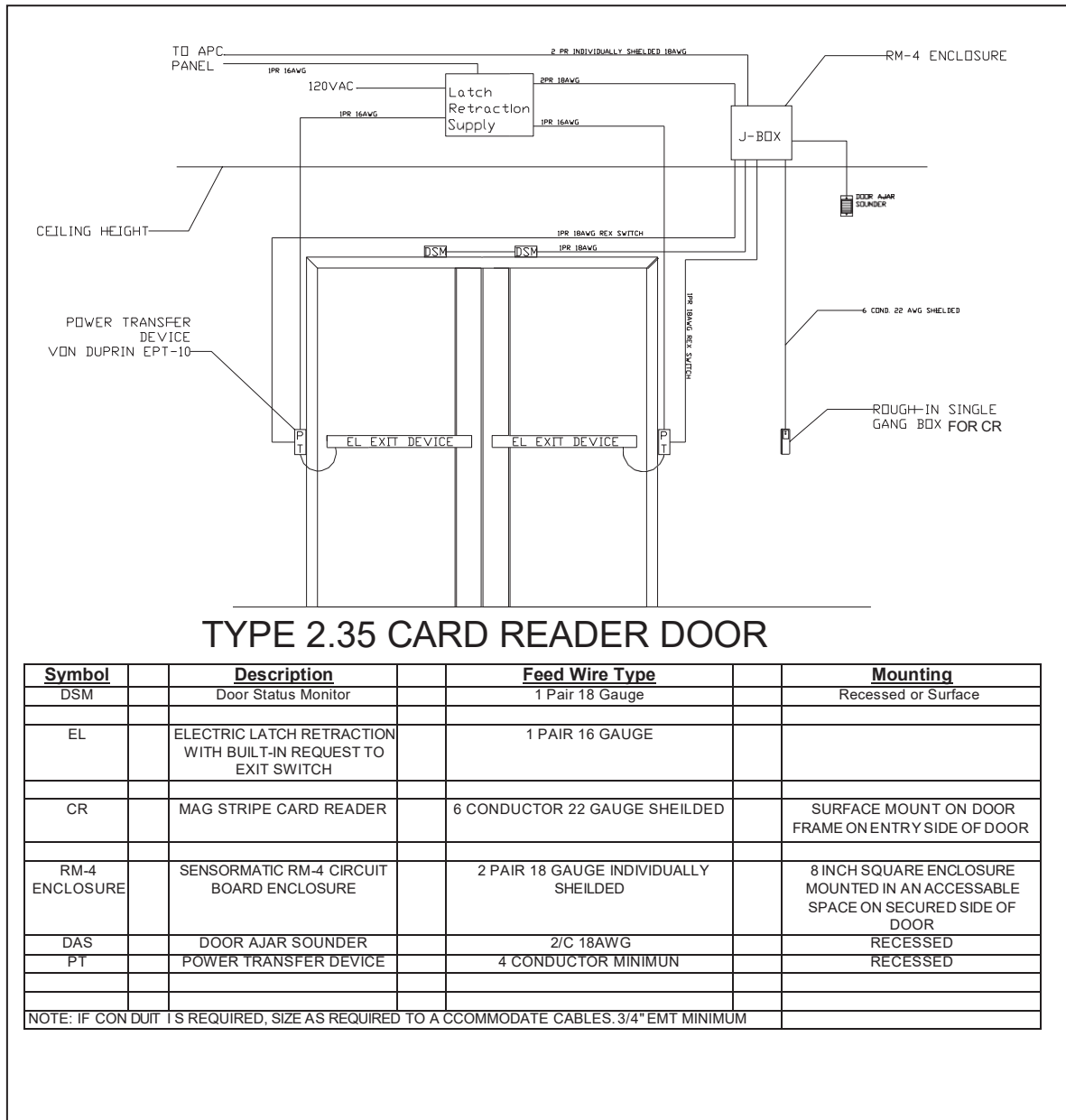
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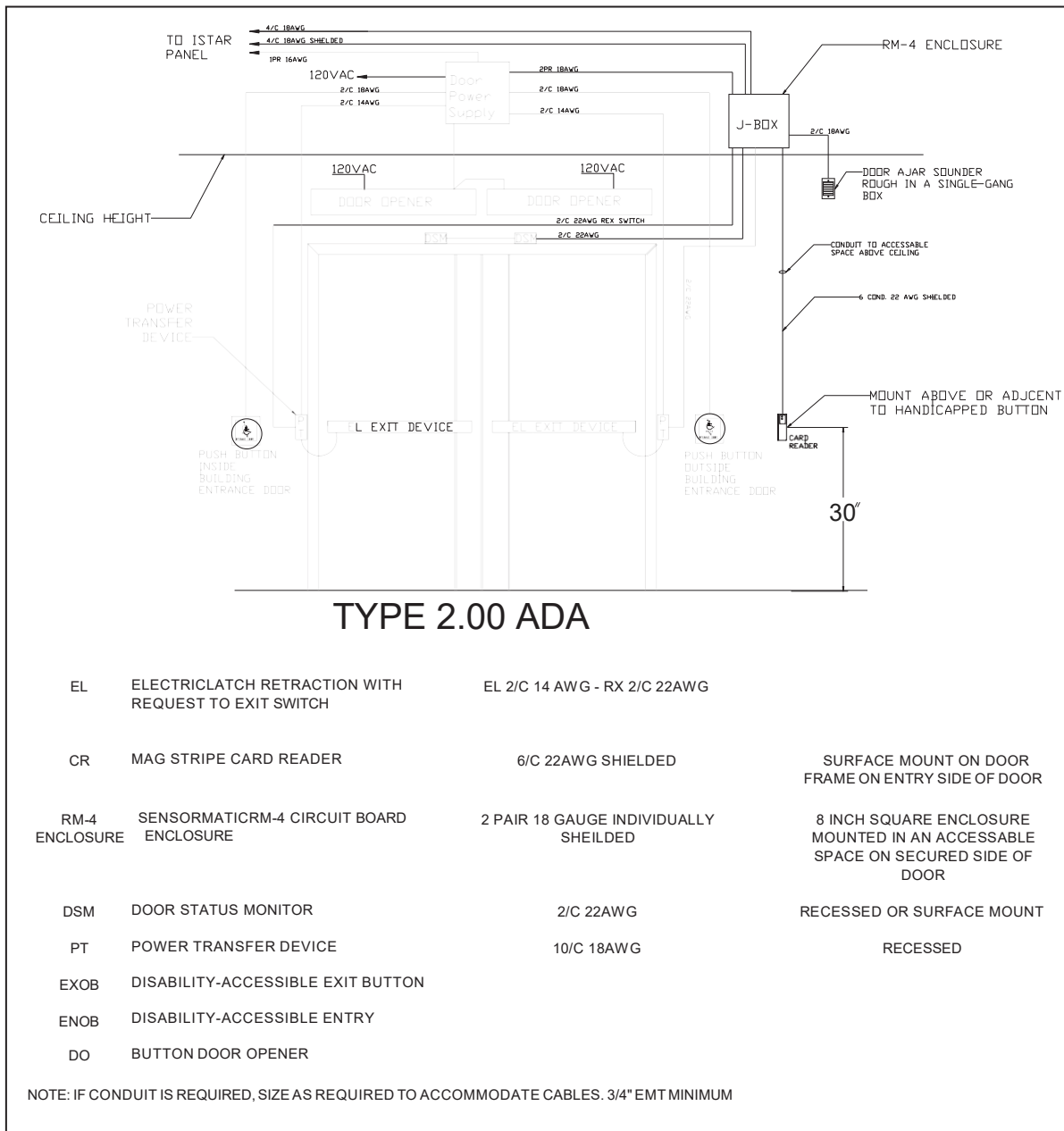
Type 2.33 EL

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Type 2.35 CR

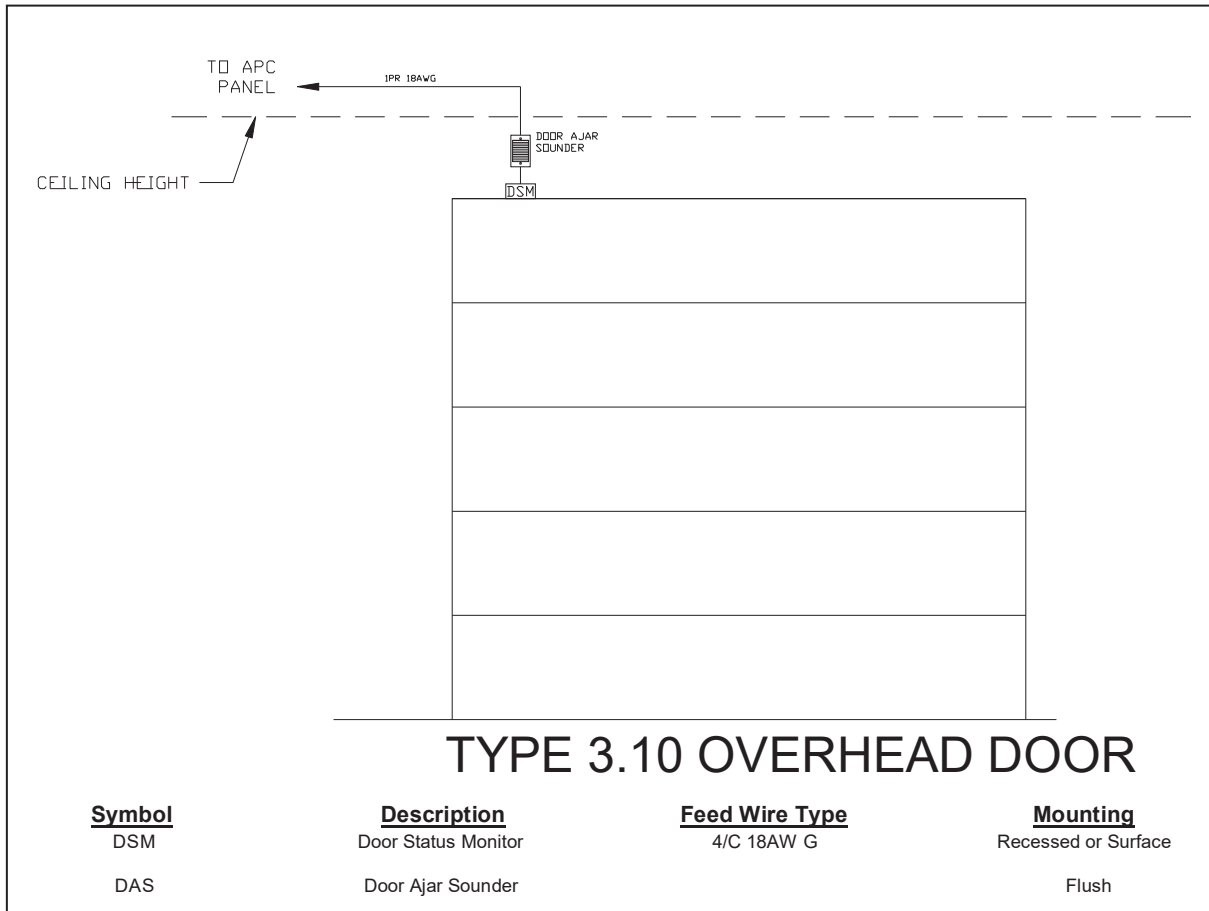
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TYPE 2.00 ADA - CR

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3. Overhead Door Library



TYPE 3.10 DS

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