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*Note to the Designer/Architect/Engineer: These Specifications are basic minimum criteria to be met in preparing the final project specifications for this section, which is the responsibility of the Designer*

York University Building Standards

**1.0 GENERAL**

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## 1.0 GENERAL

### 1.0 Conditions

#### 1.1 Scope of Work

Electric Card Access locks and related hardware

#### 1.2 Guiding Principles:

.1 Building proximity card access systems that are designed to control access to the entire building shall be deployed when:

- .1 it is deemed necessary to limit access to a building during off (or during) business hours to a controlled group
- .2 a Security Service audit has been conducted that has resulted in a specific recommendation based on (crime history and other criteria) to deploy building access control system
- .3 building occupants have made a request for building proximity card access re: access control during off business hours
- .4 the necessary resources are in place to address the installation of access control system
- .5 Building access control during off business hours cannot be reasonably accommodated through manual intervention (physically locking exterior doors) by Security Services staff, Custodial Services staff or other university staff
- .6 Building requirement for lockdown

.2 Building proximity card access system that are designed to limit access to a specific floor, suite, room or series of rooms shall be deployed when:

- .1 The number of suite, floor, room or lab potential users is large enough to warrant the use of an automated access control system such as a proximity card access system
- .2 A proximity card access system provides improved control over specific areas of a building than the issuance and management of manual keys to a number of building occupants
- .3 Where it is necessary to limit access to a specific floor, area, suite or room(s) of a building to specific community members

- .4 Where it is necessary to limit access to a specific floor, area, suite or room(s) of a building to specific community members over a specific time frame (i.e. access to undergrad students to a laboratory for a single term for a specific course)
- .5 Where it is deemed desirable to be able to report on building access
- .6 Card access system shall be designed to provide access control to campus buildings without the need to manually lock and unlock doors. Card access shall provide access control to both building perimeter doors as well as interior suite, lab and other high security areas.
- .7 Card Access system shall permit reporting of access gained into any controlled area
- .8 Card access system employed by York University uses a decentralized card access security solution delivered by ProWatch security software manufactured by Honeywell.
- .9 The card access system shall be a completely operational ProWatch (Honeywell) brand system with control panel and subpanels compatible with the exiting Card Access System managed by York University's Security Services.
- .10 The building control panel employed shall be capable of full operation of the building or area in a mode involving loss of communications with the system server located in Security Control (York University Security Services). Card Reader multiplex control panels shall be located in the building Information Technology (IT) room(s) as require and indicated. Provisions shall be included to receive a signal from the existing fire alarm panel in the area to lock or unlock any necessary doors or other equipment in accordance with the life safety code.

### 1.3 Related York University Standards

- .1 Steel doors and frames Section 08 11 00
- .2 Door Finishing Hardware Section 08 71 00
- .3 Wood doors and frames Section 08 14 00
- .4 York University Telecom Standard, University Information Technology (UIT)

### 1.4 References

All installed equipment must meet most recent applicable CSA/ANSI standards

### 1.5 Power Requirements

- .1 The card access system shall operate on 12 volt VDC (delivered via a 120 VAC power supply) with ½" EC c/w 2#12 to 120 volt. Refer to door specifications for electric hinge. the active card access system shall be powered from the master multiplex control panel and must be compatible in voltage, current, logic levels, impedance, network with the control cabinet and with other elements of the system.
- .2 All power supplies shall supply an output voltage of 12 volt DC as well as a 24 VDC which is required for some electric strikes and magnetic locks. Voltage measurements shall be made from the protected side of the circuit fuse while the system is fully operational.
- .3 All equipment shall be battery backed (alternate power source) for full operation for a minimum of two hours after loss of normal power. An alarm shall be generated at the security control console to indicate the loss of AC power and/or the loss of battery back up power to any system control panel. Fans shall be provided to all power supply cabinets and battery cabinets.

#### 1.6 Wire Supervision

- .1 All systems and circuits shall be supervised. Wiring shall be accomplished in such manner that tamper wiring is continuously supervised. An alarm shall occur if any system wiring is cut or shorted to the other wires in the system and if the system devices are tampered with. The system shall detect tampering on a line and annunciate open and short conditions even if the device has been shunted (disarmed)
- .2 End of line resistors are to be installed at the field device not in the panel

#### 1.7 Tamper Protection

- .1 Detectors and sensors, the panel containing the multiplex control, signal transmission equipment and lines and auxiliary devices shall be so designed, constructed and installed as to resist attack and to minimize vulnerability to countermeasures. The system shall be so designed so that it will be difficult to "jumper out" or by-pass sections, loops or devices of the system.
- .2 All electronic components and points-of-connection shall be contained within a metal panel suitable for wall mounting. Panel

doors shall have locks, keyed to match other portions of the system already in use. All panel doors shall be protected by a tamper switch that will indicate an alarm at Public Safety.

- .3 Devices that are mounted on the exterior of a building where these may be accessible to the public will use security screws (tamper proof screws)

#### 1.8 Warranty (Standard Warranty and Extended Warranty)

- .1 Provide warranty on both product and installation for a period of one year from the date of system acceptance in writing from York University.

#### 1.9 Submittals

- .1 Shop drawings and equipment cut sheets indicating the complete system design, and all components shall be submitted as a package for approval prior to release of order or installation. As a minimum the shop drawings shall include a floor plan of the installation area, a wiring diagram indicating all components connected and the number type and size of the conductors between each component. Cut sheets of each piece of equipment shall be included in the shop drawing submittal package.
- .2 Three hard copies and one set of electronic files of the "as built" record drawings shall be provided to the University upon completion of the work. The drawings shall reflect the final "as built" arrangement and configuration of the system. They shall be accompanied by illustrated technical supporting literature on all equipment comprising the installation including operating and maintenance instructions for all components.
- .3 As built drawings and wiring diagrams shall be produced by AutoCad version 2010 (earlier version such 2008, 2009 are also acceptable) and supplied to York University's Planning & Architecture Design Services, Campus Services and Business Operations on disk.
- .4 Shop drawing to include a complete materials list with manufacturer, style, model and quantity.

#### 1.10 Qualifications (P.Q.):

- .1 The installer of electronic hardware must be a firm with at least 5 years experience with these types of products, have manufacturers'

references and a good knowledge of the products specified.

## 2.0 PRODUCTS

### 2.1 Acceptable Products:

Door strikes: Von Duprin, RCI, or HES door strikes shall be used.  
HES model 1006 are not to be used on any door that will be placed on an unlock schedule.

Acceptable products: PW 6000 control boards (Honeywell)

Card readers: OminProx by Honeywell series OP10 Mini-mullion, OP30 mullion, OP40 US Gang box, OP90 Vandal Resistant (HID Compatible),

Maglocks: RCI and Asterix

Door monitors switches: Concealed whenever possible

Motion sensors: Trex or compatible

Request to exit buttons:

Annunciators (Alarms): Best fit for application. We do not use them much and generally they are in the PIS

Latch bolt monitors

## 3.0 EXECUTION

### 3.1 Door level hardware specifications

### 3.2 Electric Card Access locks and related hardware

### 3.3 Door level hardware specifications

#### 3.3.1 For Single Door installations:

- .1 Minimum 4" X 4" junction box C/W removable cover mounted in ceiling space above card reader door on secure side of door.
- .2 Minimum  $\frac{3}{4}$ " EC from 4"x4" junction box above door to existing, or new access control multiplexer panel. Card reader multiplexer panel to be located in I.T. room or Electrical room in associated building.
- .3 Minimum  $\frac{1}{2}$ " EC from 4"x4" junction box above door down to card reader, door strike, egress motion detector and door contact. Min. of  $\frac{1}{2}$ " EC to be run to ADO interface if required.

- .4 Card reader, egress motion detector, door strike and door contact to be supplied and installed by York University Security systems certified integrator. Card reader to be installed either on metal doorframe or next to frame on wall (site determined).
- .5 All conduits shall include pull strings from door device's back to panel location. Conduits must be included as part of new building project design. For existing buildings renovations, conduits to be provided by card access system integrator.
- .6 Card access system shall adopt 12 (or 24 VDC depending on specific applications) volt DC electric strike.
- .7 Each individual door equipped with a card access system must be tied in to the campus access control server.
- .8 Door contact shall be installed for each leaf and shall be provided by card access system provider.
- .9 Minimum of ½ " EC with pull string to penetrate in frame from junction box to door contact on door frame.

### 3.3.2 For double doors installations:

- .1 all minimum requirements as per single door installation as above and,
- .2 Provide 1/2" EC c/w 2 #16 to 120 volt power supply. Refer to door specification for electric hinge.
- .3 Electric transfer hinge(s) to be provided where required.
- .4 Where approved by York University, FT-6 fire rated cable can be installed in place of conduit. FT6 fire rated cable to run in open air from each door device i.e., card reader, door strike, door contact and egress motion detector back to the corresponding multiplexer location. FT6 fire rated cable to be installed (where approved by York University) above drop ceilings or drywall suspended ceiling and tie – rapped. Where there is no drop ceiling or drywall ceiling (no return air plenum ceiling) the installation of "non" fire rated cable (not on conduit) is acceptable. Every attempt shall be made to secure cable high enough to prevent damage due to possible vandalism. York University to approve the use of

open cable (not installed in conduit) prior to the start of any installation. Open cable installed in York University cable trays is acceptable if approved by York University. Cable to be supplied and installed by access control system provider.

- .5 FT6 fire rated cable to be installed for card access application shall NOT be coloured blue as this colour is used by York University infrastructure network cabling.

### 3.4 Minimum requirements for all installations:

- .1 Network drops and I.P. address shall be provided by York University (UIT) University Information Technology department at multiplexer panel location(s).
- .2 110 volt .AC power to be provided at multiplexer panel location(s).
- .3 Refer to door detail for device locations, please refer to Appendix 1
- .4 Proximity card reader are 125 kHz frequency, card reader housing shall be coloured black or gray constructed of rugged polycarbonate material rated for both indoor and outdoor use.
- .5 Intelligent controller to control all door devices. Commonly referred to as the panel or controller. This hardware is located at the building (usually the IT room) where the doors that are controlled by individual access card readers are located. System architecture is therefore modular providing flexibility and expansion capability.
- .6 Local access control controllers are networked to Security Control access control server
- .7 Each controller (located at the building) contains a small resident memory that is fixed and not adjustable that allows local designated staff to control access to specific doors

### 3.5 Coordination

#### Installation (University Standard)

- .1 Magnetic locks – shall be mounted per the manufacturers'



instructions on the top of the door with required permits

- .2 Card Readers – shall be mounted per the manufacturers' instructions on the entrance side of the door as close as possible to the door handle pull. In locations where the entrance door is equipped with an automatic door opener (ADO) the card reader should be mounted as close as possible to the ADO.
- .3 Monitor switch (door contact) – shall be mounted per manufacturers' instructions on the top of the door.
- .4 Electric strike – shall be mounted per the manufacturers' instructions at the door latch. Door frames shall be reinforced for the strike mounting screw threads.
- .5 Motion sensors (where included as part of the installation) – shall be mounted as per the manufacturers' instructions on the exit side of the door above the door; for area security, they shall be mounted as necessary to cover the identified area.
- .6 Request to exit button (where included as part of the installation) – shall be mounted as per the manufacturers' instructions on the exit side of the door closest to the latch.
- .7 Annunciators (alarms) – shall be mounted as per the manufacturers' instructions

### **3.6 System Testing Verification and Adjustments**

- .1 Final system acceptance tests shall be performed in the presence of representatives from York University Security Services, including at a minimum the Manager Security Operations, York University Security Services, the Coordinator, CCTV & Door Access Technology and representatives from University Information Technology.
- .2 Acceptance testing and training shall include discussion on the system design with the building's Card Access Coordinators, testing of all individual components, programming of the system software and acceptance of the installation.
- .3 As a part of the final System Acceptance the vendor responsible for the Proximity Card Access system installation and commissioning is responsible for providing the University project representative and the Coordinator, CCTV & Door Access Technology, Security Services with system passwords, security codes, physical keys, and security screwdrivers (if applicable) as used in the system

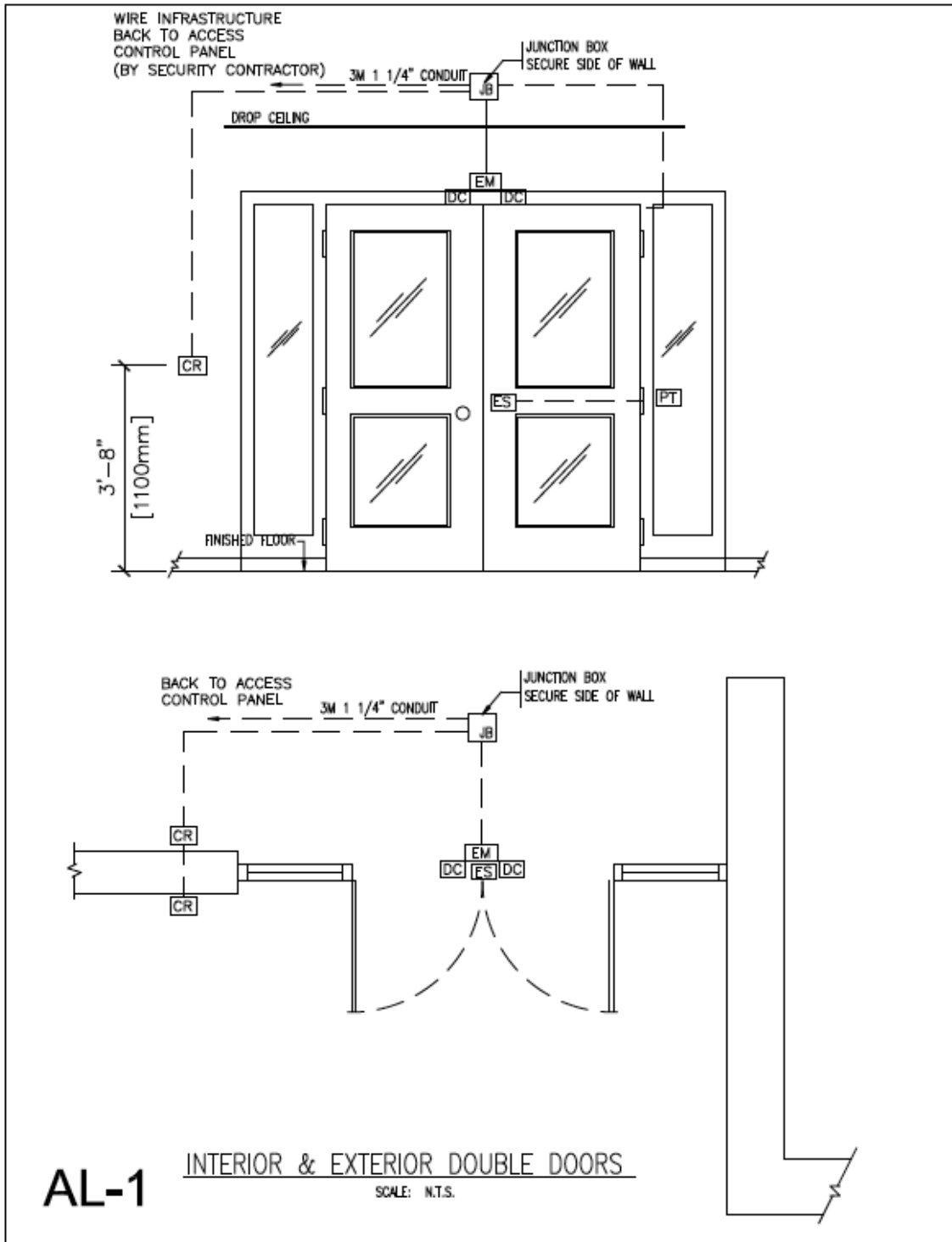
installation.

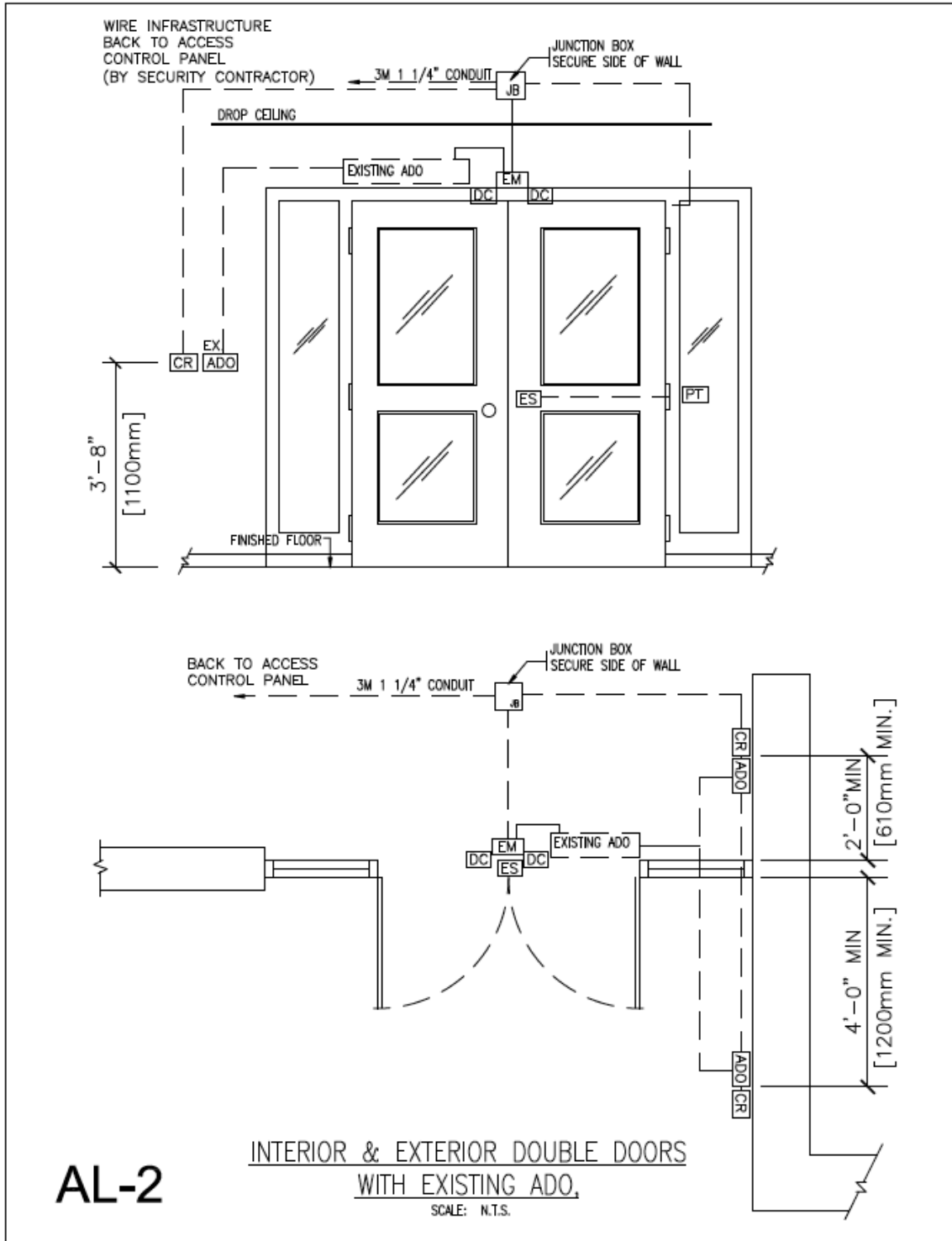
### 3.7 Building Perimeter Doors

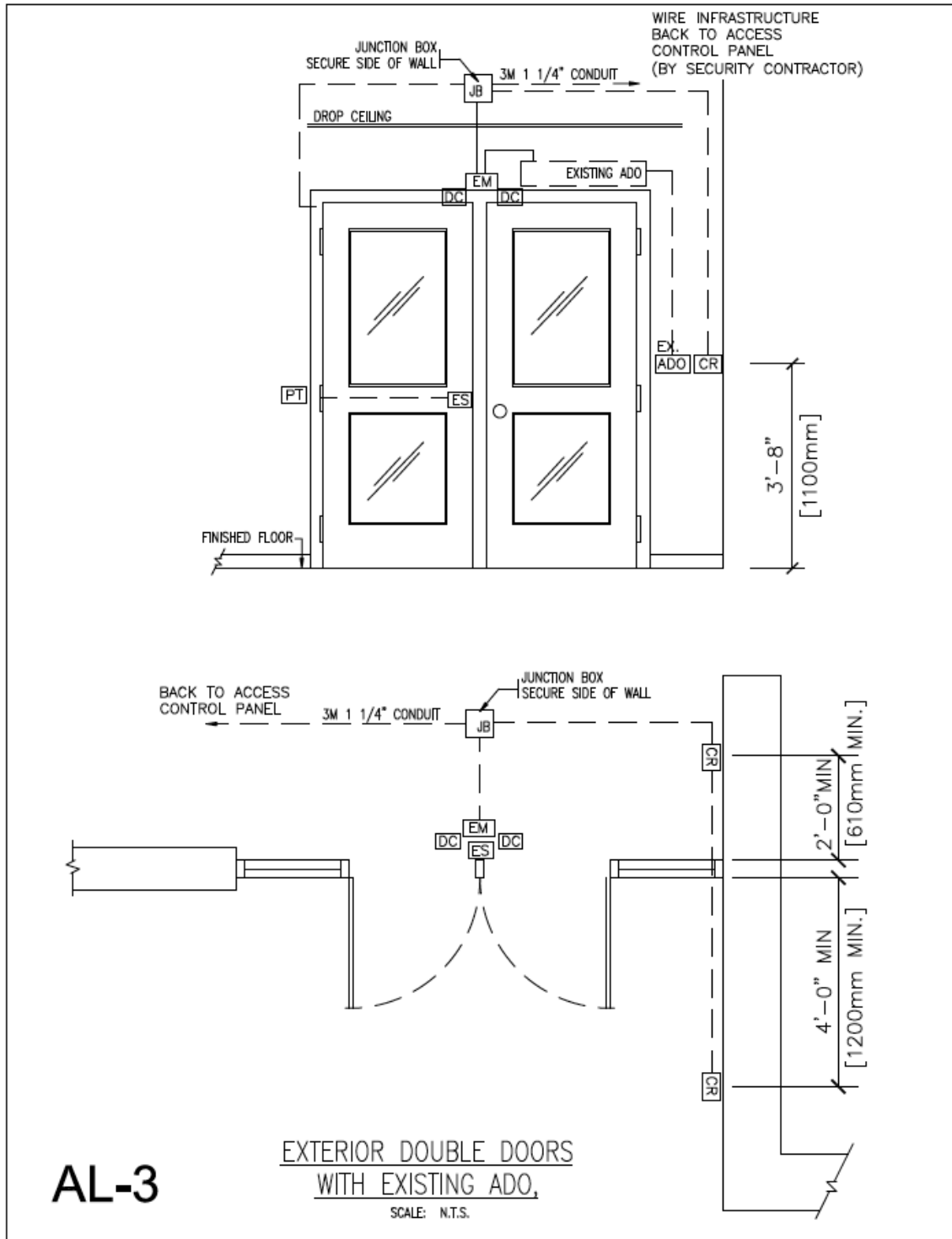
- .1 All building perimeter doors regardless of use shall have a door contact and latch bolt monitor installed. These devices will be connected in series and report individual door status to Pro-Watch.
- .2 Door status to be reported are door held open, and door forced open.
- .3 Doors will be programmed to be able to be locked down remotely from the York Security Control room

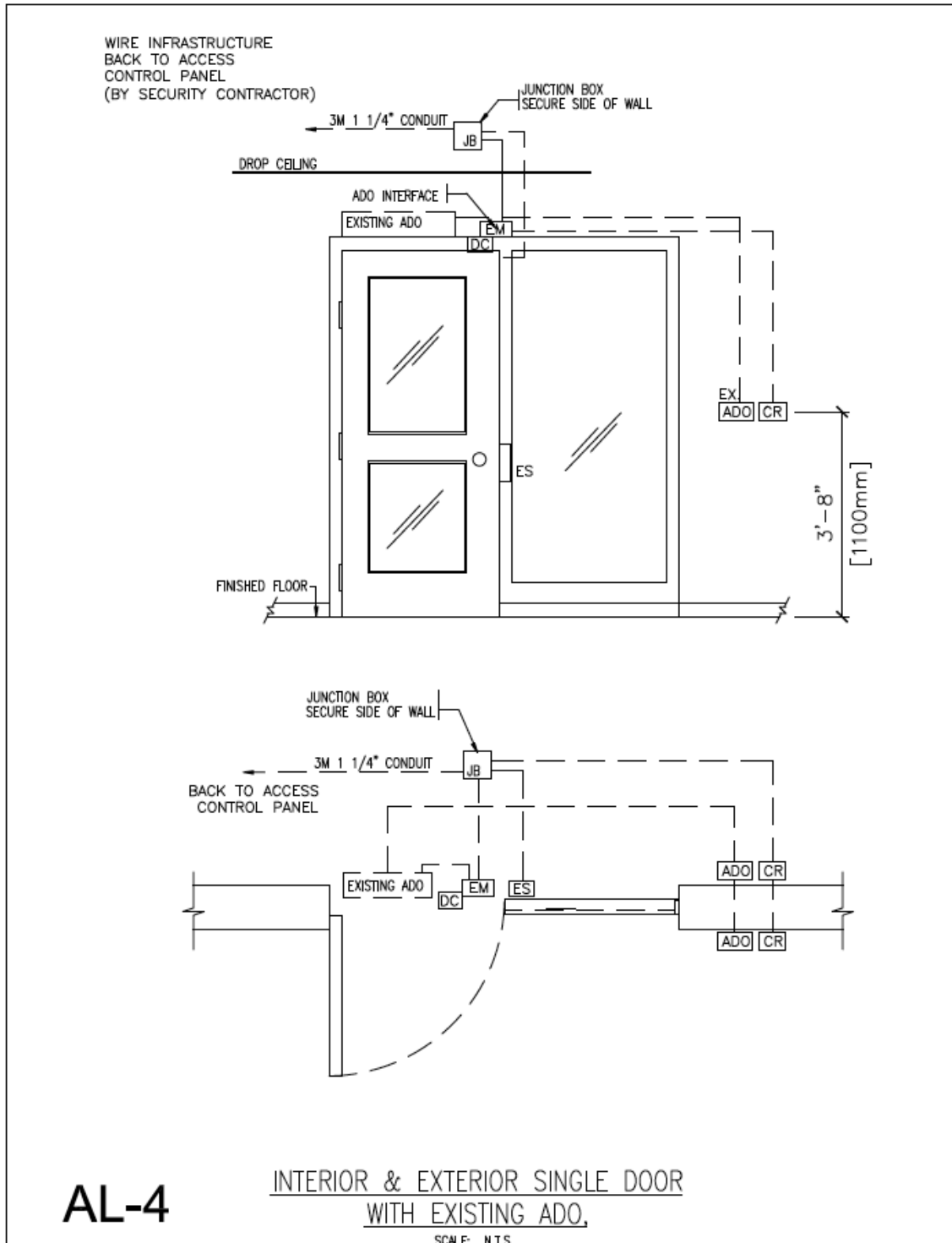
### 3.8 Typical Installations Drawings

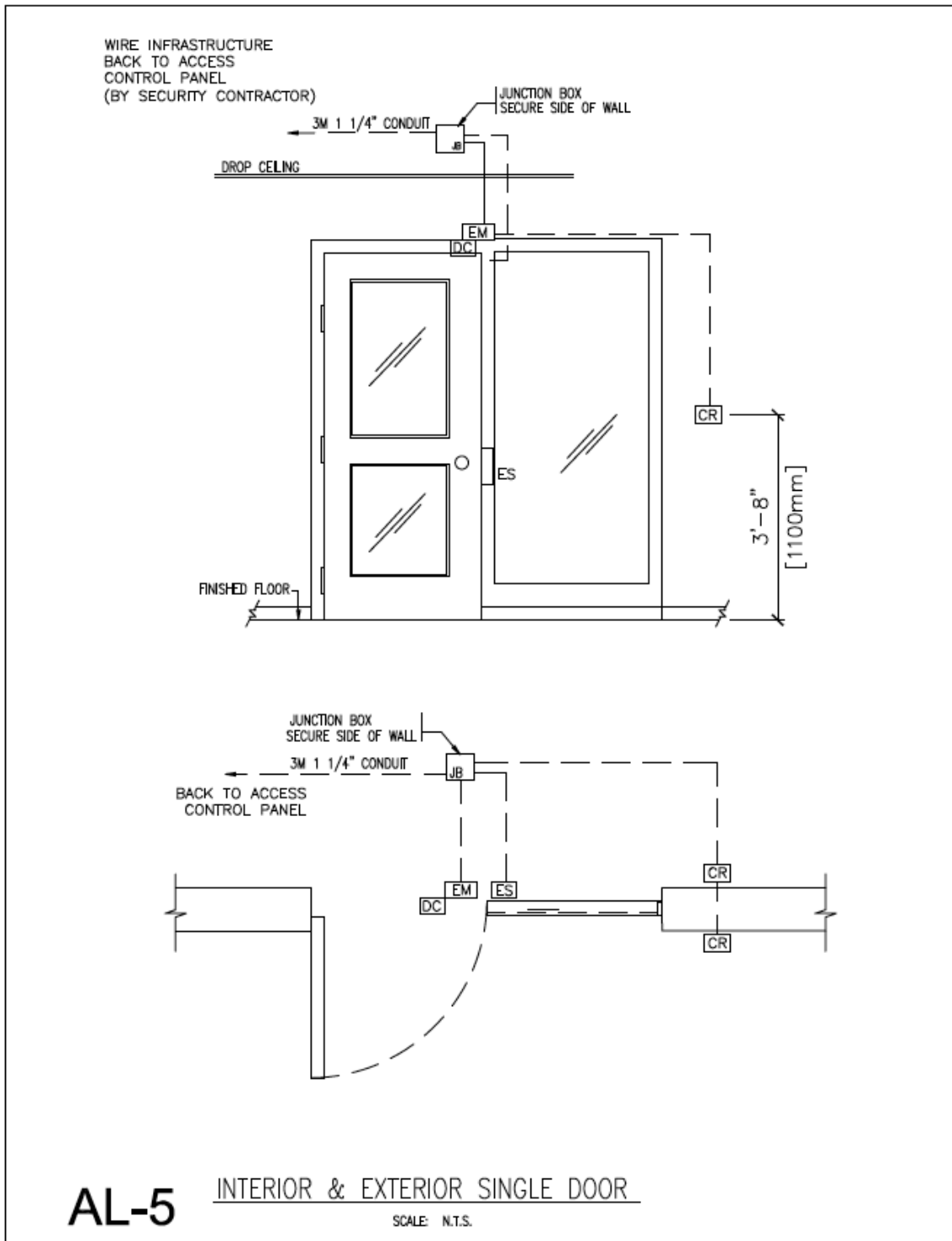
- .1 For typical installation of access control devices on exterior and interior doors, single and double door, please follow the installation details and specifications outlined in this standard and the drawings contained herein, also consult with York University project representative for exceptions or deviations as necessary.
  - .1 Drawing AL-1 Interior and Exterior Double Door typical access control device installation for aluminium doors
  - .2 Drawing AL-2 Interior and Exterior Double Doors with existing ADO typical access control device installation for aluminium doors
  - .3 Drawing AL-3 Exterior Double Doors with Existing ADO typical access control device installation for aluminium doors
  - .4 Drawing AL-4 Interior and Exterior Single Door with Existing ADO typical access control device installation for aluminium doors
  - .5 Drawing AL-5 Interior and Exterior Single Door typical access control device installation for aluminium doors
  - .6 Drawing AL-Notes on the drawings for aluminium doors
  - .7 Drawing HM-1 Interior and Exterior Double Doors typical access control device installation for steel doors
  - .8 Drawing HM-2 Interior and Exterior Double Doors with Existing ADO typical access control device installation for steel doors
  - .9 Drawing HM-3 Exterior Double Doors with Existing ADO
  - .10 Drawing HM-4 Interior & Exterior Single Door with Existing ADO typical access control device installation for steel doors
  - .11 Drawing HM-5 Interior & Exterior Single Door typical access control device installation for steel doors
  - .12 Drawing HM-6 Notes on drawings for access control device installation for steel doors





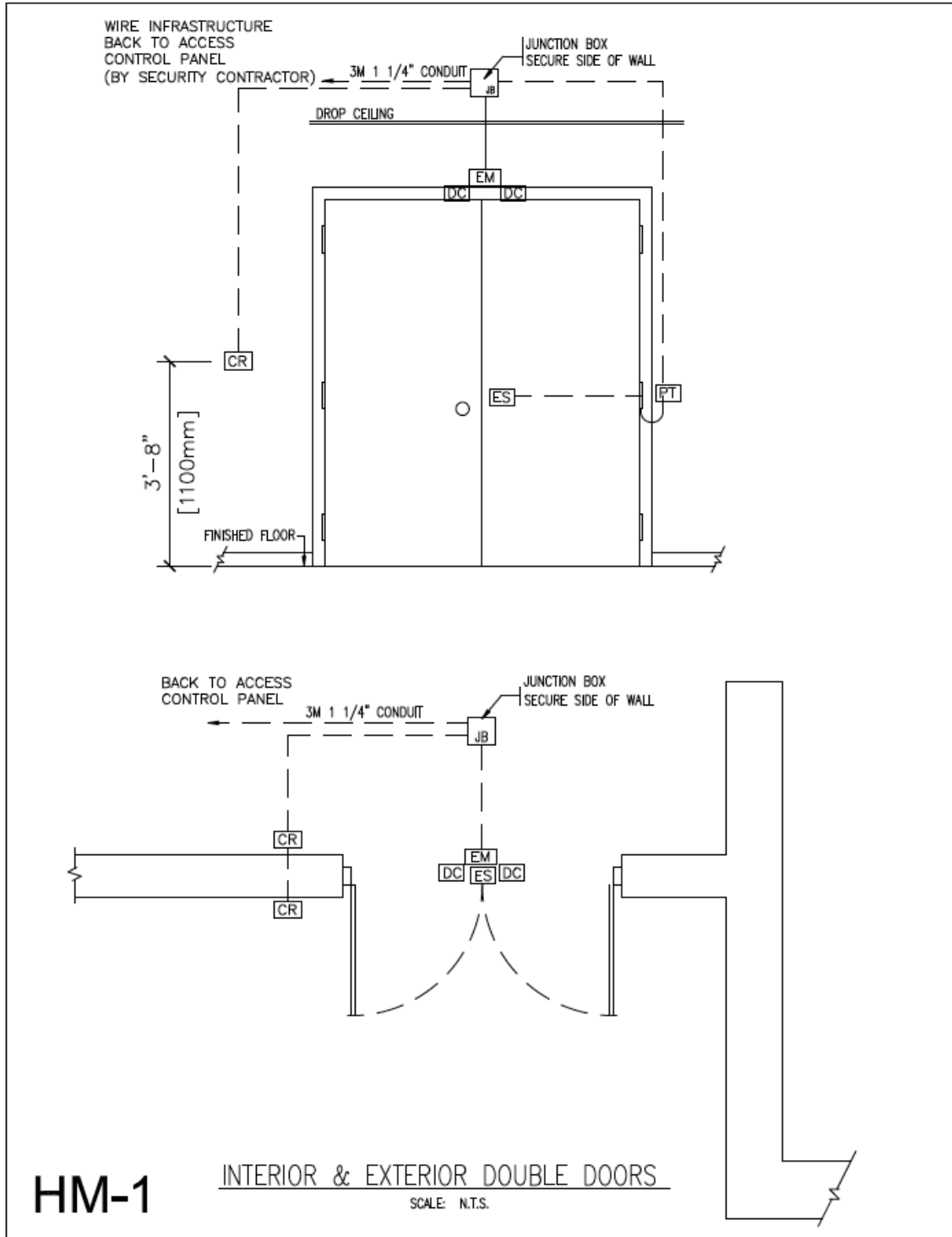


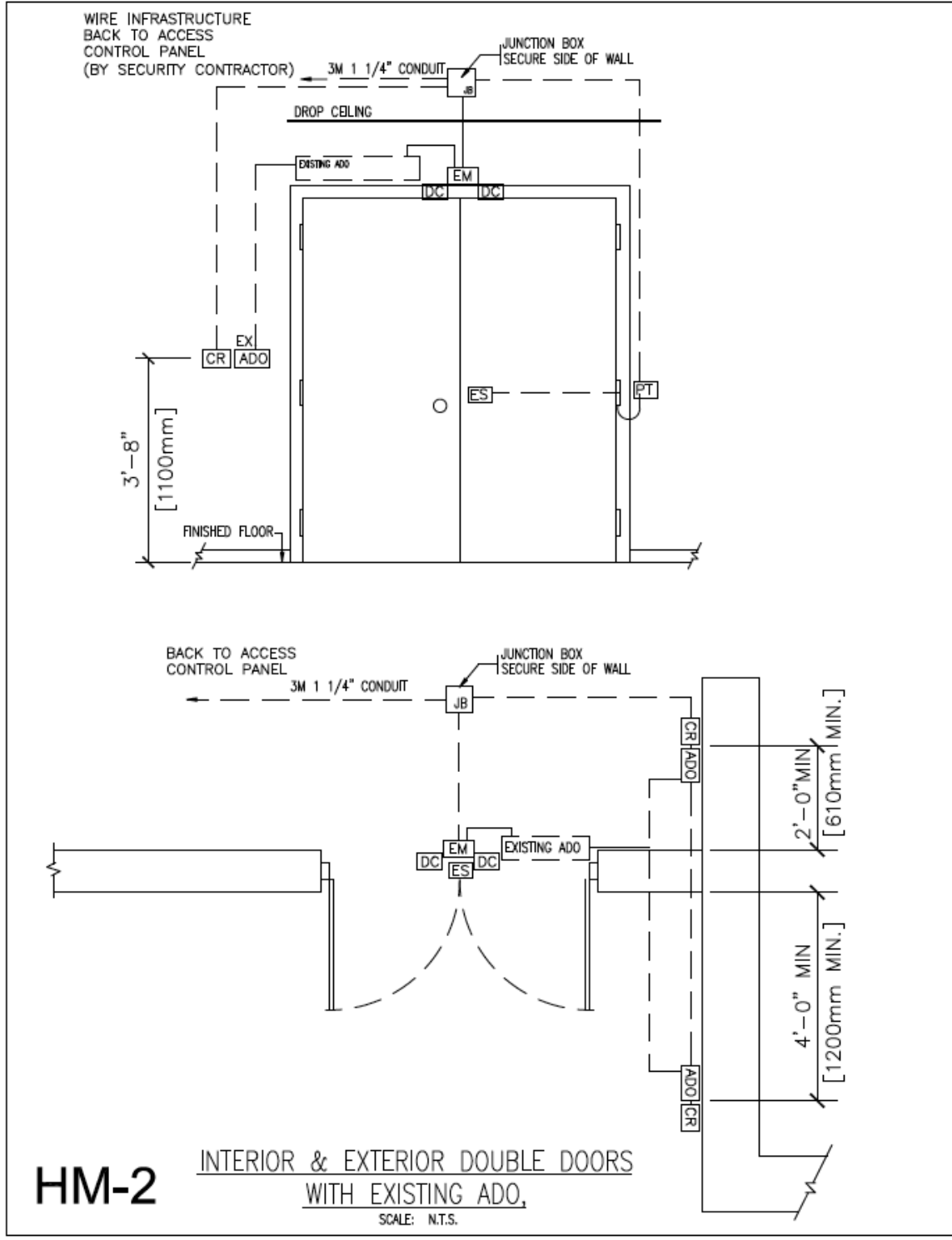


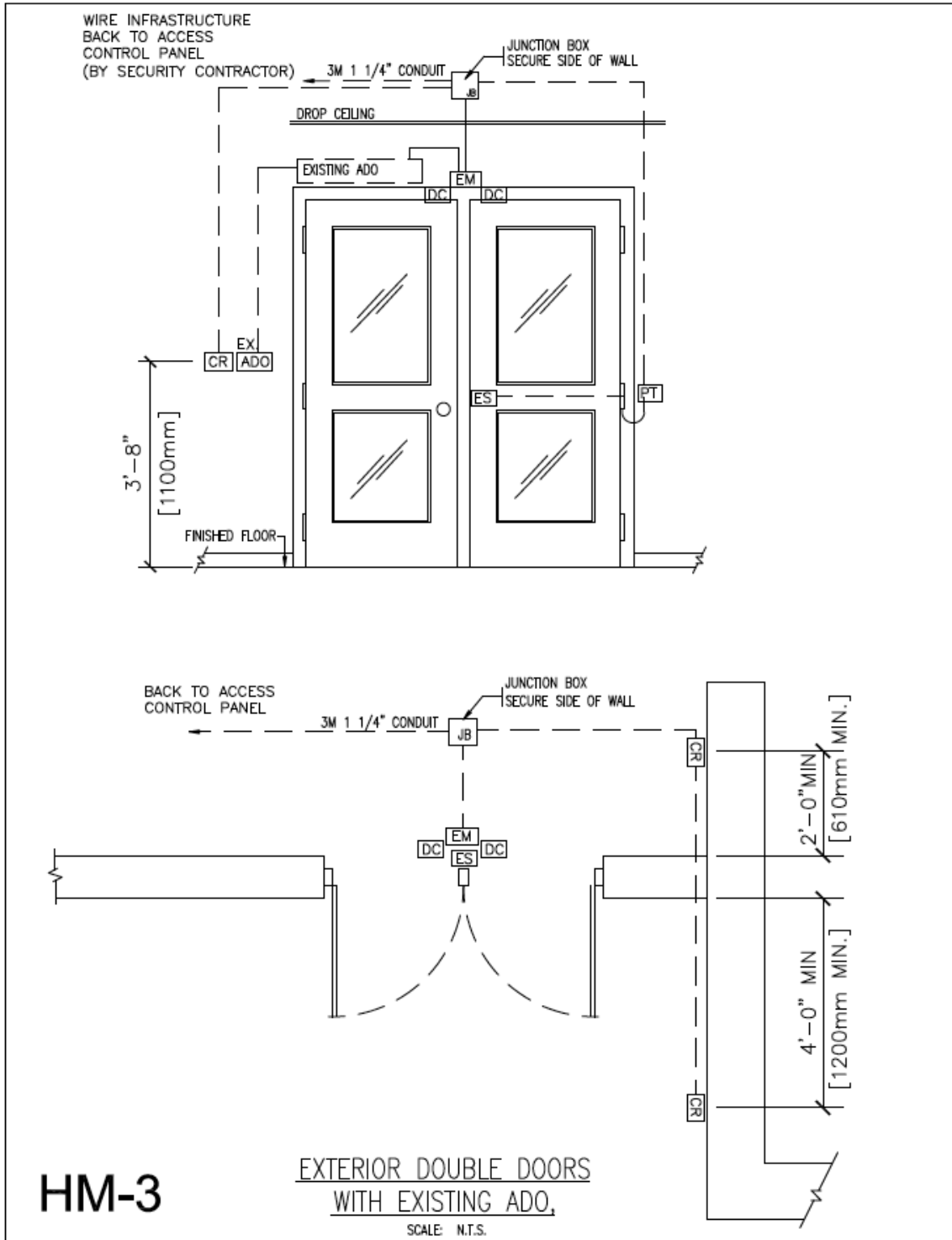


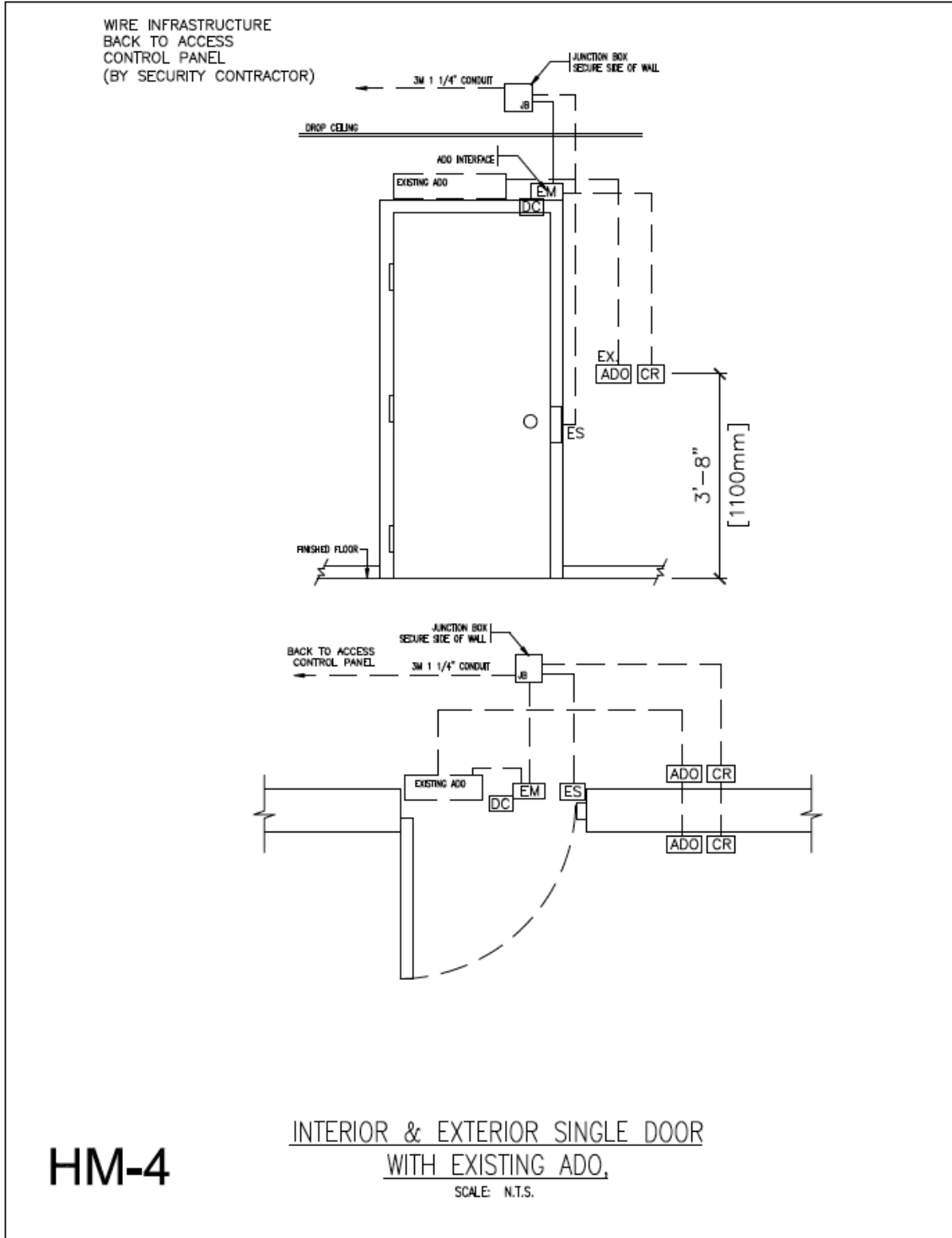
DEVICE	PRODUCT	NOTES:
<div style="border: 1px solid black; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center; margin: 5px;">JB</div>	D6x6x4 ELECTRIC UTILITY BOX AND COVER PLATE. D6x6x4 SCREW NEMA/EMMAC1 PULL BOX. GALVANIZED STEEL: 6 In. (152mm) WIDE: NEMA/EMMAC 1 : 4 In. (102mm) DEEP, D-BOX SCREW COVER JUNCTION BOX.	1. CONTRACTOR TO PROVIDE PULL STRING IN ALL CONDUIT.  2. ALL SECURITY DEVICES TO BE PROVIDED BY OTHERS
<div style="border: 1px solid black; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center; margin: 5px;">CR</div>	CARD READER INTERIOR/EXTERIOR WPB33BR PASS & SEYMOUR WEATHERPROOF SINGLE GANG BOX, BRONZE FOR BRICK SURFACE INTERIOR/EXTERIOR WPB34 PASS & SEYMOUR WEATHERPROOF SINGLE GANG BOX, GRAY FOR CONCRETE SURFACE	3. PLACEMENT SHOULD BE IN RELATION TO ADO LOCATION, IF ADO EXISTS ON DOOR.  4. CARD READER TO BE MOUNTED ACCORDING TO OAED STANDARDS. 1100mm A.F.F. (3'-8") AND 1200mm (4'-0") Min. FROM OUTSIDE OF DOOR WITH 610mm (2'-0") Min. ON INSIDE OF DOOR.
<div style="border: 1px solid black; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center; margin: 5px;">EM</div>	EGRESS MOTION INTERIOR/EXTERIOR WPB33BR PASS & SEYMOUR WEATHERPROOF SINGLE GANG BOX, BRONZE FOR BRICK SURFACE INTERIOR/EXTERIOR WPB34 PASS & SEYMOUR WEATHERPROOF SINGLE GANG BOX, GRAY FOR CONCRETE SURFACE	
<div style="border: 1px solid black; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center; margin: 5px;">DC</div>	DOOR CONTACT	5. SECURITY CONTRACTOR TO PULL ALL LOW VOLTAGE WIRE THROUGH ALUMINUM FRAME AS REQUIRED.
<div style="border: 1px solid black; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center; margin: 5px;">PT</div>	POWER TRANS HINGE MODEL# -----	
<div style="border: 1px solid black; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center; margin: 5px;">ES</div>	ELECTRIC STRIKE SUPPLY & INSTALL BY SECURITY CONTRACTOR	
EX. <div style="border: 1px solid black; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center; margin: 5px;">ADO</div>	EXISTING AUTOMATIC DOOR OPENER	

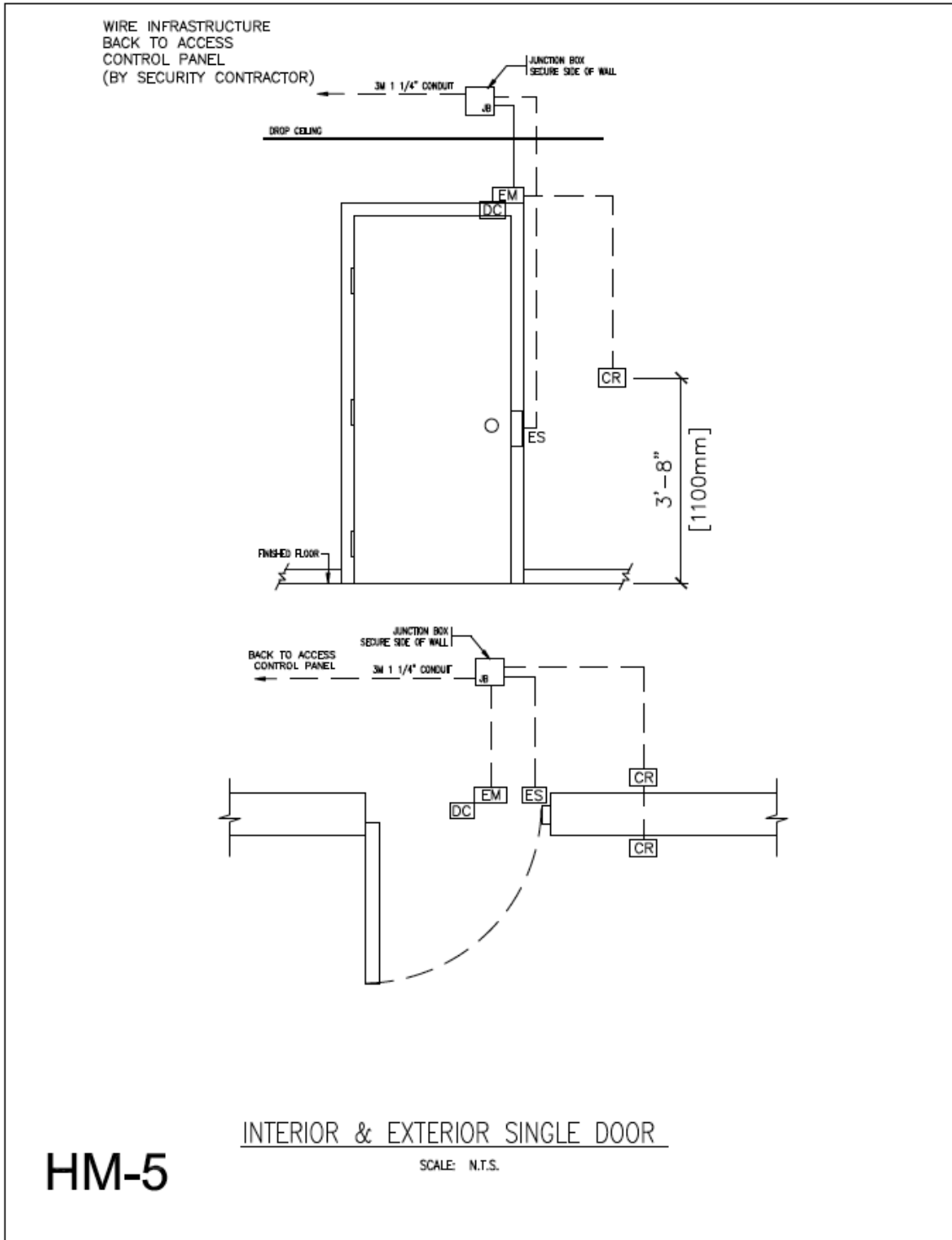












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<div style="border: 1px solid black; width: 20px; height: 20px; display: flex; align-items: center; justify-content: center; margin: 5px;">PT</div>	<del>EXISTING TRANSFORMER DOOR OPENER</del>	
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EX. <div style="border: 1px solid black; width: 20px; height: 20px; display: flex; align-items: center; justify-content: center; margin: 5px;">ADO</div>		

**End of Section**