DALHOUSIE UNIVERSITY

APPENDIX A - DOOR ACCESS CONTROL DETAILS

LEGEND	CABLE DESCRIPTION
1	BELDEN #8461 (2/#18AWG, JACKETED) OR EQUIVALENT.
2	BELDEN #9418 (4/#18AWG, SHIELDED, JACKETED) OR EQUIVALENT.
3	CAT. 6 CABLE, WHITE JACKET
4	BELDEN #8446 (2/#18AWG & 4/#22AWG) OR EQUIVALENT.
5	BELDEN #9952 (2/#16AWG, JACKETED) OR EQUIVALENT.
6	PROVO #5706 (6/#22AWG, SHIELDED, JACKETED) OR EQUIVALENT.
7	PROVO #Z422NR-WH (4/#22AWG, JACKETED) OR EQUIVALENT.
8	BELDEN #9844 (LOW CAPACITANCE RS-485, 4/#24AWG, SHIELDED, JACKETED) OR EQUIVALENT.
BFDO	BARRIER FREE DOOR OPERATOR
DC	DOOR CONTACT
DH	DOOR HOLD OPEN DEVICE
EH	ELECTRIFIED HINGE
ES	ELECTRIC STRIKE
ELCK	ELECTRIFIED LOCKSET LEVER
ELR	ELECTRIC LATCH RETRACTION
HID	HID PROXIMITY READER (WITH PIN PAD WHERE REQUIRED)
IDH MAX	BEST IDH MAX LOCKSET
JB	JUNCTION BOX
RTE(EX)	REQUEST TO EXIT IN DOOR HARDWARE
RTE(IR)	INFRARED REQUEST TO EXIT MOTION SENSOR
PB	BARRIER FREE DOOR OPERATOR PUSH BUTTON
P/S	POWER SUPPLY
P/S(AC)	ACCESS CONTROL SYSTEM POWER SUPPLY

NOTES:

PROJECT:

ACCESS CONTROL AND SECURITY GUIDELINES

DRAWING:

C.P. #

W.O. #

PROJECT MANAGER:

SCALE:

DRAWN BY:

DATE: 10/12/2018

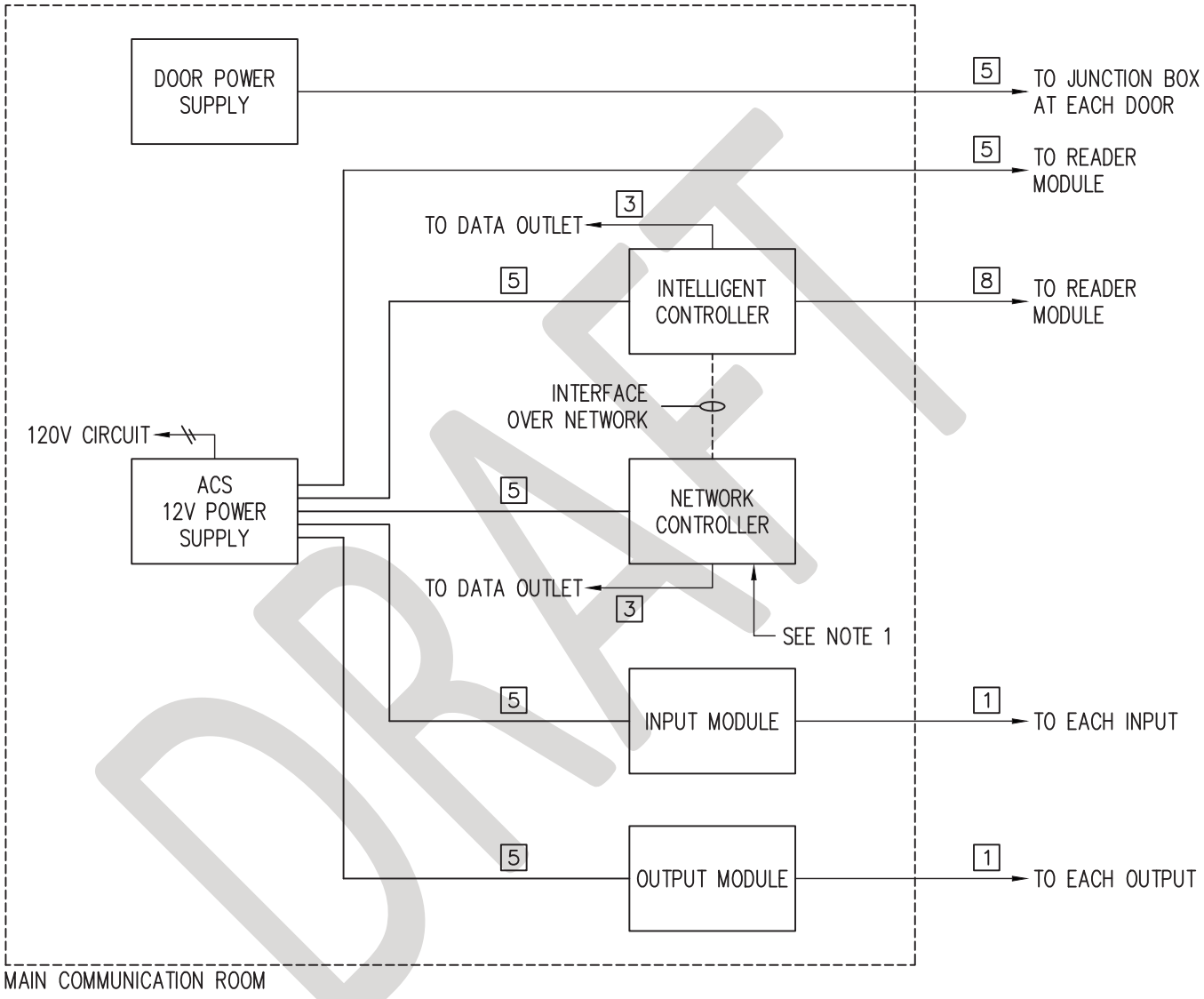
NOT FOR CONSTRUCTION

DALHOUSIE UNIVERSITY
Inspiring Minds

DAC-01

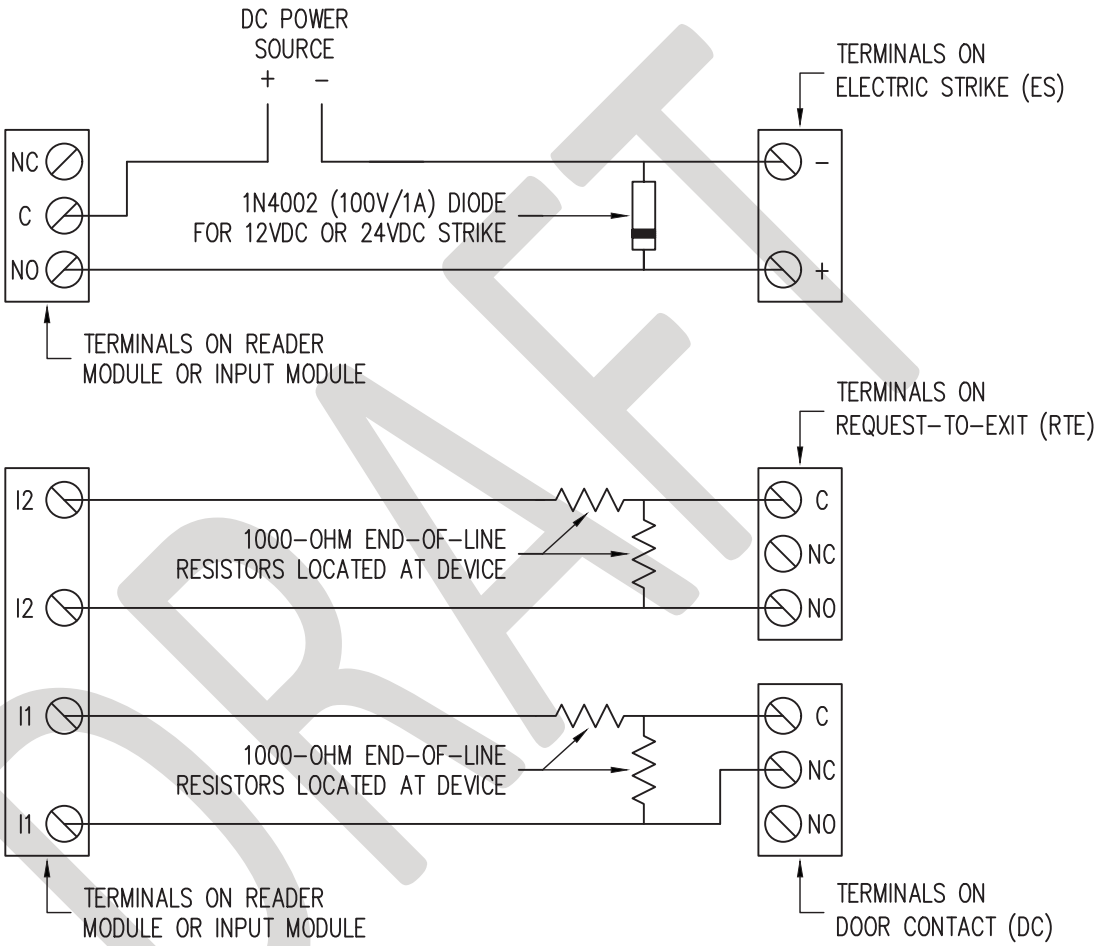
NOTES:

1. SUPPLIED AS REQUIRED FOR PROJECT, IN CONSULTATION WITH PROJECT MANAGER. LOCATE IN RACK OF FACILITY'S MAIN COMMUNICATIONS ROOM. PROGRAMMING BY OWNER.



TYPICAL DOOR ACCESS CONTROL RISER

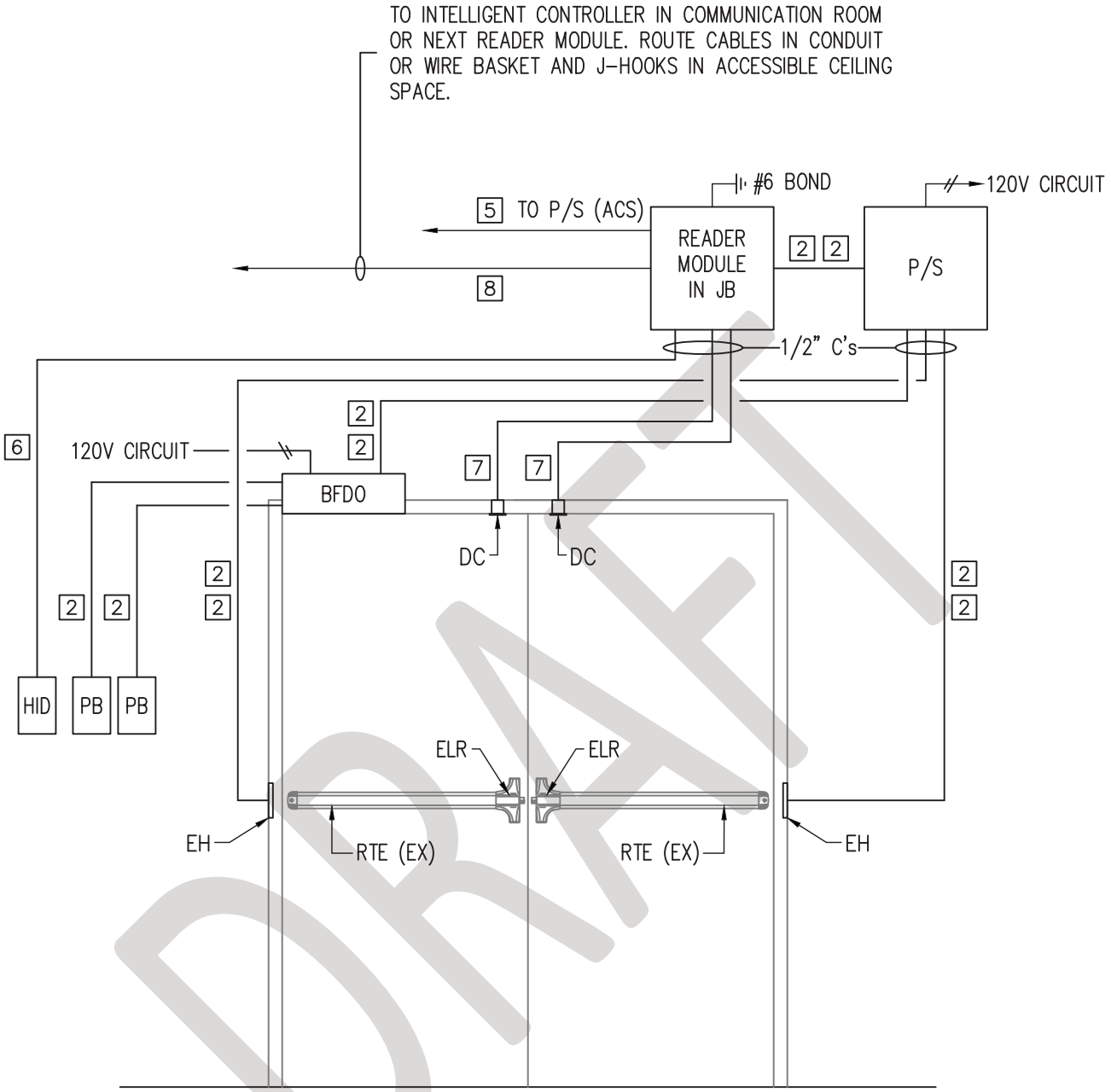
NOTES:	PROJECT: ACCESS CONTROL AND SECURITY GUIDELINES	C.P. #	DALHOUSIE UNIVERSITY Inspiring Minds
		W.O. #	
		PROJECT MANAGER:	
	DRAWING:	SCALE:	
		DRAWN BY:	DAC–02
		DATE: 10/12/2018	
		NOT FOR CONSTRUCTION	



WIRING REQUIREMENT FOR SUPERVISED DEVICES

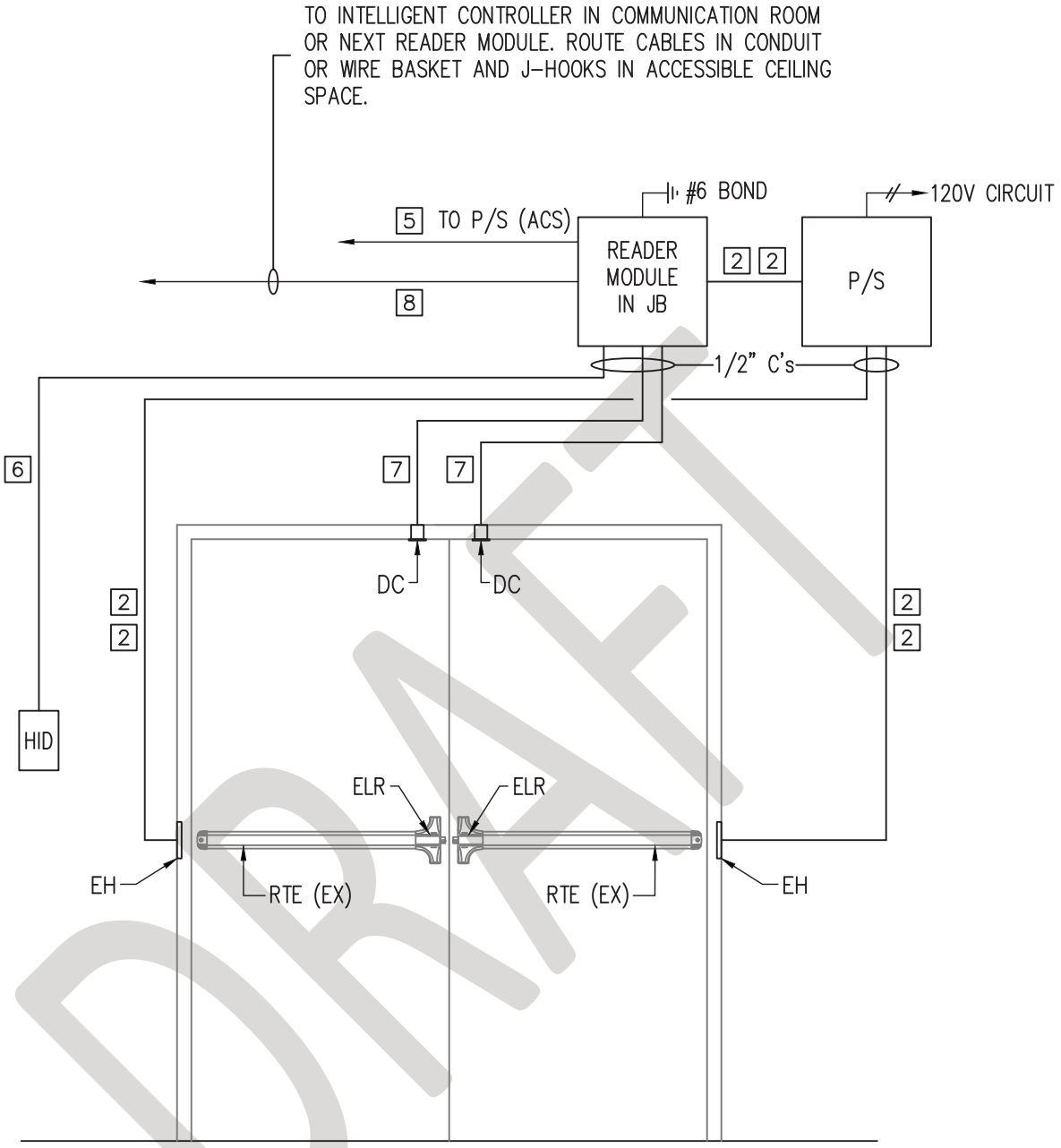
NOTES:	PROJECT: ACCESS CONTROL AND SECURITY GUIDELINES	C.P. #	DALHOUSIE UNIVERSITY *Inspiring Minds*
		W.O. #	
		PROJECT MANAGER:	
	DRAWING:	SCALE:	
		DRAWN BY:	DAC–03
		DATE: 10/12/2018	
		NOT FOR CONSTRUCTION	

P:\10–18–114 DAL SAC GUIDELINES\DOOR ACCESS CONTROL DETAILS.DWG



BARRIER FREE DOUBLE DOOR CARD ACCESS WITH ELR, RTE (EX) AND DC

NOTES:	PROJECT: ACCESS CONTROL AND SECURITY GUIDELINES	C.P. #	DALHOUSIE UNIVERSITY *Inspiring Minds*
		W.O. #	
		PROJECT MANAGER:	
	DRAWING:	SCALE:	DAC-04
		DRAWN BY:	
		DATE: 10/12/2018	
		NOT FOR CONSTRUCTION	



DOUBLE DOOR CARD ACCESS WITH ELR, RTE (EX) AND DC

NOTES:	PROJECT: ACCESS CONTROL AND SECURITY GUIDELINES	C.P. #	DALHOUSIE UNIVERSITY Inspiring Minds
		W.O. #	
		PROJECT MANAGER:	
	DRAWING:	SCALE:	
		DRAWN BY:	DAC-05
		DATE: 10/12/2018	
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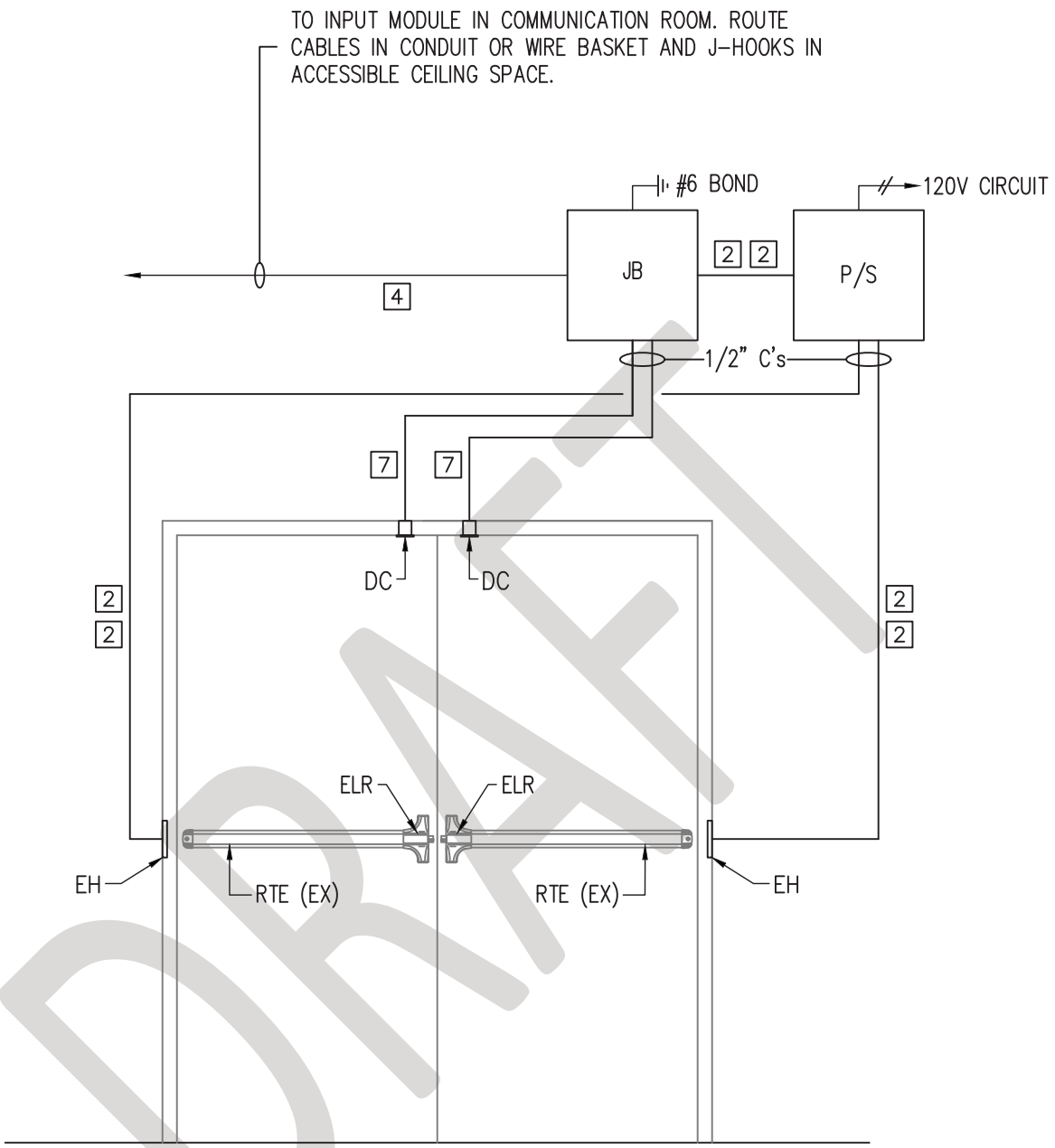
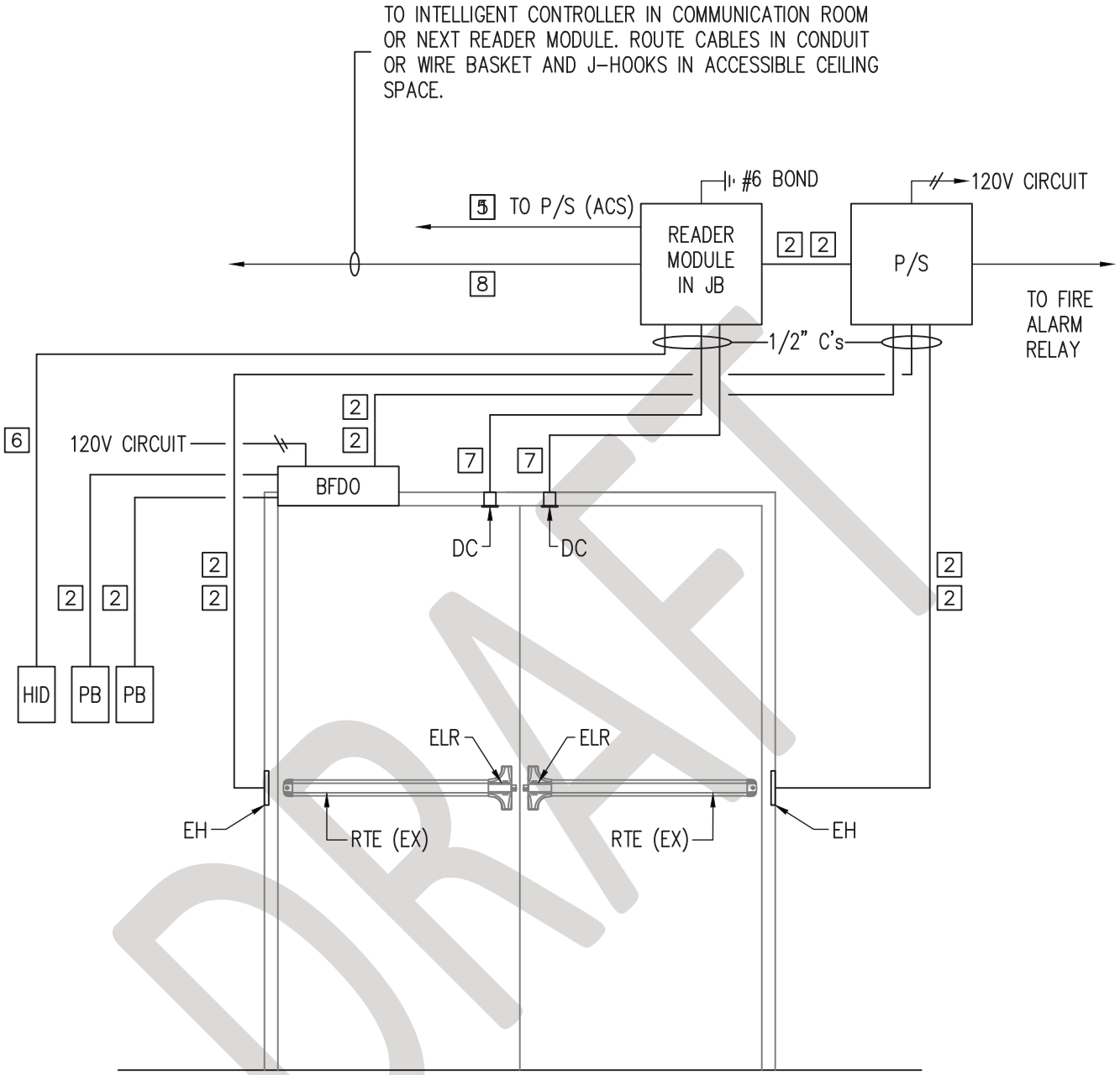


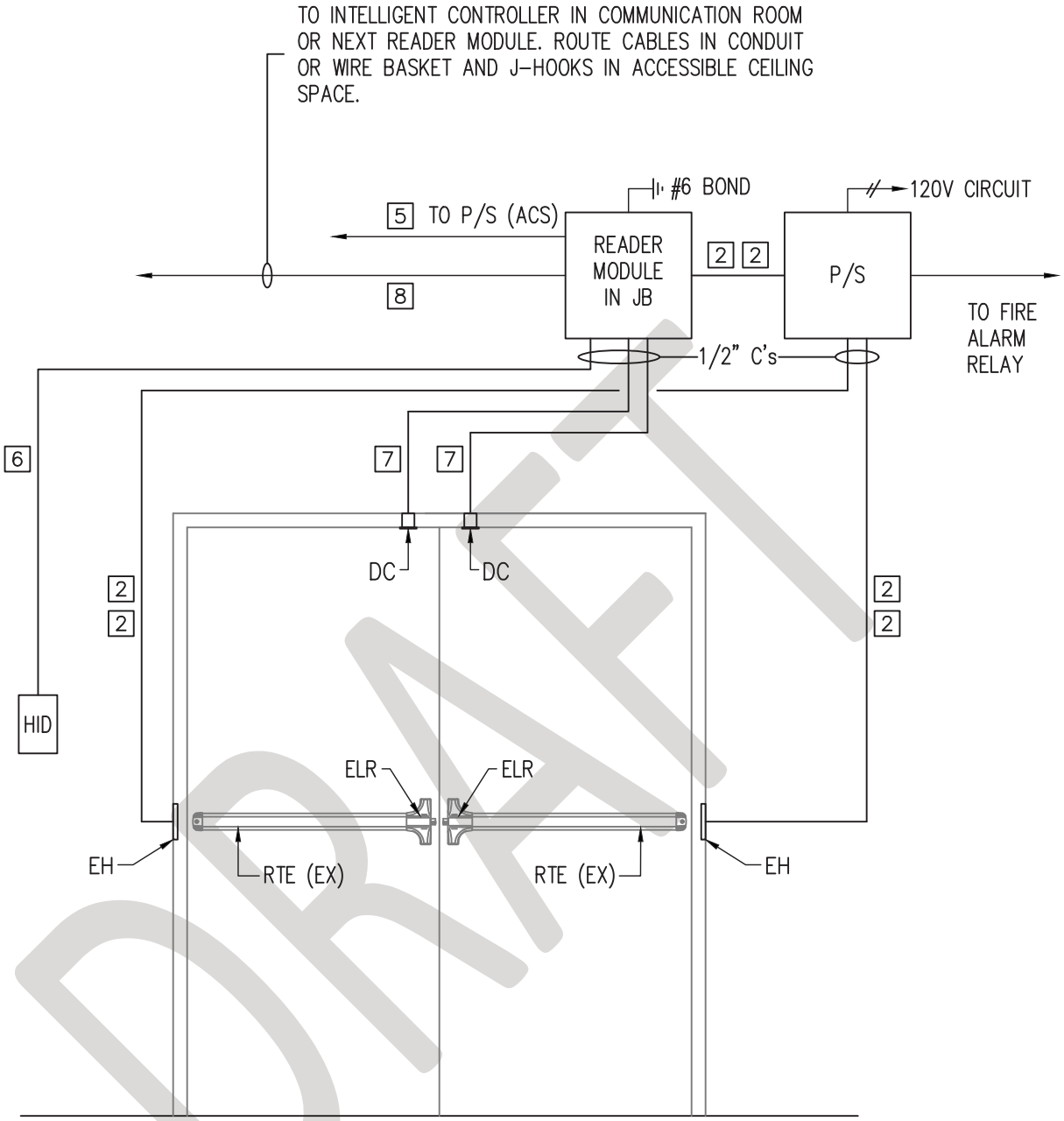
DOUBLE DOOR WITH ELR, RTE (EX) AND DC

NOTES:	PROJECT: ACCESS CONTROL AND SECURITY GUIDELINES	C.P. #	DALHOUSIE UNIVERSITY Inspiring Minds
		W.O. #	
		PROJECT MANAGER:	
		SCALE:	
	DRAWING:	DRAWN BY:	
		DATE: 10/12/2018	DAC-06
		NOT FOR CONSTRUCTION	



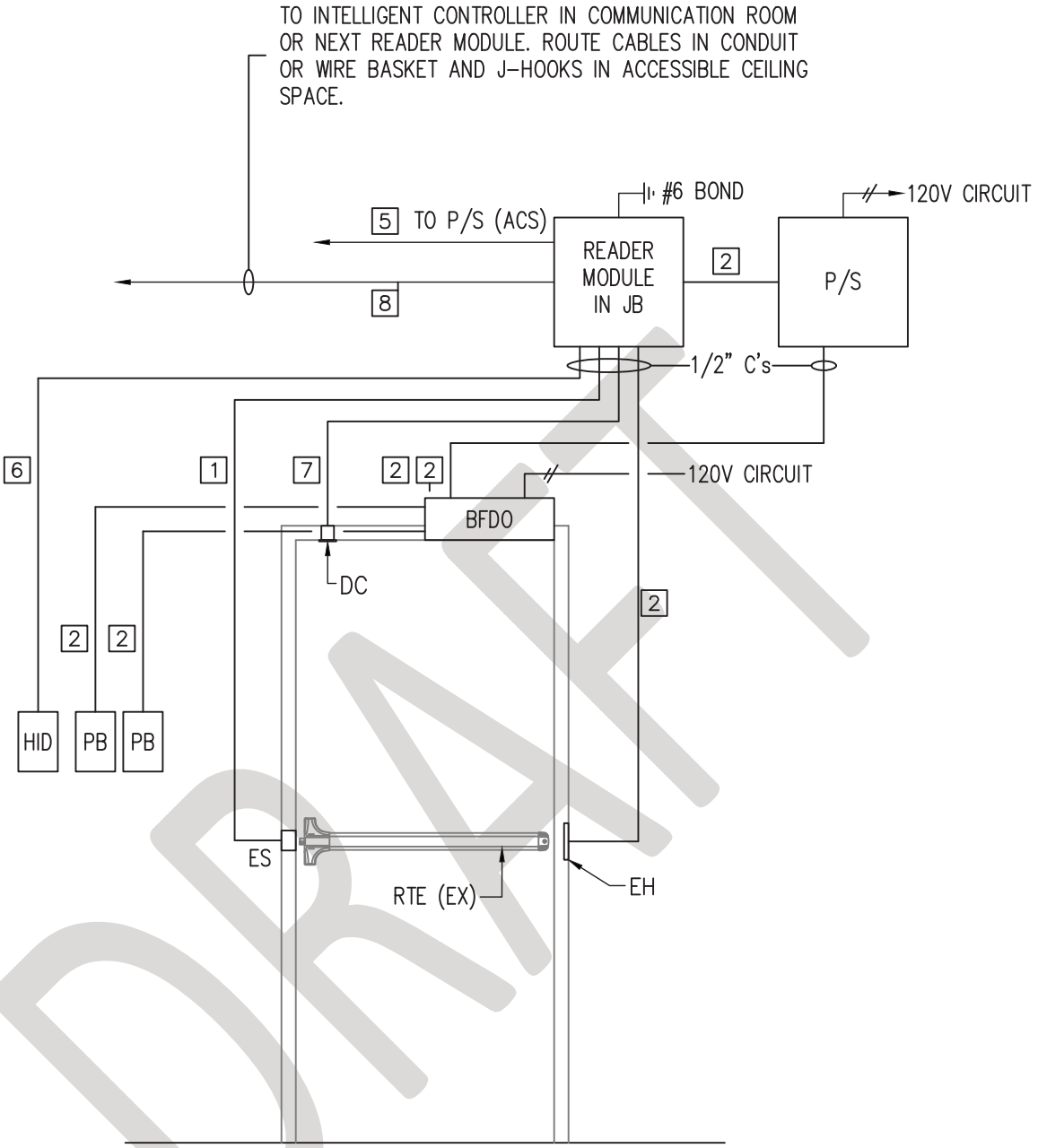
BARRIER FREE DOUBLE DOOR CARD ACCESS WITH ELR, RTE (EX) AND DC

NOTES:	PROJECT: ACCESS CONTROL AND SECURITY GUIDELINES	C.P. #	DALHOUSIE UNIVERSITY Inspiring Minds
		W.O. #	
		PROJECT MANAGER:	
	DRAWING:	SCALE:	
		DRAWN BY:	DAC-07
		DATE: 10/12/2018	
		NOT FOR CONSTRUCTION	



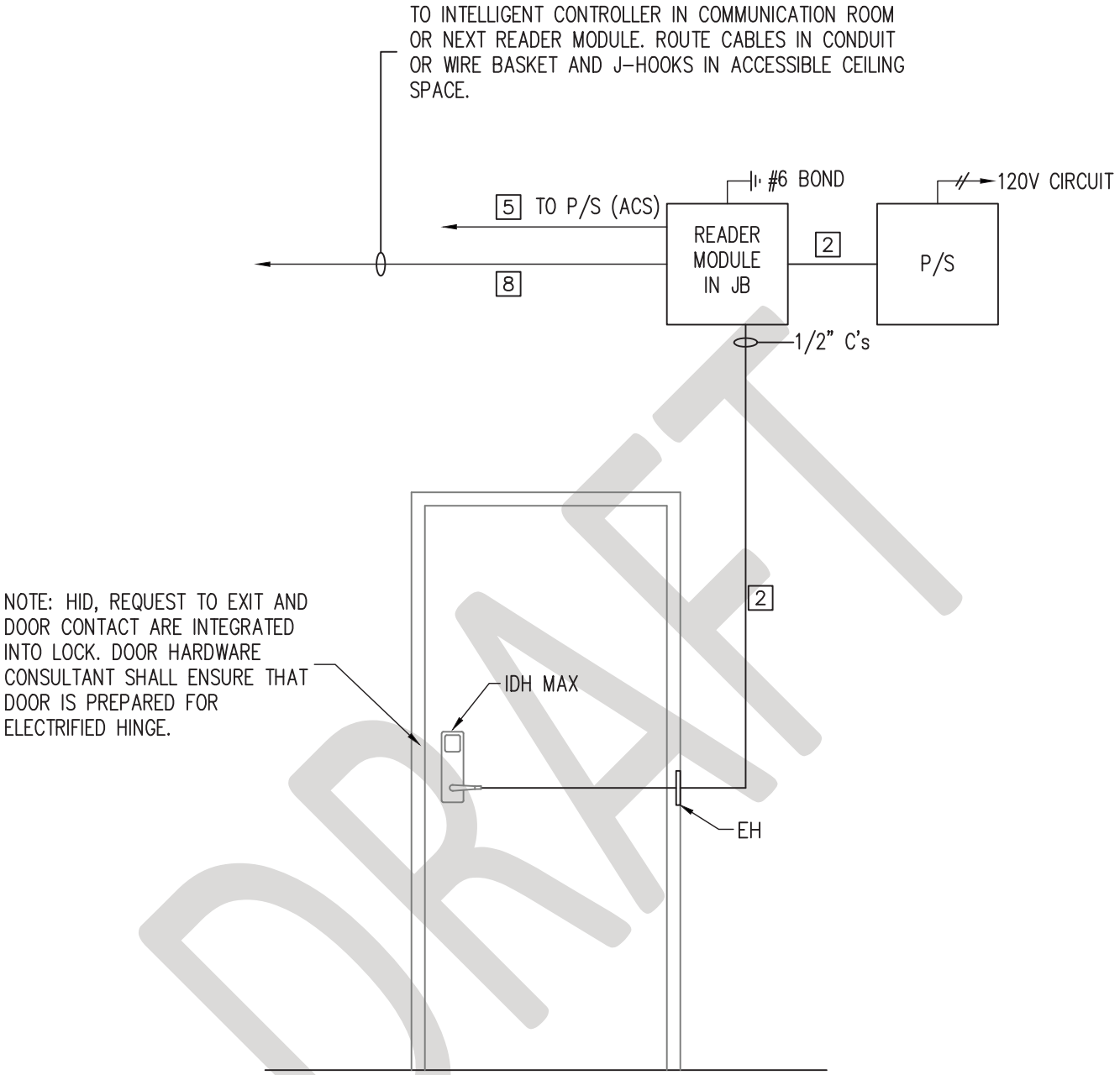
DOUBLE DOOR CARD ACCESS WITH ELR, RTE (EX) AND DC

NOTES:	PROJECT: ACCESS CONTROL AND SECURITY GUIDELINES	C.P. #	DALHOUSIE UNIVERSITY Inspiring Minds
		W.O. #	
		PROJECT MANAGER:	
	DRAWING:	SCALE:	
		DRAWN BY:	
		DATE: 10/12/2018	DAC-08
		NOT FOR CONSTRUCTION	



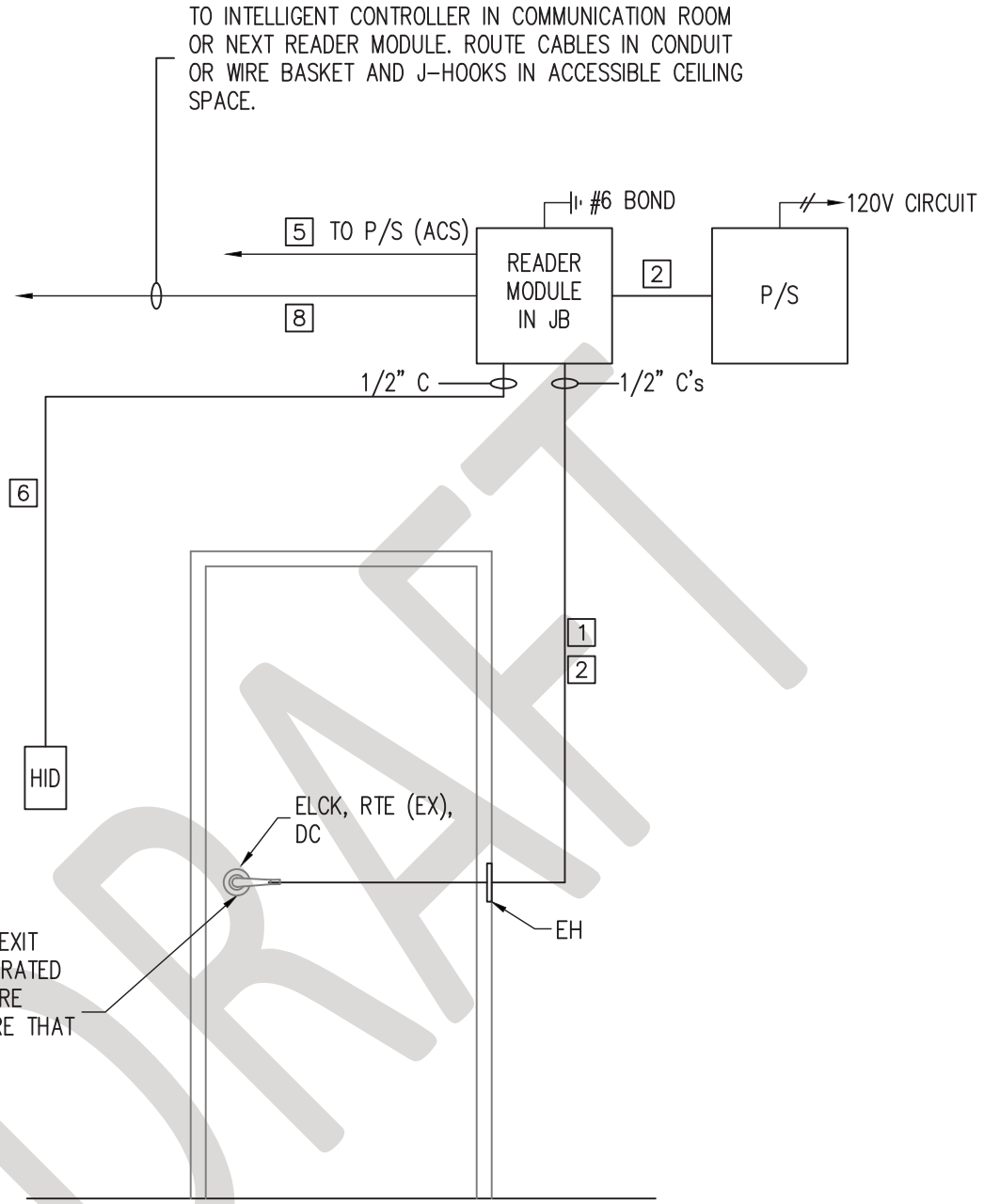
BARRIER FREE SINGLE DOOR CARD ACCESS WITH ES, RTE (EX) AND DC

NOTES:	PROJECT: ACCESS CONTROL AND SECURITY GUIDELINES	C.P. #	DALHOUSIE UNIVERSITY Inspiring Minds
		W.O. #	
		PROJECT MANAGER:	
	DRAWING:	SCALE:	DAC-09
		DRAWN BY:	
		DATE: 10/12/2018	
		NOT FOR CONSTRUCTION	



SINGLE DOOR CARD ACCESS WITH ELCK, RTE (EX) AND INTEGRATED DC AND HID

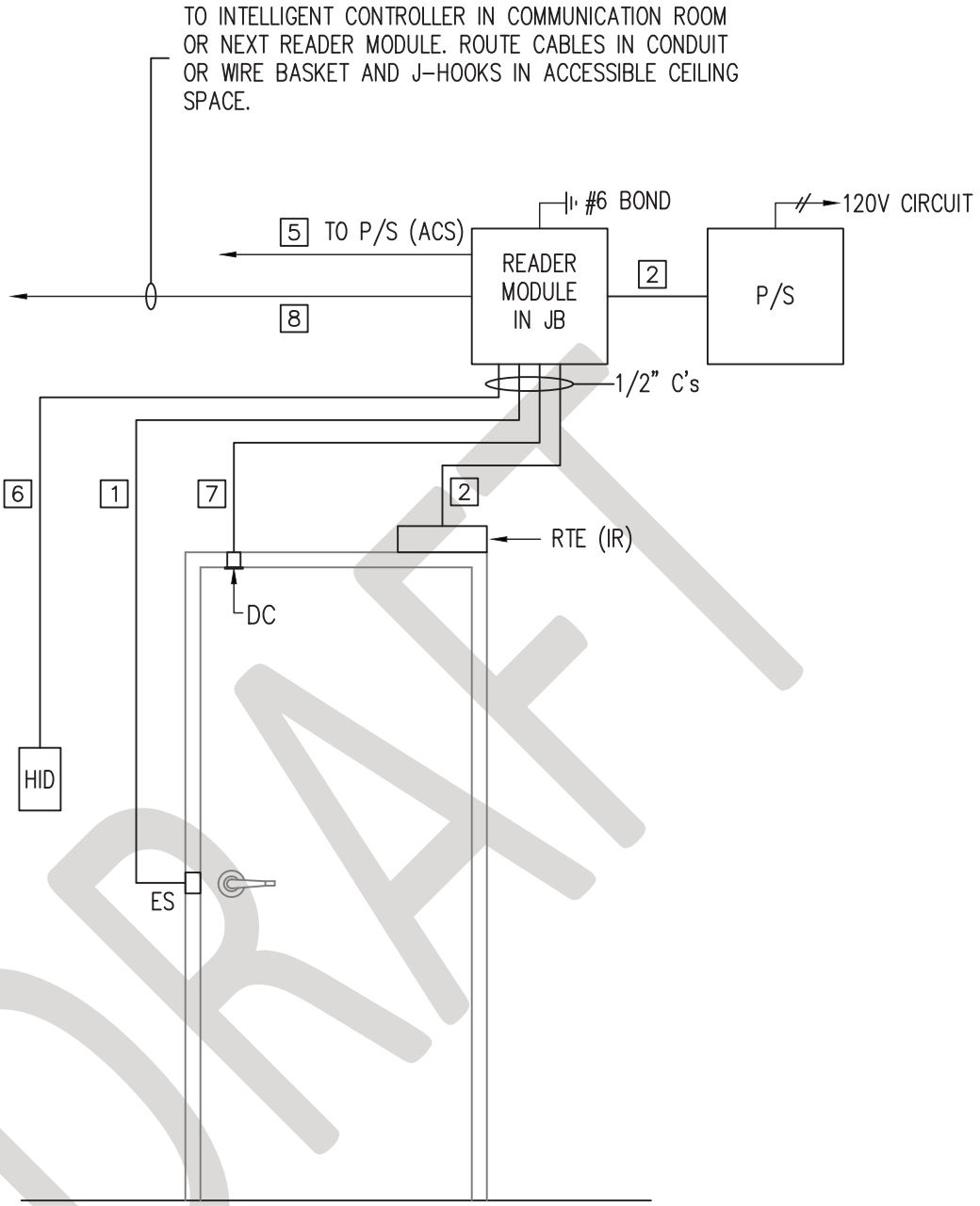
NOTES:	PROJECT: ACCESS CONTROL AND SECURITY GUIDELINES	C.P. #	DALHOUSIE UNIVERSITY Inspiring Minds
		W.O. #	
		PROJECT MANAGER:	
	DRAWING:	SCALE:	DAC-10
		DRAWN BY:	
		DATE: 10/12/2018	
		NOT FOR CONSTRUCTION	



NOTE: BOTH REQUEST TO EXIT AND DOOR CONTACT INTEGRATED INTO LOCK. DOOR HARDWARE CONSULTANT SHALL ENSURE THAT DOOR IS PREPARED FOR ELECTRIFIED HINGE.

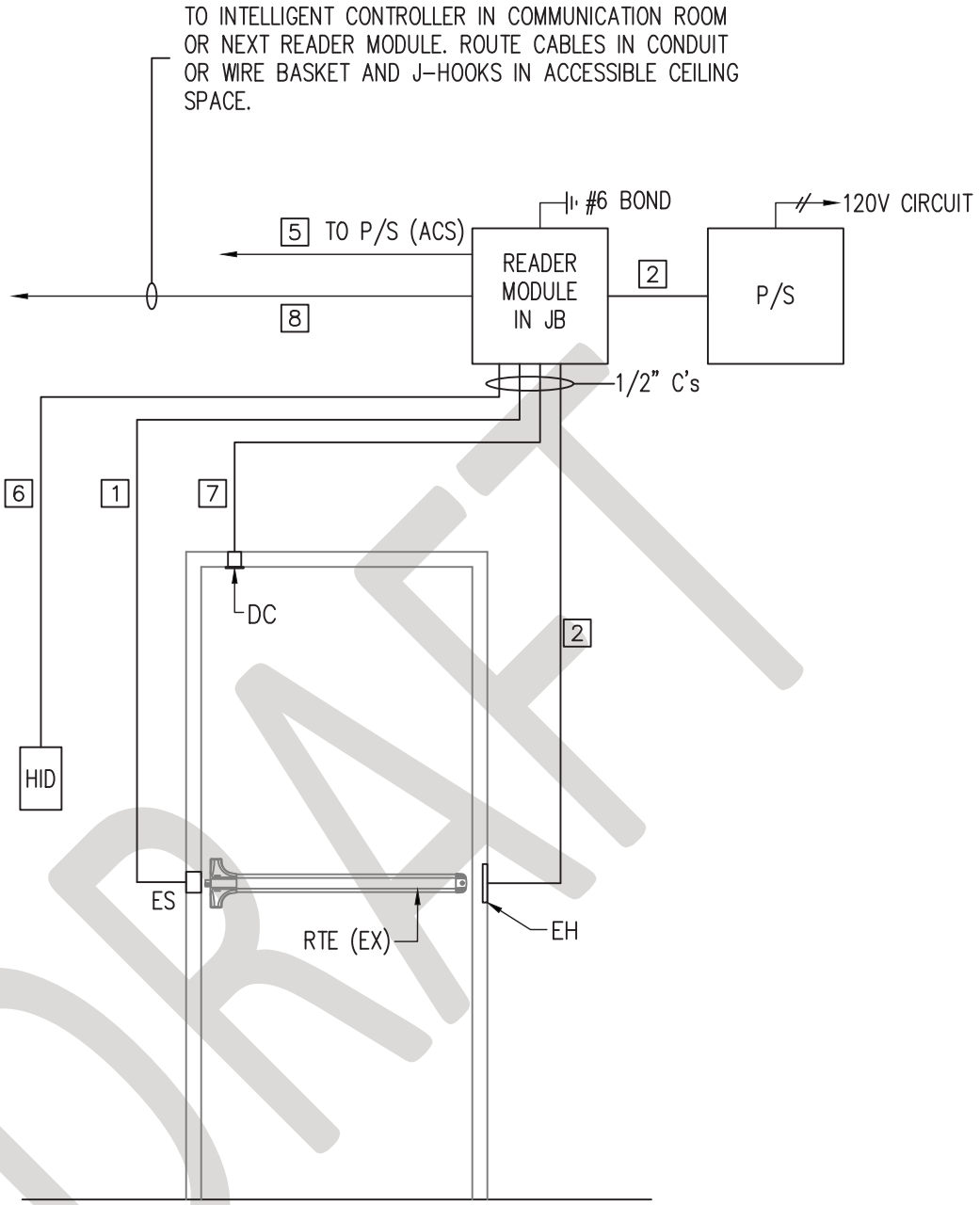
SINGLE DOOR CARD ACCESS WITH ELCK, RTE (EX) AND INTEGRATED DC

NOTES:	PROJECT: ACCESS CONTROL AND SECURITY GUIDELINES	C.P. #	DALHOUSIE UNIVERSITY Inspiring Minds
		W.O. #	
		PROJECT MANAGER:	
	DRAWING:	SCALE:	
		DRAWN BY:	DAC-11
		DATE: 10/12/2018	
		NOT FOR CONSTRUCTION	



SINGLE DOOR CARD ACCESS WITH ES, RTE (IR) AND DC

NOTES:	PROJECT: ACCESS CONTROL AND SECURITY GUIDELINES	C.P. #	DALHOUSIE UNIVERSITY Inspiring Minds
		W.O. #	
		PROJECT MANAGER:	
	DRAWING:	SCALE:	
		DRAWN BY:	DAC-12
		DATE: 10/12/2018	
		NOT FOR CONSTRUCTION	



SINGLE DOOR CARD ACCESS WITH ES, RTE (EX) AND DC

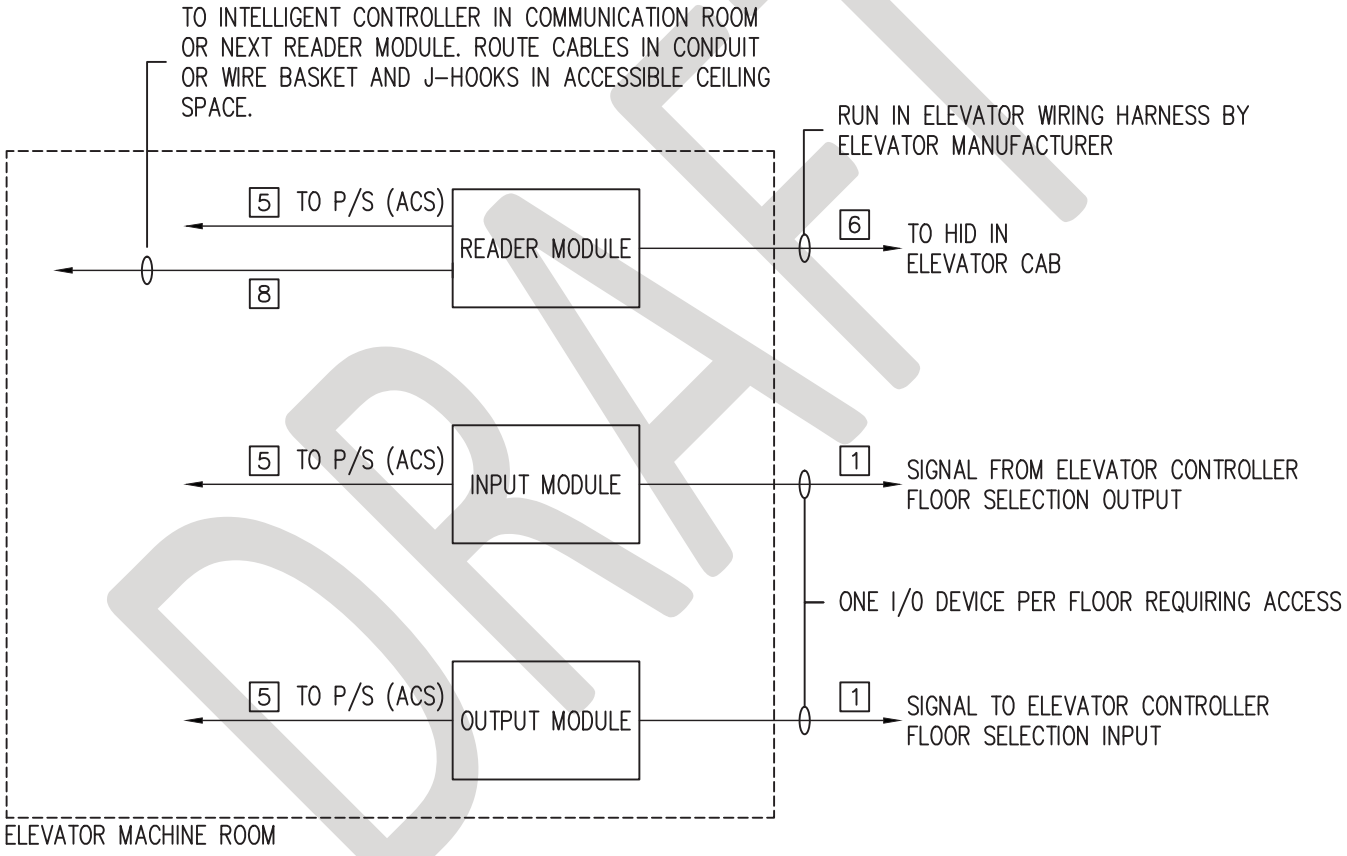
NOTES:	PROJECT: ACCESS CONTROL AND SECURITY GUIDELINES	C.P. #	DALHOUSIE UNIVERSITY Inspiring Minds
		W.O. #	
		PROJECT MANAGER:	
	DRAWING:	SCALE:	
		DRAWN BY:	DAC-13
		DATE: 10/12/2018	
		NOT FOR CONSTRUCTION	

NOTES:

1. WIRING FROM INPUT AND OUTPUT MODULES TO ELEVATOR CONTROLLER BY ELECTRICAL CONTRACTOR. TERMINATIONS AT ELEVATOR CONTROLLER BY ELEVATOR MANUFACTURER. COORDINATE WITH ELEVATOR MANUFACTURER.
2. ALL WIRING AND TERMINATIONS BY ELECTRICAL CONTRACTOR UNLESS SPECIFICALLY NOTED OTHERWISE.

SEQUENCE OF OPERATION:

1. ELEVATOR CAB FLOOR BUTTON IS PRESSED.
2. ELEVATOR SIGNALS THE CARD SYSTEM WITH A MOMENTARY DRY CONTACT OUTPUT TO THE CORRESPONDING FLOOR INPUT.
3. USER PRESENTS THEIR CARD.
4. CARD CREDENTIALS FOR REQUESTED FLOOR ARE ASSESSED BY THE ACCESS CONTROL SYSTEM.
5. IF CARD FAILS, THEN NOTHING IS SENT TO THE ELEVATOR
6. IF CARD PASSES THEN THE ACCESS CONTROL SYSTEM SIGNALS THE ELEVATOR WITH A DRY CONTACT MOMENTARY OUTPUT FROM THE CORRESPONDING FLOOR OUTPUT.
7. ELEVATOR CAB FLOOR BUTTON LIGHTS AND CAB TRAVELS TO THE ACCESS GRANTED FLOOR.

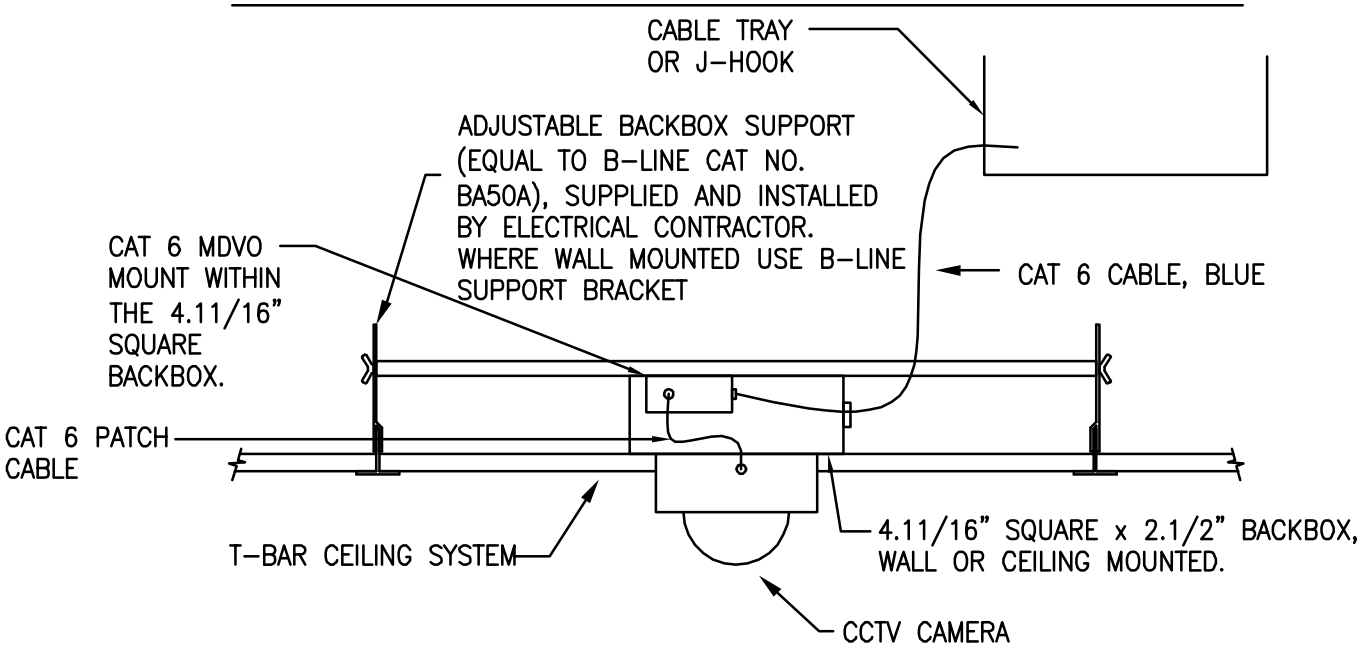


ELEVATOR CAB CARD ACCESS RISER

NOTES:	PROJECT: ACCESS CONTROL AND SECURITY GUIDELINES	C.P. #	DALHOUSIE UNIVERSITY Inspiring Minds
		W.O. #	
		PROJECT MANAGER:	
		SCALE:	
	DRAWING:	DRAWN BY:	
		DATE: 10/12/2018	DAC-14
		NOT FOR CONSTRUCTION	

DALHOUSIE UNIVERSITY

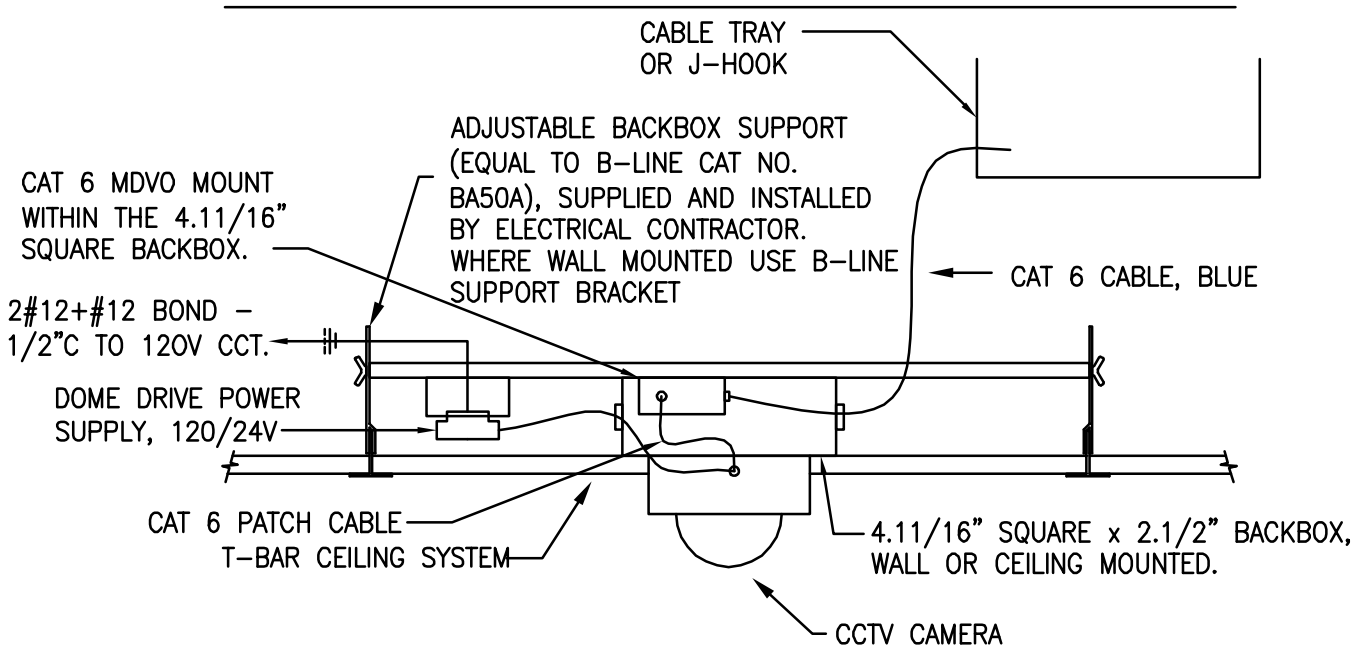
APPENDIX B - SECURITY SYSTEM VIDEO SYSTEM DETAILS



TYPICAL INTERIOR CEILING DOME CCTV CAMERA SUPPORT SYSTEM

SCALE : N.T.S.

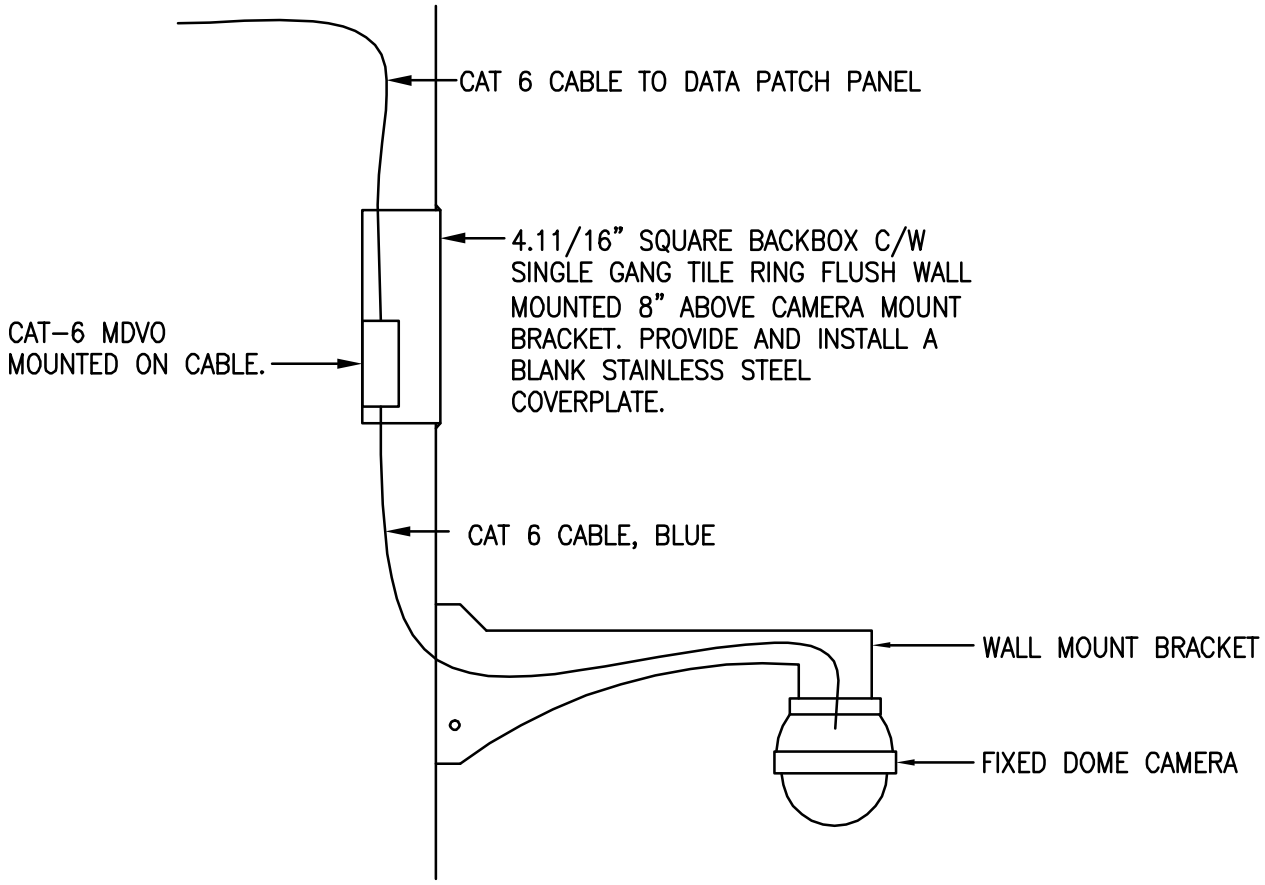
NOTES:	PROJECT: CCTV GUIDELINES	SCALE: NTS	DATE: NOV. 2012	DALHOUSIE UNIVERSITY Inspiring Minds
		DRAWN BY: TRP	REV. 1	CCTV-1
	DRAWING: CEILING MOUNTED DOME, FIXED	FILE NAME: –		



TYPICAL INTERIOR CEILING DOME DRIVE (PTZ) CCTV CAMERA SUPPORT SYSTEM

SCALE : N.T.S.

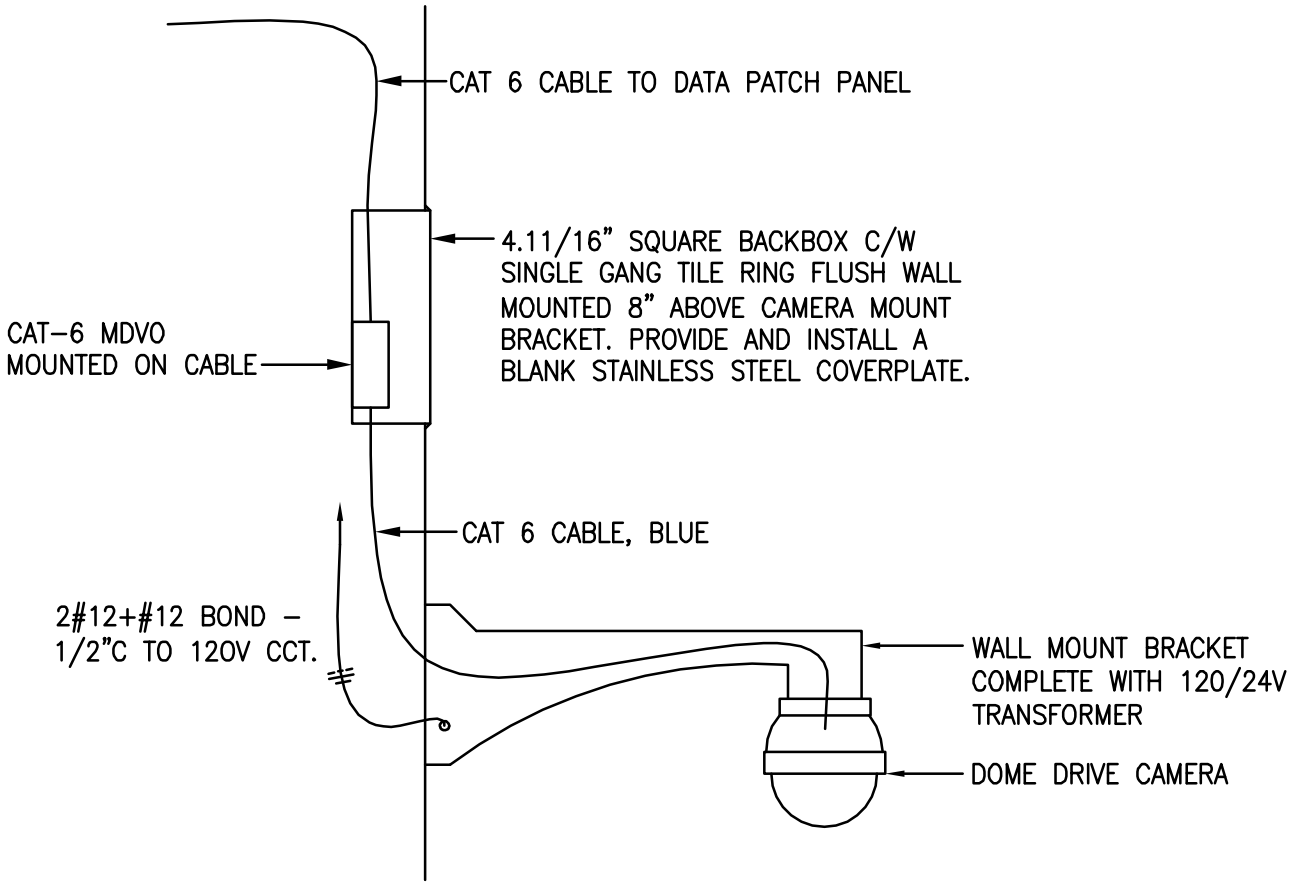
NOTES:	PROJECT: CCTV GUIDELINES	SCALE: NTS	DATE: NOV, 2012	DALHOUSIE UNIVERSITY Inspiring Minds
		DRAWN BY: TRP	REV. 2	**CCTV-2**
	DRAWING: CEILING MOUNTED DOME WITH PTZ	FILE NAME: –		



TYPICAL INTERIOR WALL MOUNT FIXED DOME CCTV CAMERA SUPPORT SYSTEM

SCALE : N.T.S.

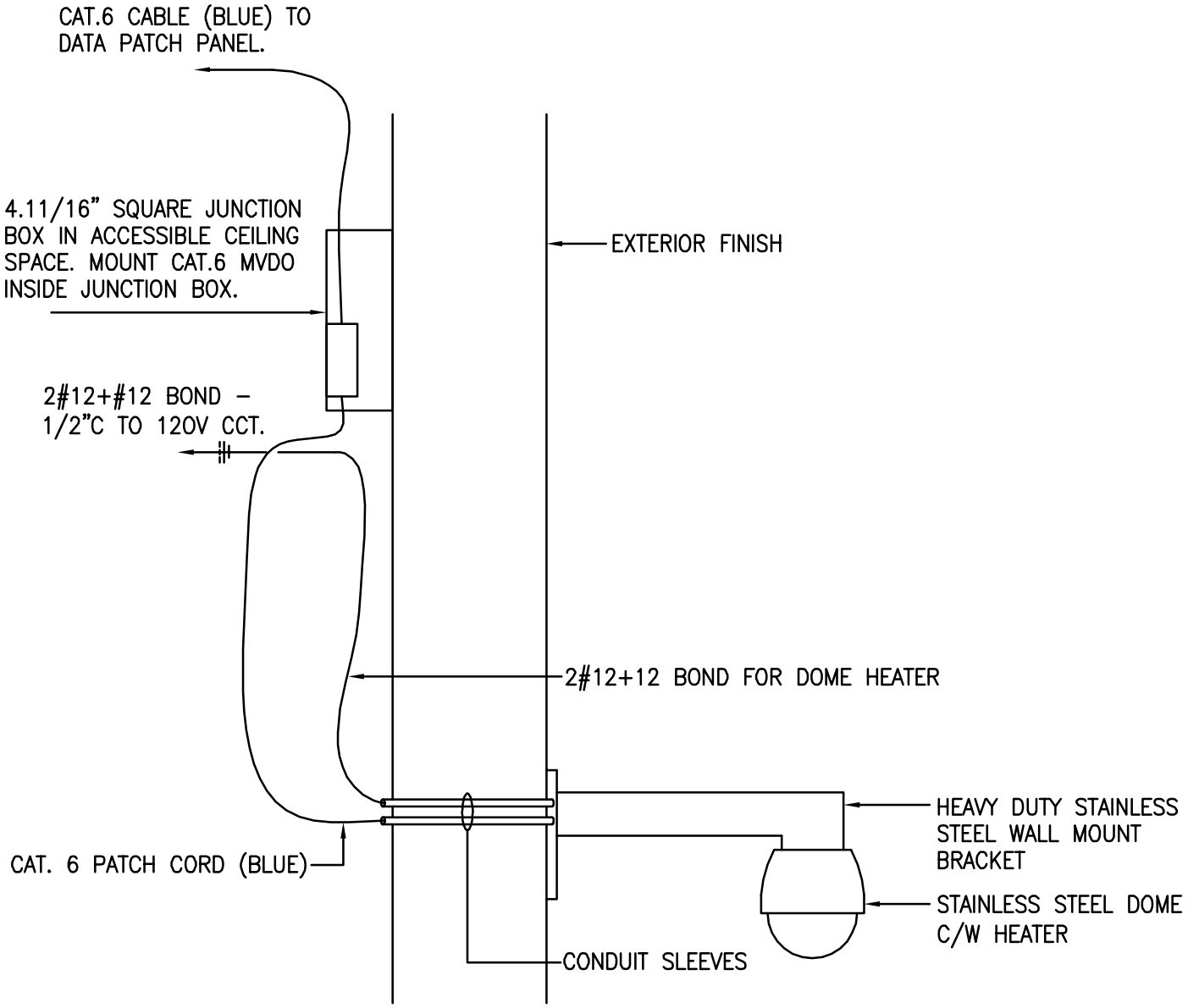
NOTES:	PROJECT: CCTV GUIDELINES	SCALE: NTS	DATE: NOV, 2012	DALHOUSIE UNIVERSITY Inspiring Minds
		DRAWN BY: TRP	REV. 2	**CCTV-3**
	DRAWING: WALL MOUNTED DOME, FIXED	FILE NAME: –		



TYPICAL INTERIOR WALL MOUNT DOME DRIVE (PTZ) CCTV CAMERA SUPPORT SYSTEM

SCALE : N.T.S.

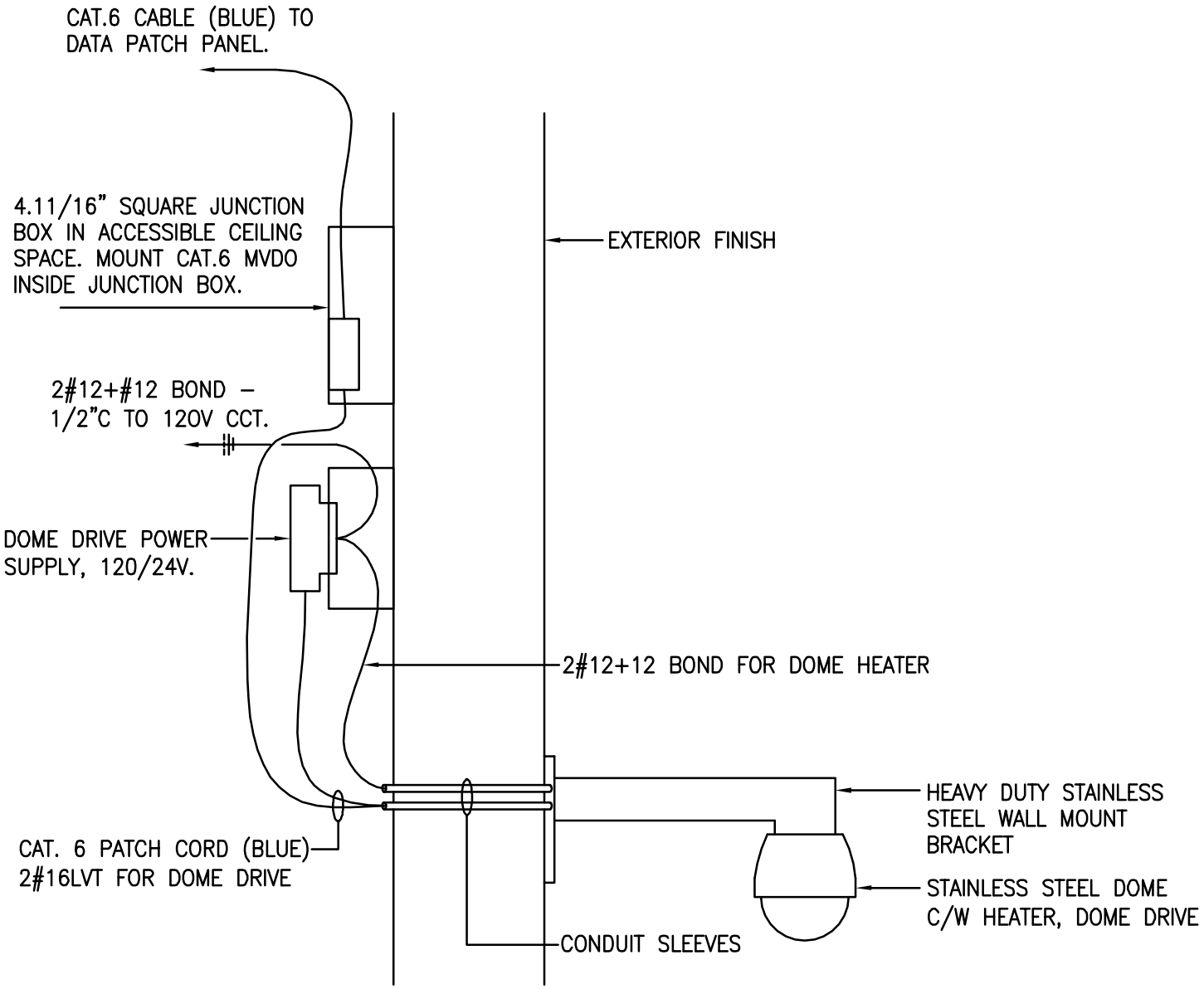
NOTES:	PROJECT: CCTV GUIDELINES	SCALE: NTS	DATE: NOV, 2012	DALHOUSIE UNIVERSITY Inspiring Minds
		DRAWN BY: TRP	REV. 2	**CCTV-4**
	DRAWING: WALL MOUNTED DOME WITH PTZ	FILE NAME: –		



TYPICAL OUTDOOR WALL MOUNT DOME CCTV CAMERA SUPPORT SYSTEM

SCALE : N.T.S.

NOTES:	PROJECT: CCTV GUIDELINES	SCALE: NTS	DATE: NOV, 2012	DALHOUSIE UNIVERSITY Inspiring Minds
		DRAWN BY: TRP	REV. 2	**CCTV-5**
	DRAWING: OUTDOOR WALL MOUNTED DOME, FIXED	FILE NAME: –		



TYPICAL OUTDOOR WALL MOUNT DOME CCTV CAMERA SUPPORT SYSTEM WITH PTZ

SCALE : N.T.S.

NOTES:	PROJECT: CCTV GUIDELINES	SCALE: NTS	DATE: MAY, 2012	DALHOUSIE UNIVERSITY Inspiring Minds
		DRAWN BY: TRP	REV. 1	**CCTV-6**
	DRAWING: OUTDOOR WALL MOUNTED DOME WITH PTZ	FILE NAME: –		

DALHOUSIE UNIVERSITY

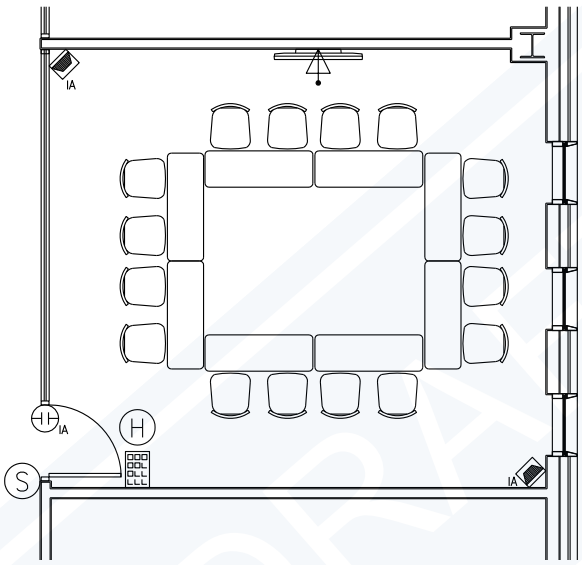
APPENDIX C - INTRUSION ALARM DETAILS

ELECTRICAL LEGEND

	SECURITY KEYPAD FLUSH WALL MOUNTED AT 46" A.F.F..
	CONCEALED DOOR CONTACT FOR INTRUSION ALARM SYSTEM
	INTRUSION ALARM MOTION SENSOR FLUSH WALL MOUNTED AT 8'-0" A.F.F..
	PC TAB SECURITY DEVICE, CEILING MOUNT OR FLUSH WALL MOUNTED 18" A.F.F..
	INTRUSION ALARM HORN, WALL MOUNTED 7'-6" A.F.F..
	INTRUSION ALARM STROBE, WALL MOUNTED 7'-6" A.F.F..
1	BELDEN #8461 (2 CONDUCTOR #18AWG, JACKETED) OR EQUIVALENT.
2	BELDEN #9418 (4 CONDUCTOR #18AWG, JACKETED) OR EQUIVALENT.
7	PROVO #Z422NR-WH (4 CONDUCTOR #22AWG, JACKETED) OR EQUIVALENT.

NOTES:	PROJECT: ACCESS CONTROL AND SECURITY GUIDELINES	C.P. #	DALHOUSIE UNIVERSITY *Inspiring Minds*
		W.O. #	
		PROJECT MANAGER:	
	DRAWING:	SCALE:	
		DRAWN BY:	
		DATE: 24/10/2016	IA-1
		NOT FOR CONSTRUCTION	

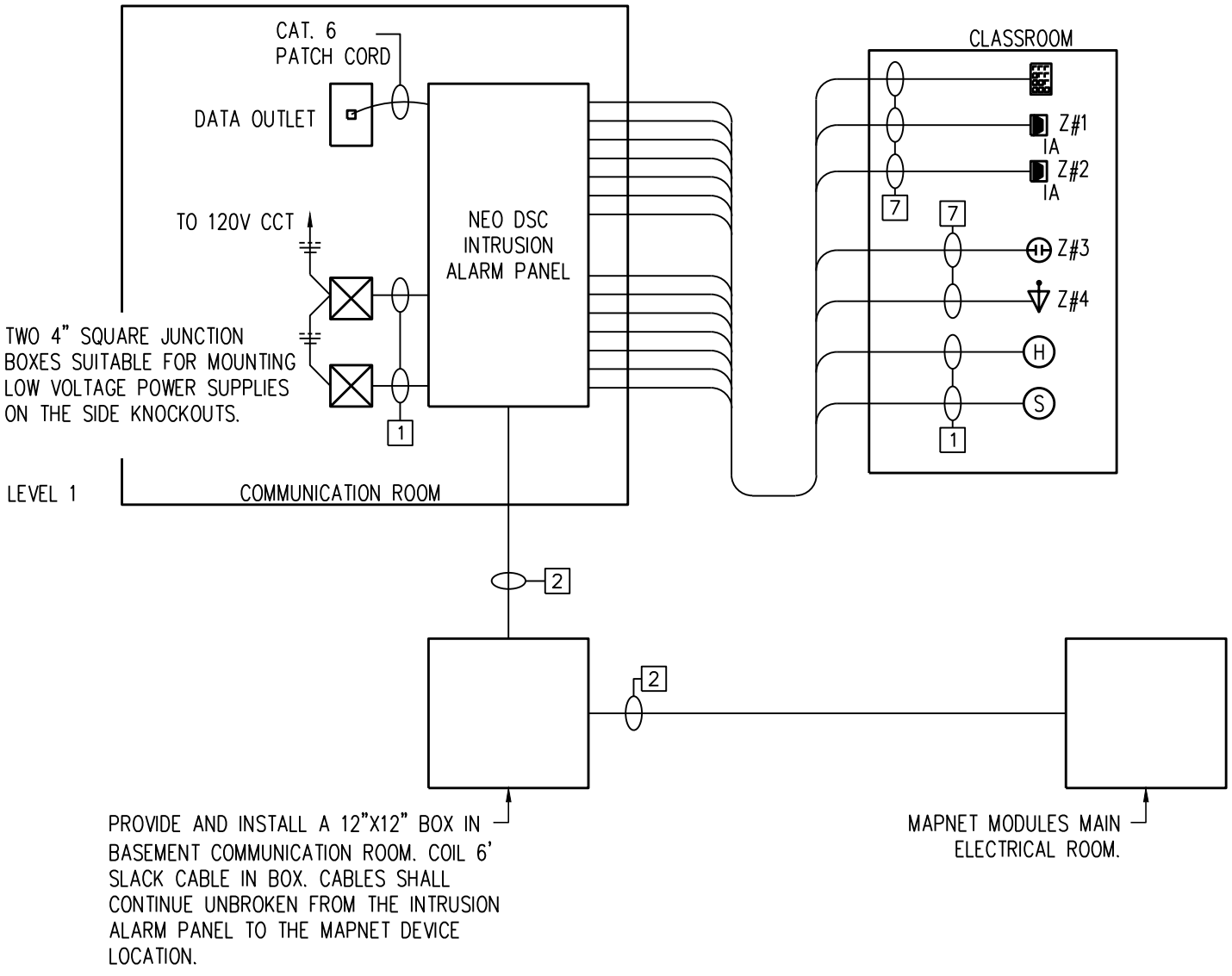
U:\EVERYONE\CAD MANAGEMENT\ANDREW\LOGAN\ACCESS CONTROL\16.10.21 NEW PLANS.DWG



TYPICAL CLASSROOM IA LAYOUT

NOTES:	PROJECT: ACCESS CONTROL AND SECURITY GUIDELINES	C.P. #	DALHOUSIE UNIVERSITY *Inspiring Minds*
		W.O. #	
		PROJECT MANAGER:	
		SCALE:	
	DRAWING:	DRAWN BY:	
		DATE: 24/10/2016	IA–2
		NOT FOR CONSTRUCTION	

U:\EVERYONE\CAD MANAGEMENT\ANDREW\LOGAN\ACCESS CONTROL\16.10.21 NEW PLANS.DWG



NOTES:	PROJECT: ACCESS CONTROL AND SECURITY GUIDELINES	C.P. #
		W.O. #
		PROJECT MANAGER:
	DRAWING:	SCALE:
		DRAWN BY:
		DATE: 10/02/2025
		NOT FOR CONSTRUCTION

DALHOUSIE UNIVERSITY
Inspiring Minds

IA – 3

C:\USERS\AKLANGLE\ONEDRIVE - DALHOUSIE UNIVERSITY\DESKTOP\DOOR ACCESS CONTROL DETAILS.DWG

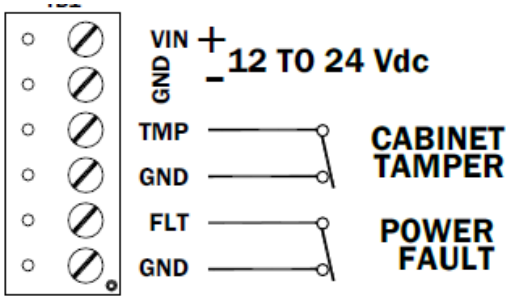
DALHOUSIE UNIVERSITY

APPENDIX D - TYPICAL ACCESS CONTROL CONNECTIONS

Dalhousie Typical Access Control Connections

Host Controller EP, LP & MP

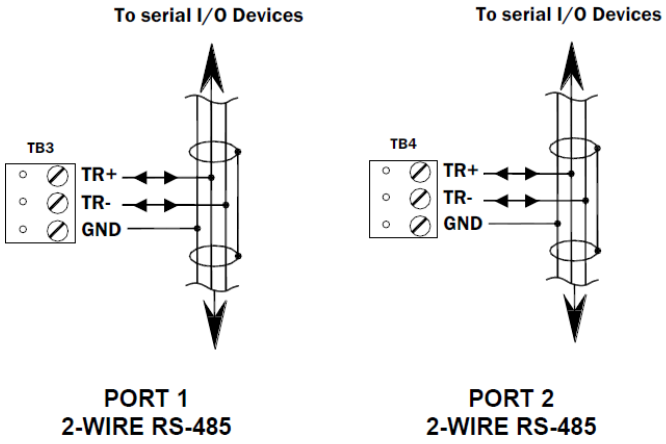
- Please install DSC 544 Cabinet lock on all cabinets.
- Please connect Cabinet Tamper.
- Please connect Power Supply Low Battery Supervision to Power Fault Input.



Serial I/O Device Communication

- Must Use 1-twisted pair, shielded, 120 ohm impedance, 24AWG for all serial device communications!

Ports 1 and 2 utilize 2-wire RS-485 interface. The interface allows multi-drop communication on a single bus of up to 4,000 feet (1,219 m). Use 1-twisted pair, shielded, 120 ohm impedance, 24 AWG. 4,000 ft. (1,219 m) maximum cable length.



IMPORTANT NOTE! Install the termination jumper ONLY on the panel at each end of the RS-485 bus. Failure to do so will compromise the proper operation of the communication channel!

Dennis Boudreau, Dalhousie Access Control Shop
dennis.boudreau@dal.ca

Dalhousie Typical Access Control Connections

Serial I/O Device Addressing

Set Switches 1-5 to RS485 address 0-31 (see chart below)

Set Switches 6 and 7 on for 38400 BPS Communications

Set Switch 8 to off

S5	S4	S3	S2	S1	SELECTION
OFF	OFF	OFF	OFF	OFF	Address 0
OFF	OFF	OFF	OFF	ON	Address 1
OFF	OFF	OFF	ON	OFF	Address 2
OFF	OFF	OFF	ON	ON	Address 3
OFF	OFF	ON	OFF	OFF	Address 4
OFF	OFF	ON	OFF	ON	Address 5
OFF	OFF	ON	ON	OFF	Address 6
OFF	OFF	ON	ON	ON	Address 7
OFF	ON	OFF	OFF	OFF	Address 8
OFF	ON	OFF	OFF	ON	Address 9
OFF	ON	OFF	ON	OFF	Address 10
OFF	ON	OFF	ON	ON	Address 11
OFF	ON	ON	OFF	OFF	Address 12
OFF	ON	ON	OFF	ON	Address 13
OFF	ON	ON	ON	OFF	Address 14
OFF	ON	ON	ON	ON	Address 15
ON	OFF	OFF	OFF	OFF	Address 16
ON	OFF	OFF	OFF	ON	Address 17
ON	OFF	OFF	ON	OFF	Address 18
ON	OFF	OFF	ON	ON	Address 19
ON	OFF	ON	OFF	OFF	Address 20
ON	OFF	ON	OFF	ON	Address 21
ON	OFF	ON	ON	OFF	Address 22
ON	OFF	ON	ON	ON	Address 23
ON	ON	OFF	OFF	OFF	Address 24
ON	ON	OFF	OFF	ON	Address 25
ON	ON	OFF	ON	OFF	Address 26
ON	ON	OFF	ON	ON	Address 27
ON	ON	ON	OFF	OFF	Address 28
ON	ON	ON	OFF	ON	Address 29
ON	ON	ON	ON	OFF	Address 30
ON	ON	ON	ON	ON	Address 31

Dennis Boudreau, Dalhousie Access Control Shop
dennis.boudreau@dal.ca

Dalhousie Typical Access Control Connections

Reader Interfaces MR50, 52

- Please install DSC 544 Cabinet lock on all cabinets.
- Please connect Cabinet Tamper.

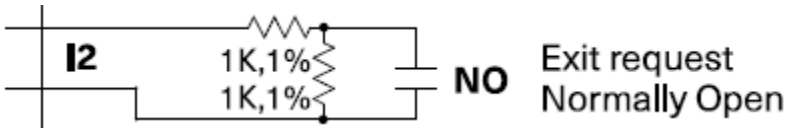
Schlage MTB 11,15, & 15KB Readers.

- Must use 6/22G Stranded Shielded Cable for all Readers!

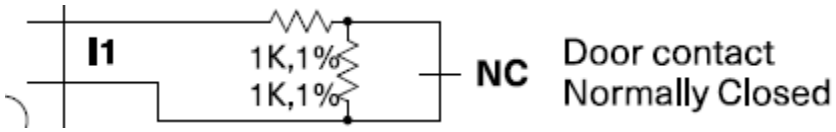
Mercury Interface	6/22 Str/Shld Cable	Schlage MT Readers
Gnd	Shield Connect Interface end only!	Shield not connected!
Gnd	Black	Black
VO	Red	Red
DAT- DO	Green	Green
CLK+ DI	White	White
BZR	Blue	Yellow
LED	Brown	Orange

Input Devices

- Request To Exit Connections (Double EOL Normally Open)



- Door Contact Connections (Double EOL Normally Closed)



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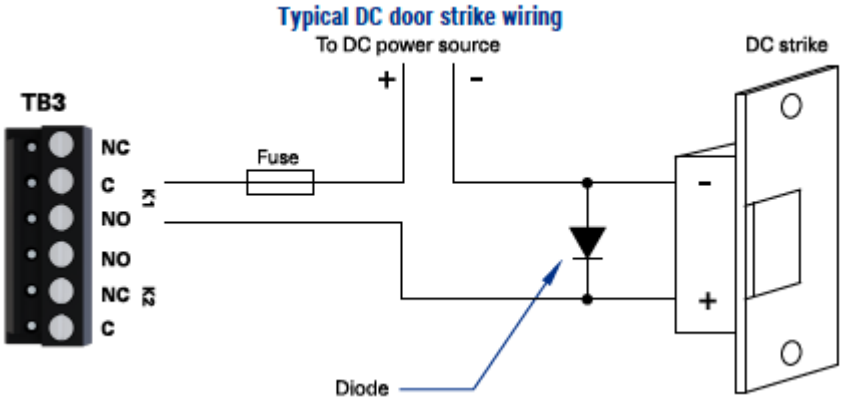
Dalhousie Typical Access Control Connections

Output Devices

- Must use lock manufacturer specified cable for all lock connections! (18AWG or larger Stranded cable)
- Must install suitable diode or MOV at all lock connections!



- For 12 V DC or 24 V DC strike, Diode 1N4002 (100V/1A) is typical.

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