


* see drawing IT.8 for legend and details.



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Electrical DataComm Design / Build

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No.	Revision/Issue:	Date:
2	Revised / Updated	3-Nov-23
1	PRELIMINARY / REVIEW	11-Oct-23

Project Name:

Drawing Title:

CCTV / SECURITY

Drawn by:

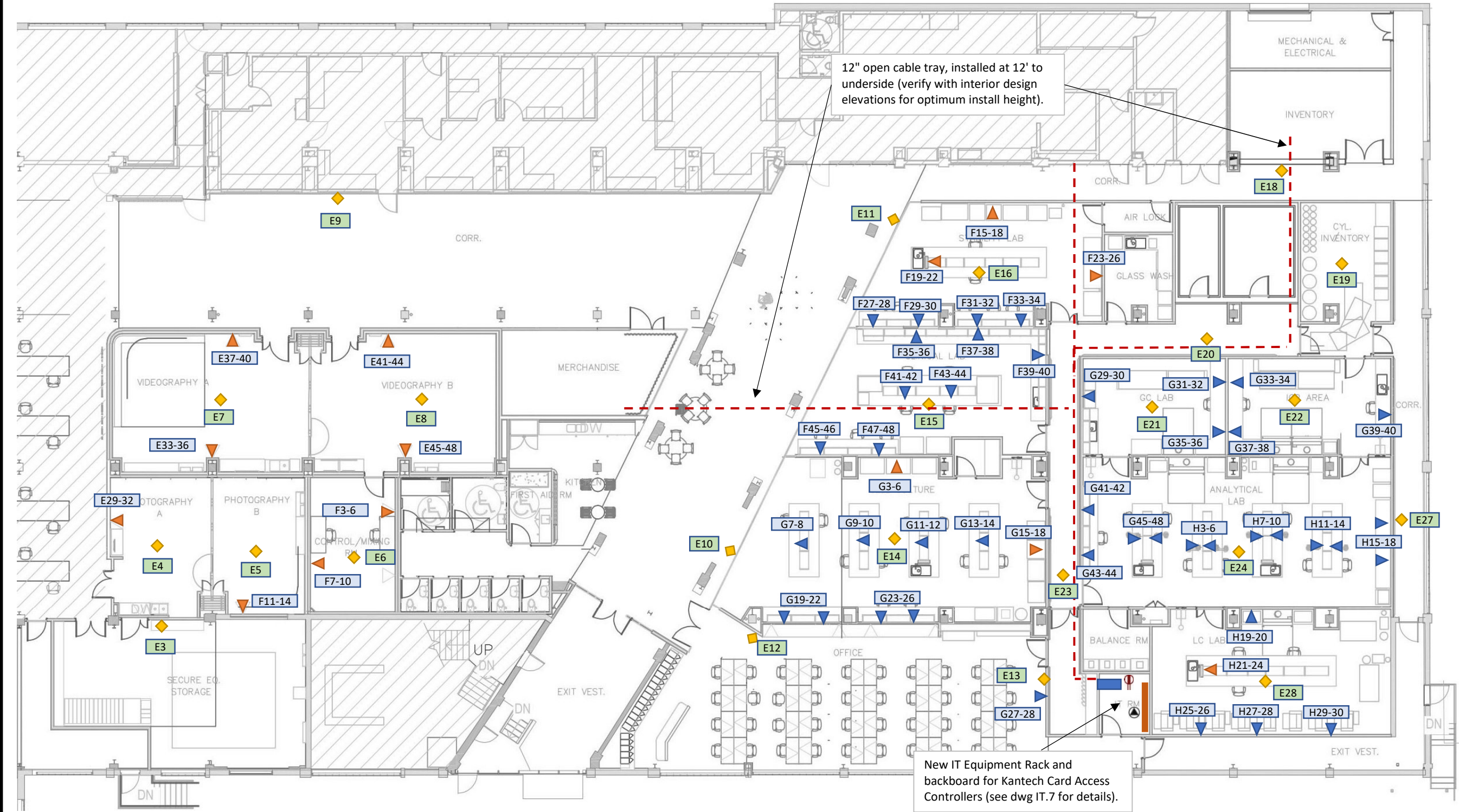
Date:

11-Oct-23

Scale:

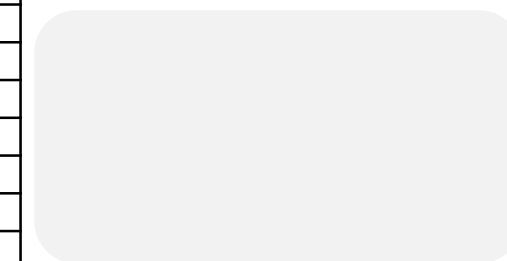
N.T.S.

IT.1



2	Revised / Updated	3-Nov-23
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No.	Revision/Issue:	Date:

Project Name:



Drawing Title:

DATA NETWORK

Drawn by:

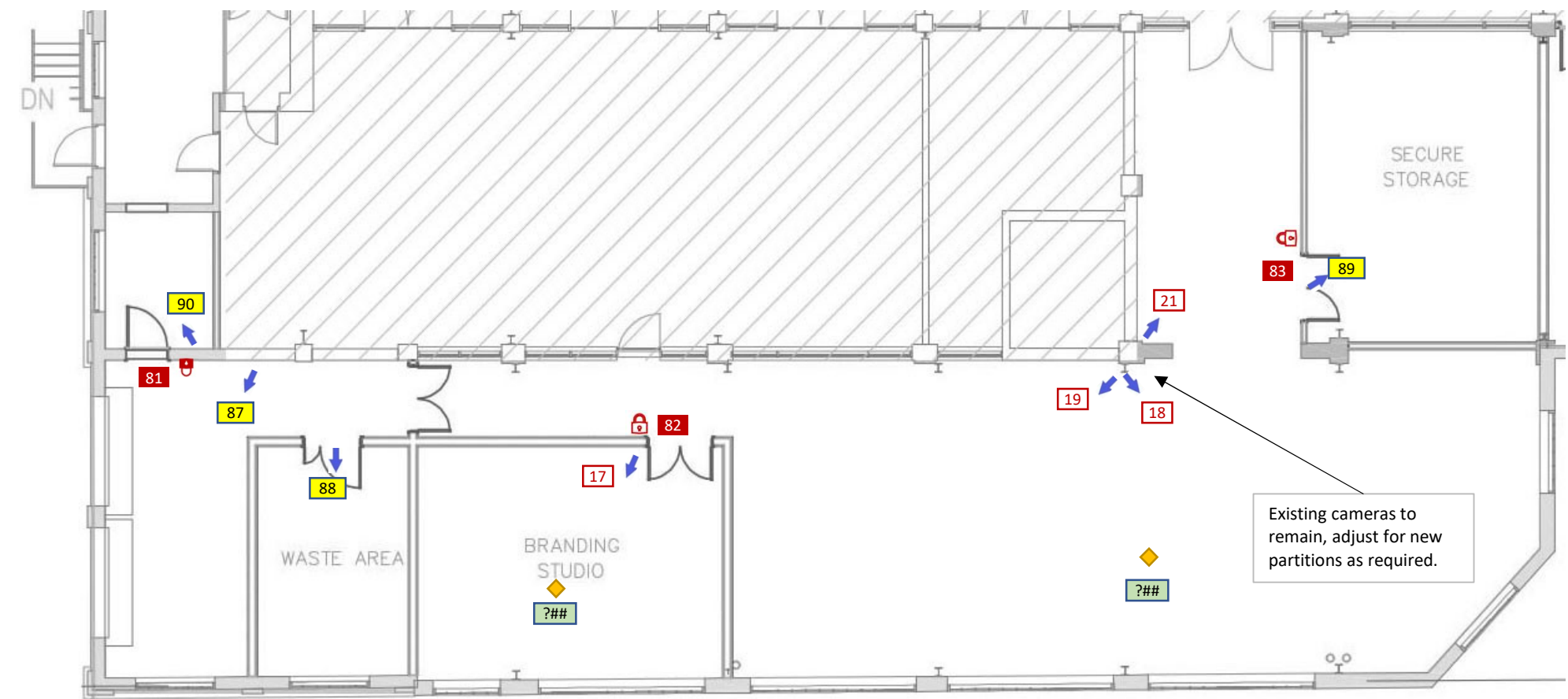
Scale:

N.T.S.

Date:

11-Oct-23

IT.2



Connect cameras and data points to available spaces in second floor IT room, including additional Kantech controller for 3 doors.

Existing cameras to remain, adjust for new partitions as required.

* see drawing IT.8 for legend and details.



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No.	Revision/Issue:	Date:

Project Name:

Drawing Title:	
SECURITY / DATA	
Drawn by:	Scale:
	N.T.S.
Date:	IT.3
11-Oct-23	

MAIN IT RACK, SERVER ROOM, LABS



Switch [E] Data Network

Meraki MS120 48P PoE Switch			
SFP	uplink to fiber switch (2nd flr)	25	PoE - WAP
2	reserved	26	PoE - WAP
3	PoE - WAP	27	PoE - WAP
4	PoE - WAP	28	PoE - WAP
5	PoE - WAP	29	Data Outlets (media)
6	PoE - WAP	30	Data Outlets (media)
7	PoE - WAP	31	Data Outlets (media)
8	PoE - WAP	32	Data Outlets (media)
9	PoE - WAP	33	Data Outlets (media)
10	PoE - WAP	34	Data Outlets (media)
11	PoE - WAP	35	Data Outlets (media)
12	PoE - WAP	36	Data Outlets (media)
13	PoE - WAP	37	Data Outlets (media)
14	PoE - WAP	38	Data Outlets (media)
15	PoE - WAP	39	Data Outlets (media)
16	PoE - WAP	40	Data Outlets (media)
17		41	Data Outlets (media)
18	PoE - WAP	42	Data Outlets (media)
19	PoE - WAP	43	Data Outlets (media)
20	PoE - WAP	44	Data Outlets (media)
21	PoE - WAP	45	Data Outlets (media)
22	PoE - WAP	46	Data Outlets (media)
23	PoE - WAP	47	Data Outlets (media)
24	PoE - WAP	48	Data Outlets (media)



Switch [F] Data Network

Meraki MS120 48P PoE Switch			
SFP	uplink to fiber switch (2nd flr)	25	Data Outlets (labs)
2	reserved	26	Data Outlets (labs)
3	Data Outlets (media)	27	Data Outlets (labs)
4	Data Outlets (media)	28	Data Outlets (labs)
5	Data Outlets (media)	29	Data Outlets (labs)
6	Data Outlets (media)	30	Data Outlets (labs)
7	Data Outlets (media)	31	Data Outlets (labs)
8	Data Outlets (media)	32	Data Outlets (labs)
9	Data Outlets (media)	33	Data Outlets (labs)
10	Data Outlets (media)	34	Data Outlets (labs)
11	Data Outlets (media)	35	Data Outlets (labs)
12	Data Outlets (media)	36	Data Outlets (labs)
13	Data Outlets (media)	37	Data Outlets (labs)
14	Data Outlets (media)	38	Data Outlets (labs)
15	Data Outlets (labs)	39	Data Outlets (labs)
16	Data Outlets (labs)	40	Data Outlets (labs)
17	Data Outlets (labs)	41	Data Outlets (labs)
18	Data Outlets (labs)	42	Data Outlets (labs)
19	Data Outlets (labs)	43	Data Outlets (labs)
20	Data Outlets (labs)	44	Data Outlets (labs)
21	Data Outlets (labs)	45	Data Outlets (labs)
22	Data Outlets (labs)	46	Data Outlets (labs)
23	Data Outlets (labs)	47	Data Outlets (labs)
24	Data Outlets (labs)	48	Data Outlets (labs)

Patch Panel / Switch Port and Network Device Number for CCTV

Patch Panel / Switch Port and Network Device Number for DATA

Use 1' and 2' (shortest length patch cords pratical) from patch panel to switch

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No.	Revision/Issue:	Date:

Project Name:

Drawing Title:

PORT LEGEND

Drawn by:

Date:

11-Oct-23

Scale:

N.T.S.

IT.4

MAIN IT RACK, SERVER ROOM, LABS



Switch [G] Data Network

Meraki MS120 48P PoE Switch		
SFP1	uplink to fiber switch (2nd flr)	25 Data Outlets (labs)
2	reserved	26 Data Outlets (labs)
3	Data Outlets (labs)	27 Data Outlets (labs)
4	Data Outlets (labs)	28 Data Outlets (labs)
5	Data Outlets (labs)	29 Data Outlets (labs)
6	Data Outlets (labs)	30 Data Outlets (labs)
7	Data Outlets (labs)	31 Data Outlets (labs)
8	Data Outlets (labs)	32 Data Outlets (labs)
9	Data Outlets (labs)	33 Data Outlets (labs)
10	Data Outlets (labs)	34 Data Outlets (labs)
11	Data Outlets (labs)	35 Data Outlets (labs)
12	Data Outlets (labs)	36 Data Outlets (labs)
13	Data Outlets (labs)	37 Data Outlets (labs)
14	Data Outlets (labs)	38 Data Outlets (labs)
15	Data Outlets (labs)	39 Data Outlets (labs)
16	Data Outlets (labs)	40 Data Outlets (labs)
17	Data Outlets (labs)	41 Data Outlets (labs)
18	Data Outlets (labs)	42 Data Outlets (labs)
19	Data Outlets (labs)	43 Data Outlets (labs)
20	Data Outlets (labs)	44 Data Outlets (labs)
21	Data Outlets (labs)	45 Data Outlets (labs)
22	Data Outlets (labs)	46 Data Outlets (labs)
23	Data Outlets (labs)	47 Data Outlets (labs)
24	Data Outlets (labs)	48 Data Outlets (labs)



Switch [H] Data Network

Meraki MS120 48P PoE Switch		
SFP1	uplink to fiber switch (2nd flr)	25 Data Outlets (labs)
2	reserved	26 Data Outlets (labs)
3	Data Outlets (labs)	27 Data Outlets (labs)
4	Data Outlets (labs)	28 Data Outlets (labs)
5	Data Outlets (labs)	29 Data Outlets (labs)
6	Data Outlets (labs)	30 Data Outlets (labs)
7	Data Outlets (labs)	31
8	Data Outlets (labs)	32
9	Data Outlets (labs)	33
10	Data Outlets (labs)	34
11	Data Outlets (labs)	35
12	Data Outlets (labs)	36
13	Data Outlets (labs)	37
14	Data Outlets (labs)	38
15	Data Outlets (labs)	39
16	Data Outlets (labs)	40
17	Data Outlets (labs)	41
18	Data Outlets (labs)	42
19	Data Outlets (labs)	43
20	Data Outlets (labs)	44
21	Data Outlets (labs)	45
22	Data Outlets (labs)	46
23	Data Outlets (labs)	47 Security
24	Data Outlets (labs)	48 Card Access - Kantech

Patch Panel / Switch Port and Network Device Number for CCTV

Patch Panel / Switch Port and Network Device Number for DATA

Use 1' and 2' (shortest length patch cords pratical) from patch panel to switch

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1	PRELIMINARY / REVIEW	11-Oct-23
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Project Name:

Drawing Title:	
PORT LEGEND	
Drawn by:	Scale:
	N.T.S.
Date:	
11-Oct-23	IT.5

MAIN IT RACK, SERVER ROOM, LABS



Switch [C] CCTV only, *isolated from data network, unmanaged*

Meraki MS120 48P PoE Switch			
1	uplink to CCTV network (2nd flr)	25	PoE to Camera (#)
2	uplink to CCTV network (2nd flr)	26	PoE to Camera (#)
3	PoE to Camera (#)	27	PoE to Camera (#)
4	PoE to Camera (#)	28	PoE to Camera (#)
5	PoE to Camera (#)	29	PoE to Camera (#)
6	PoE to Camera (#)	30	PoE to Camera (#)
7	PoE to Camera (#)	31	PoE to Camera (#)
8	PoE to Camera (#)	32	PoE to Camera (#)
9	PoE to Camera (#)	33	PoE to Camera (#)
10	PoE to Camera (#)	34	PoE to Camera (#)
11	PoE to Camera (#)	35	PoE to Camera (#)
12	PoE to Camera (#)	36	PoE to Camera (#)
13	PoE to Camera (#)	37	PoE to Camera (#)
14	PoE to Camera (#)	38	PoE to Camera (#)
15	PoE to Camera (#)	39	PoE to Camera (#)
16	PoE to Camera (#)	40	PoE to Camera (#)
17	PoE to Camera (#)	41	PoE to Camera (#)
18	PoE to Camera (#)	42	PoE to Camera (#)
19	PoE to Camera (#)	43	
20	PoE to Camera (#)	44	
21	PoE to Camera (#)	45	
22	PoE to Camera (#)	46	
23	PoE to Camera (#)	47	to CCTV switch B, port 1
24	PoE to Camera (#)	48	to CCTV switch B, port 2



Switch [B] CCTV only, *isolated from data network, unmanaged*

Meraki MS120 24P PoE Switch			
1	uplink to switch C, port 47		
2	uplink to switch C, port 48		
3	PoE to Camera (#)		
4	PoE to Camera (#)		
5	PoE to Camera (#)		
6	PoE to Camera (#)		
7	PoE to Camera (#)		
8	PoE to Camera (#)		
9	PoE to Camera (#)		
10	PoE to Camera (#)		
11	PoE to Camera (#)		
12	PoE to Camera (#)		
13	PoE to Camera (#)		
14	PoE to Camera (#)		
15	PoE to Camera (#)		
16			
17			
18			
19			
20			
21			
22			
23			
24			

Patch Panel / Switch Port and Network Device Number for CCTV

Patch Panel / Switch Port and Network Device Number for DATA

Use 1' and 2' (shortest length patch cords pratical) from patch panel to switch

2	Revised / Updated	3-Nov-23
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Drawing Title:	
PORT LEGEND	
Drawn by:	Scale:
	N.T.S.
Date:	
11-Oct-23	IT.6

MAIN IT RACK, SERVER ROOM, LABS

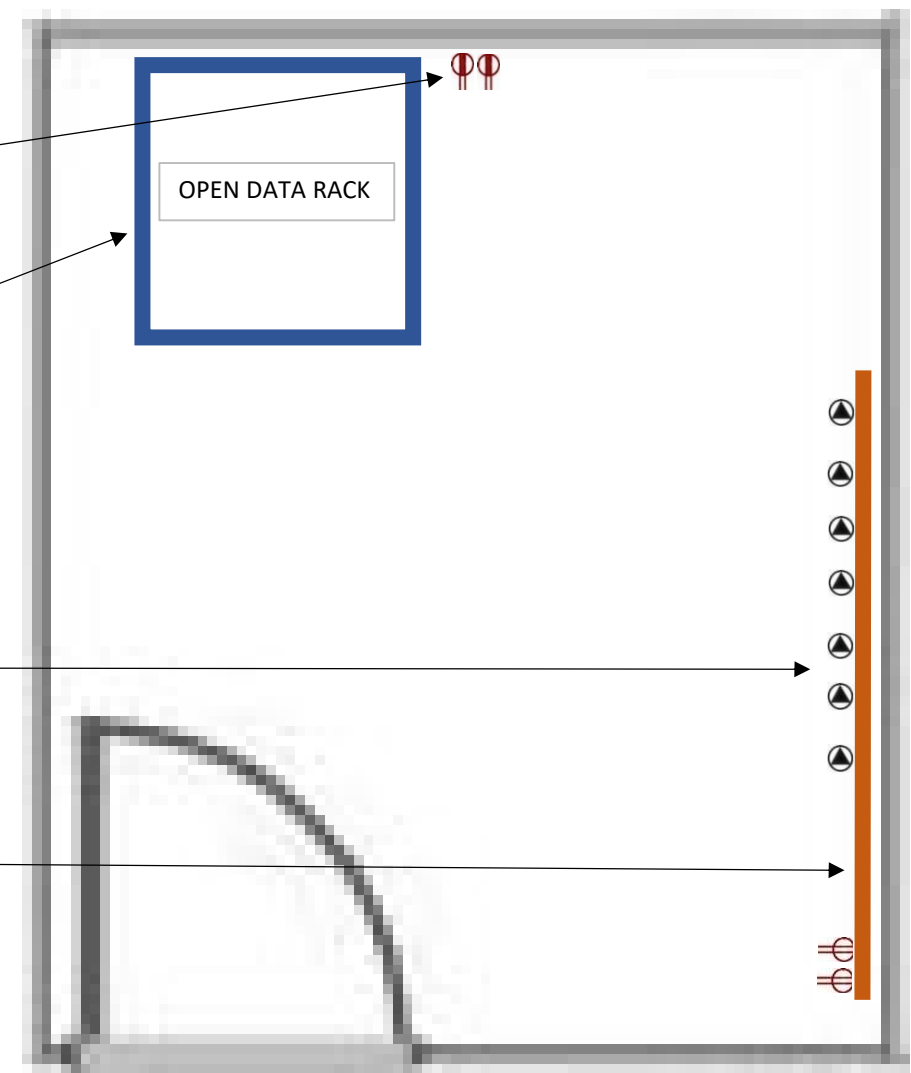
Electrical trade to provide 120V 20A t-slot quad receptacle at 12" AFF, additional quad receptacle at 48" AFF for a total of 4 duplex t-slot receptacles each on dedicated 120V 20A circuits.

Use open frame rack 45U (Hoffman EDR19FM45UCM2) bolted to floor c/w vertical and horizontal cable managers. Supply 2 x 1500VA UPS for network switches, 1 x 1500VA UPS for CCTV switches*.

Estimated load 3500W.

Electrical trade to install 7 x 4" square electrical device boxes on 120V dedicated cct immediately below plywood backboard, connect supplied 75VA LV transformers for Kantech access control system. Include 2 standard outlets on dedicated cct for intrusion alarm systems.

4'x8' 3/4" plywood backboard, mounted horiz. at 32" AFF for card access and security controllers.




* FINAL UPS SYSTEM AND SIZING TO BE DETERMINED

Power Requirements

- ⚡ Dedicated circuit 15A 120V duplex receptacle, to underside of backboard (30" AFF) *
 - ⚡ Dedicated circuit 20A 120V t-slot duplex receptacle at 12" AFF
 - ⚡ Direct connect 120V power, to underside of backboard (24-30" AFF) *
- * Can be on shared circuit per closet / room

IT rooms should be ventilated for heat extraction. This can be accomplished with an exhaust fan mounted in ceiling/wall at high level (fan can vent to plenum or adjoining common space, verify /w mechanical engineer incl. CFM requirements), controlled by a 120V reverse acting thermostat mounted at 6', set to 80deg F. There should also be an air inlet (louvred grill) installed near bottom of door, or thru wall at low level for fresh air in. The grill should be high security (re-enforced) and equipped with rodent screening.



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I.T. RACK, CABINETS

Drawn by:	Scale:
	N.T.S.
Date:	
11-Oct-23	IT.7

CCTV (4MP)*

- Exterior dome camera - wall mount
- Interior dome camera - ceiling mount
- Interior dome camera - wall mount

(existing, white)(DS-2CD2543G0-IS, white/black)(DS-2CD2543G0-IS, white/black)

- Use wall mounts (WM110) when required for horizontal placement of camera to achieve full panoramic view, verify with interior design drawings for any FOV (field-of-view) obstructions, mount cameras at approx. 9' AFF (min. 8', max. 10').
- Camera and wall mounts in white, unless black finish indicated on drawings

All cameras to be programmed for static IP, camera no. = last octet of IP address.

IP Range
Gateway
Subnet
DNS1
DNS2

Video retention hardware and LCD monitors (when required) c/w wall mounts supplied by owner, configured and installed by this contractor. This contractor to assist with final (remote) setup of components by third party system providers.

Existing camera re-cabled to new IT room

DATA (Hubbell Premise, Cat6)

- New Data (x1)
- New Data (x2)
- New Data (x4)
- Ceiling Mounted Wireless Access Point (wall mount at 10' when ceiling open to slab)

Install data outlets on open walls at 14" AFF (or match height of nearby power wall outlets). Refer to interior design drawings for counter height and other where indicated.

Data cabinet location. Open frame cabinet c/w vertical cable management, bolted to floor

- Data contractor to supply and install patch panels, jacks, patch cables. Terminate & Test
- Install and connect owner supplied IT equipment including switches, firewalls, AP's
- Coordinate with Deciem IT to verify inbound connection for remote systems setup
- Provide 3-pair 10GB (LC/LC) MM fiber link to fiber switch in second floor IT room.
- Provide 2 cat6 lines for CCTV switches to second floor IT room, daisy chain CCTV switches separate from network switches

AP Legend

Port	Serial
E3	
E4	
E5	
E6	
E7	
E8	
E9	
E10	
E11	
E12	
E13	
E14	
E15	
E16	
E17	
E18	
E19	
E20	
E21	
E22	
E23	
E24	
E27	
E28	

ACCESS / SECURITY (Kantech KT-400)

- Single Door Card Reader (KT-MUL-MT /w RCI 65U strike)
- Double Door Card Reader (/w strike), wiring provision made in door from frame to latch location, flexible armoured wiring transition from frame to hinge side of passive (fixed) door.
- Install readers at 34"-46" AFF (readers to match door handle height)
- Kantech KT-MUL-MT ioSmart Multi-Technology Smartcard Reader /w
- Kantech EntraPass go Pass. Seco-Larm SD-927PKC-NEQ Enforcer Wave-to-Open
- Sensor, English, No-Touch. Door Strike RCI 65U

Existing ADT security system to remain.

Power Outlets

- Duplex 15A 120V receptacle at 14" AFF unless noted *
- Duplex 20A 120V receptacle at 14" AFF unless noted *
- Direct connect 120V power (4" square box for 75VA trans.). Electrical contractor to connect 75VA LV transformers supplied by security contractor for card access controllers, single dedicated cct for all controllers, a total of 7+1 transformer (Hammond BF2F) connections (4" square j-boxes) required.
- Provide 3/4" plywood backboard horizontally installed at 32" AFF for card access controllers, install 4" 120V junction boxes for LV trans. on drywall at 24" AFF

Cabling

All LV cabling to be plenum rated (CMP). Data points and devices (incl. CCTV) to be CAT6. Leave 6' extra cable for devices, 20' at IT equipment rack. Run all cables in concealed wall and ceiling space, bundled and independently supported every 6' with j-hooks or approved LV cable slings. Maximum 20 cables per bundle.

Exposed cable below 12' to be concealed in EMT or wire mold. Use steel wire trays for open ceiling areas, installed at 12' to underside, 10' minimum.

For ceiling mounted CCTV and WAP devices leave cable loose in accessible ceiling space immediately above device location.

Do not install backboxes for wall mounted CCTV devices. These devices will require 3/4" plywood backing in wall. Plywood backing to be min 16"H and span stud opening, with 1-1/2" hole in center for cable. Run conduit from top of hole to ceiling cavity or wire tray.

Do not install backboxes for wall mounted data outlets and WAP devices, use industry standard single device open back LV brackets (4" plaster ring) fastened to metal stud, run conduit from top of bracket to ceiling cavity or wire tray.

For door card access systems, run cable set from each door to controller location. Bundle (1) cat6 cable (reader/sensor), (1) 18/2 cable (strike), (1) 22/4 cable (door sensor), each bundle clearly numbered to corresponding door. Run cables through wall and door frames for a fully concealed installation. Coordinate with door frame installer. Electrical contractor to provide conduit in wall to top of door frame (latch side), including to card reader location on wall.

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Drawing Title:

LEGEND / DETAILS

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Date:

11-Oct-23

Scale:

N.T.S.

IT.8