

ADDENDUM

No. 02 Date: 9/5/2024
Project No. 0020711.01 Attention: Leonard D'Souza
Project Name: Princess Margaret Cancer Centre
Stem Cell Transplant 2, MHC, MHDU, DSC
Address: University Health Network
610 University Avenue
Toronto ON

Issued By: Linda Vela

Distribution: Refer to the UHN Cover Letter

This Addendum forms a part of the Bidding and Contract Documents and modifies the original issued Bidding Documents (dated August 13, 2024) for the above titled project, as indicated below, and is hereby incorporated into the Contract Documents as part thereof.

Bidders are required to acknowledge receipt of this Addendum in the space provided on the Proposal/Bid Form.

The following architectural questions have been received by the Bidder(s) and the following answers are being provided to all Bidder(s).

1. (17) From Door and specialties provider - Roller shades - Please provide exterior window sizes.

Response: Measured height of existing windows in the Level 5 MHDU ramp area is +/- 82". The widths can be scaled from the floor plans. Existing window measurements will have to be verified on site. Refer to as-bult drawing A-A0-601 – North and East Building Elevations attached within.

2. (25) Please confirm the quantities for the louvers and shadow boxes at CW8 and CW9.

Response: CW8 and CW9 is not referenced in our drawings.

3. (26) Please provide sizes for CW11, besides CW9 with door E121.

Response: CW11 and CW9 is not referenced in our drawings.

4. (86) Notes 14&18 of demo plan D0102A requests the furniture to be removed, during site visit it was told that all loose furniture will be removed by the hospital, please clarify. If GC to include these items please provide a list of all furniture those are to be removed or consider this item under cash allowance.

Response: Loose furniture will be removed prior to mobilization.

5. (113) Is any of the work on floors 2, 5, & 10 that is to be done after hours?

Response: Excessive noise on L2 and L5 will be need to be done outside of patient care hours. Regular hours are Mon-Fri 8am-5pm. Chemo Daycare on Level 4 operates from Mon-Sat 8am-5pm as referenced in the construction control drawings. All of this work outside designated work areas will be required to be done after hours.

6. (114) Is all of the sanitary drainage work on the floors below (1, 4, and 9) to be done after hours? or are there areas in which we can work during the day?

Response: All of this work outside designated work areas will be required to be done after hours.

7. (115) For the hoisting of the temporary AHU, will be allowed to hoist off of University Ave? Are there time restrictions as to when we can hoist?

Response: Craning can occur on University Ave as long as there is a permit. It is up to contractor to develop craning and delivery strategies. University avenue is outside UHN property. Contractor must obtain at its own expense all permits and approvals prior to scheduling hoisting.

8. (116) Is there a phasing plan available?

Response: Refer to G0301.

9. We are assuming we are just performing the cut/cap/make safe work and that dropping/removal of all piping/ductwork/fixtures/equipment will be by others (including work in the mechanical room. Please confirm.

Response: Scope delineation is stipulated in the drawings and specifications, and is to be further coordinated amongst trades as required.

10. (119) We are assuming all abatement scope (including but not limited to the removal of the glass lab waste p-traps) will be by you.

Response: Abatement as summarized in Hazardous Building Materials Assessment, Investigation of Mold Growth and where noted in the contract documents including Division 2 of the spec is included in the scope. Unforeseen abatement discovered during construction will be covered by the cash allowance. All identified hazardous materials abatement is within the scope of the project.

11. (121) Please clarify if fire watch is to be carried by the general contractor.

Response: Fire watch to be carried by GC.

12. (124) Ref Wall and Corner Guards for UHN Princess Margaret - unable to find any markings of CG-1 on the drawings. Please let us know how to find the quantities required.

Response: Full height stainless steel corner guards to be provided at all outside corners. Refer to General notes on A01300 series. Assume +/- 42 in MHC, +/- 305 in MHDU, +/- 54 in DSC.

13. (131) We have found the signage details on pages 396-430 of the spec, but still need a signage schedule to complete a quote for this project

Response: Refer to A1400 series for the signage legend noting the type and locations of the signage. The UHN standards summarize the construction requirements for each sign type.

Type on Dwg	Type in UHN Guideline (Spec)
A.1	E3.1
A.2	E3.2
B.1	E2.1

B.2	E2.2
B.3	E1.2
B.4	E7.1
B.5	E6.1
C.1	H1.1 (GN)
C.2	H1.1 (GN/Accessible)
E.1	A1.3
E.2	A1.5
E.3	B1.1

14. (133) Please provide the cut sheets for the following FFE items.

Response:

FFE #	Item Name	Information Location
• 3446-000	bracket monitor wall	UHN provided
• 5177-000	clock, analog, wall	UHN provided
• 6391-000	toilet paper dispenser	Refer to UHN Guidelines (Page 194)
• 6470-000	sanitary napkin disposal	Refer to UHN Guidelines (Page 194)
• 6529-000	telephone wall	UHN provided
• 9122-040	u/c pharmaceutical fridge	Cut sheet enclosed
• 9210-000	room reservation tablet	UHN provided
• C-450170	paper towel dispenser	Refer to UHN Guidelines (Page 194)
• C-456405	patient queue system	UHN provided
• C-461266	cubicle curtain	Refer to UHN Guidelines (Page 193)
• C-461279	HK shelf wall mount	Per Div 10
• 5177-000	clock, analog, wall	UHN provided
• 5185-000	floor copier	UHN provided
• 5704-000	clock, analog, wall	UHN provided
• C-452572	track ceiling cubicle curtain	DSC staff coat room only, Per Div. 10
• SCR-2A1D7	screen privacy fixed	Cut sheet enclosed
• SCR-32DFA	screen privacy fixed	Cut sheet enclosed
• SCR-39BA6	screen privacy fixed	Cut sheet enclosed
• SCR-66A5C	screen privacy fixed	Cut sheet enclosed
• SCR-92017	screen privacy fixed	Cut sheet enclosed
• SCR-96683	screen privacy fixed	Cut sheet enclosed
7985-000	WC mirror	Per Div 10, contractor provided contractor installed

ATTACHMENTS: The following is a list of the modified documents and a brief description of what has been modified.

REFERENCES (AS BUILT DRAWINGS & CUTSHEETS):

A-A0-601 – NORTH AND EAST BUILDING ELEVATIONS

REFR_Spc_REF4P_6455

Silentia

MECHANICAL:

- A. Incorporate the following Mechanical Addendum 1, prepared by Quasar Consulting Group, dated September 05, 2024 attached to this Addendum 02.**

ELECTRICAL:

- B. Incorporate the following Electrical Addendum 1, prepared by Quasar Consulting Group, dated September 05, 2024 attached to this Addendum 02.**

Total number of pages: 4

This Addendum consists of 50 pages (including ALL attachments, excluding UHN cover).

REF4P ADA-Compatible Performance Plus

medical-grade undercounter refrigerator



Solid door standard

Optional glass door

Model configurations				
Controls	Hinge location ¹	Keypad	Door configuration	Item number
LED	right	no	stainless	REF4P-OR-00-00
			glass	REF4P-OR-00-GD
	left	yes	stainless	REF4P-OR-KP-00
			glass	REF4P-OR-KP-GD
	right	no	stainless	REF4P-OL-00-00
			glass	REF4P-OL-00-GD
left	yes	stainless	REF4P-OL-KP-00	
		glass	REF4P-OL-KP-GD	

¹ As facing the unit.

Options and accessories

Glass door

Keypad and electronic lock with battery back-up

Replacement NTC probe with NIST-traceable certificate of calibration (item# 01077841)

Additional shelf (1) (item# 01059484)

Drawer accessory kit (1 drawer, glide hardware and flush front panel) (item# 01053644)

Drawer accessory kit (2 drawers, glide hardware and flush front panel) (item# 01067750)

Temperature surveillance module (includes alarm, 6.00" (15.24 cm) chart recorder, remote contacts) (item# 00168674)

Universal ADC-compatible bracket (for all medication dispensing system locks) (item# 01059096)

Glycerine, 16 oz (item# 00959296)

Stacking kit (Performance Plus on Performance Plus) (item# 01054006)

Stacking kit (REF/FZR Series on Performance Plus) (item# 01067172)

Pedestal base, 23.75" wide x 24.00" deep x 17.00" high (60.3 x 61.0 x 43.2 cm), stainless (item# 01059120)

Casters (set of 4 with spacers) (item# 01053636)

Wall mount kit (item# 00153700)

Seismic bracket kit (item# 01059104)

NO/NC dry contacts for connection to remote alarm systems (item# 01092022)

Features

Superior temperature performance

- custom-designed microprocessor temperature controller
- air-cooled refrigeration system with heavy duty 1/5 horsepower compressor
- environmentally friendly, non-CFC R134a refrigerant
- programmed automatic defrost every 8 hours
- cabinet-wide temperature remains within ± 1 C (1.8 F), even with frequent door openings

Convenience and security

- fits below 34.00" (86.4 cm) ADA countertops without casters
- refrigeration system settings accessed through door-mounted controls
- exterior LED digital temperature display available in user-programmable C or F with choice of product or air temperature
- user-programmable audible and visual high/low alarms
- mechanical lock – mounted on side of door
- lockable controller so set points cannot be inadvertently changed
- flexible internal storage configuration (drawers and shelves interchangeable)
- Agion[®] antimicrobial and UV product protection added to molded plastic façade¹

Durability and serviceability

- stainless steel construction on exterior and interior
- two epoxy-coated wire shelves standard
- back wall evaporator and front ventilation (no top, back or side clearance required)
- heavy-duty edge-mount self-closing hinges
- right or left-hinged door with integral handle and magnetic gasket door closure provides ease-of-use

Warranty

- 2 year parts and labor
- 5 year compressor parts only
- optional extended one year warranty (item# EW12)
 - 3 year parts and labor
 - 5 year compressor parts only
- optional extended three year warranty (item# EW36)
 - 5 year parts and labor

Certifications



Commercial Refrigerator
SAFETY US/CA – SA12646

¹ Disclaimer: Antimicrobial protection is limited to the plastic façade.

Specification

Nominal capacity	3.9 cu ft (110 L)
Ventilation clearance	0.0" for top, side and back clearance

Exterior

W1 Width	23.75" (60.3 cm)
D1 Depth cabinet	25.62" (65.1 cm)
Depth with façade	27.00" (68.6 cm)
H1 Height	31.38" (79.7 cm)
Height with casters	33.88" (86.1 cm)
Door swing	24.00" (61.0 cm) from front of cabinet, 180° from closed

Interior

Width	19.75" (50.2 cm)
Depth	18.32" (46.5 cm)
Height	18.94" (48.1 cm)
Storage system	(2) 18.10" x 19.10" (46.0 x 48.5 cm) epoxy-coated steel shelves

Door configurations

Door	solid, foamed stainless 21.50" x 22.51" x 1.63" (54.6 x 57.2 x 4.0 cm)
Optional glass door	triple pane, low E glass window dimensions 16.30" x 10.90" (41.4 x 27.7 cm)
Door lock	cylinder lock
Door handle	molded into front façade
Door hinges	edge-mount, self-closing, right or left
Gasket	magnetic

Electrical

C1 115 V/60/1 electrical	4.1 run load amps, NEMA 5-15P 90° hospital-grade plug. PVC, SJT, 16GA, 7' (2.1 m) cord.
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Maximum size of branch circuit overcurrent device 15 amps dedicated circuit

Controls

Temperature display	standard 7 segment LED
Battery back-up on KP (keypad) models only	(8) AA batteries provide power to keypad, electronic lock and controls
C2 3rd party probe access	rear access port
Factory preset	4.4 C
Product simulation bottle	(1) 60 ml
Programmable operating range	2.2 to 10 C (36 to 50 F)

Alarming

High and low product temperature alarm	audible and visual, user programmable set points in C or F
Probe error alarm	audible and visual — product temperature probes, refrigeration and defrost
Alarm mute	user selectable
Alarm volume	0 -10 adjustable
Min/max temperature log	shows highest and lowest product temperature since last reset occurred

System performance

Refrigerant and charge	R134a refrigerant, 9 oz
Energy consumption	1.8 kWh/day

Nominal heat rejection ¹	415 BTU/hr (122 W)
Max heat rejection	2185 BTU/hr (640 W)

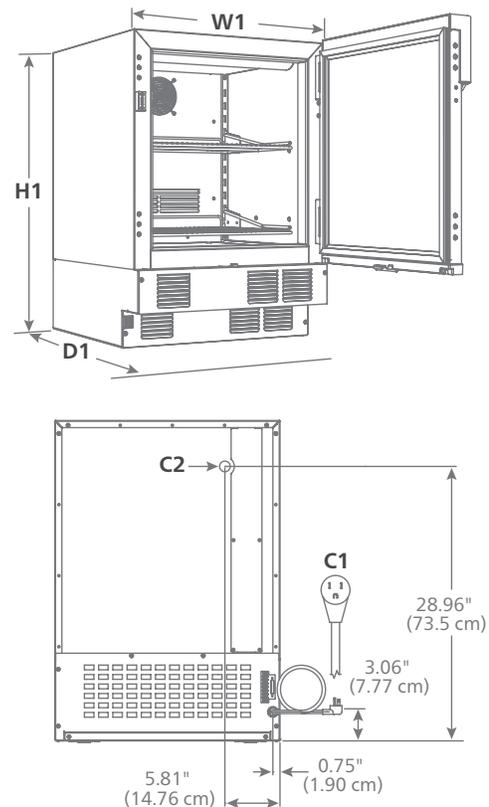
Shipping

Approximate net weight	170 lb (77 kg)
Approximate ship weight	205 lb (93 kg)

NOTE: For indoor use only

SHORT FORM SPECIFICATION: Performance Plus undercounter refrigerator with choice of solid stainless steel or glass door fits under 34.00" (86.4 cm) ADA-height counter with 3.9 cu ft (110 L) of nominal capacity. Includes (2) epoxy-coated wire shelves, adjustable in 1.50" (3.81 cm) increments. Environmentally responsible R134a forced-air cooled refrigeration system. Top-mounted controls display product or air temperature in user-selectable C or F. Integral high and low temperature alarming. Storage area insulated with CARB compliant non-HFC foam. 7' (2.1 m) power cord with NEMA 5-15P 90° hospital-grade plug. UL and CUL listed.

Dimensional drawing



¹ Nominal heat rejection means heat rejection from a refrigerator in a 75 F (24 C) ambient with proper ventilation, an empty cabinet, default settings, default defrost schedules/durations, and nominal supply 115-120 VAC.

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REF4P undercounter refrigerator

6455-202303 | © Follett Products, LLC

801 Church Lane | Easton, PA 18040, USA
1.800.523.9361 | 1.610.252.7301 | follethealthcare.com





MADE BY HSTD © 2019-2023 SILENTIA AB



Specification



FOLDING SCREEN 11 PANELS

- WALL, STANDARD
- COLOR, WHITE

LENGTH 11 PANELS 9'

HEIGHT 6'1"

DEPTH FOLDED 8.7"

WIDTH FOLDED 9.8"

WALL DISTANCE 0"

WEIGHT 54 LBS

PRODUCT ART. NO. 06311-W

ACCESSORIES ART. NO. -

Project Name:	UHN PM Stem Cell Transplant Phase II Part A	Date Issued:	September 5, 2024
Quasar Project #:	HC-21-058		
Distribution			
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Addendum #:	M-1		
Revision #:	0		

This Addendum forms part of the Contract Specifications and Drawings, and modifies the Bidding Documents, with Amendments and Additions noted below. This Addendum shall be added to the front of the specifications as issued. Bidders shall acknowledge receipt of this Addendum in the space provided in the Bid Form and include in bid amount.

This addendum includes modifications to the drawings and specifications as summarized below. Unless otherwise noted, all drawings listed below are attached herewith. Changes to drawings are highlighted with a revision bubble; include for all changes highlighted in the revision bubbles including, but not limited to, those items described below. Answers to Requests for Information below shall form part of the project specifications and are identified in bold following QCG (Quasar Consulting Group).

Requests for Information:

1. (78) Please confirm VFD’s will be supplied & Installed by others.

QCG M: (78) VFDs are to be supplied and installed by Mechanical Contractor in accordance with the Mechanical Schedules and Mechanical Spec Section 20 05 13.13.

- 2.(94) Please clarify whether steam HX-1,2 are supposed to be complete pre-piped packages or loose heat exchanger with loose control valve and trap? If it needs to be a complete package, please provide a complete specification on the design.

QCG M: (94) Heat exchangers, control valves, traps and accessories are to be loose and not pre-piped packages.

3. (97) Detail 23 57 00.01 on drawing M7008 shows 1 steam control valve for heat exchanger. On drawing M7013, it shows 1/3 and 2/3 steam valve configuration for each heat exchanger. Please clarify.

QCG M: (97) Two control valves are required per drawing M7013. Control valves should be sized for 1/3 and 2/3 capacity. Detail on M7008 will be updated as part of Mechanical Addendum M-1.

4. (99) 2 isolation exhaust fans are shown in detail 2 on drawing M7501. There is no isolation exhaust fan in mechanical equipment schedule. Please clarify.

QCG M: (99) This control sequence was included by error and will be removed in Mechanical Addendum M-1.

5. (101) Control schematic for AH-46/47 (B620 AH-001/002) is shown in drawing M7503. Please confirm AH-46/47 is just a different name for AH-001 and AH-002 in B620.

QCG M: (101) Correct, AH-46/47 is the current label for the units on the existing UHN control system, and is in reference to AH-001 and 002. AH-46/47 tags are to be maintained on BAS system.

6. (102) VAV/CAV is shown on drawing M7505, M2305A and M2305B. But they are not on drawing mechanical schedule drawing M6000. Please confirm whether they are venturi valves too.

QCG M: (102) VAVs are to be provided as tagged. Schedule will be added as part of Mechanical Addendum M-1.

7. (103) Do reheat coil and FCU controllers have to be mounted on the wall?

QCG M: (103) It is assumed this is in reference to thermostats which control the reheat coils and FCUs. Thermostats are to be located on walls as per Specification section 25 05 01.

8. (104) 3 unit heaters are shown on mechanical schedule drawing M6000. But they cannot be located on floor plan. Please advise where they are located.

QCG M: (104) Unit heaters are located in the shelled space on mechanical drawing M2405A. Unit heaters are tagged as UH-01, UH-02, and UH-03 on the floor plan. Unit heater tags on mechanical schedule will be updated for clarification as part of Mechanical Addendum M-1.

12. (120) Will you be hiring Swisslog directly for the Pneumatic tubing scope or do you want us to carry them as a sub?

QCG M: (120) Pneumatic tube scope is to be provided and coordinated by Mechanical Contractor as per Specification Section 14 92 00, Article 3.01.1. Mechanical Contractor is to carry Swisslog for Pneumatic tube system, as specified.

Changes to Drawings:

1. Drawing M6000 – MECHANICAL SCHEDULES

- Added Air Terminal Unit schedule, as indicated.
- Revised Unit heater tags on Hydronic Unit Heater Schedule, as indicated.

2. Drawing M7008 – MECHANICAL DETAILS VIII

- Revisions to steam heat exchanger detail 23 57 00.01, as indicated.

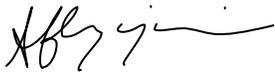
3. Drawing M7013 – HEATING WATER SCHEMATIC

- Revisions to heating water schematic, as indicated.

4. Drawing M7501 – MECHANICAL CONTROL SEQUENCE II

- Removed Control sequence “23 34 00.03 – PARALLEL VARIABLE SPEED FAN – DAMPER INTERLOCK W/ HEPA UNIT SEQUENCE OF OPERATION”, as indicated.

Quasar Consulting Group



Alexandra Blagojevic, P.Eng.
Sector Lead

**Princess Margaret
Cancer Centre Stem Cell
Transplant 2**

**Part B
(MH, MHDU, DSC)**

CANNONDESIGN

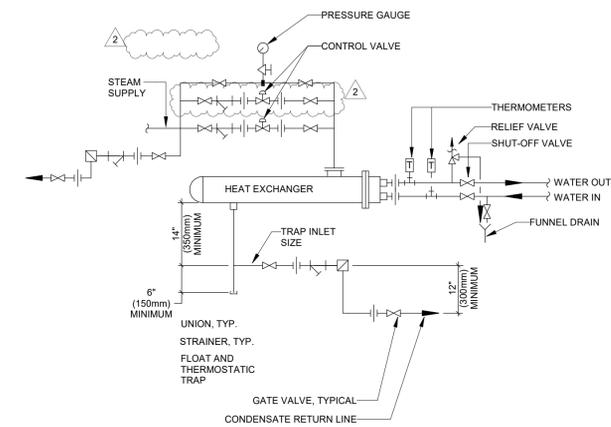
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NOTE:
1. MAINTAIN ADEQUATE CLEARANCE FOR TUBE REMOVAL
2. DIMENSIONS ARE TYPICAL

2	ISSUED FOR ADDENDUM M-1	2024-09-05
1	ISSUED FOR TENDER	2024-08-14

Rev.	Description	Date
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Drawing Title:

**MECHANICAL DETAILS
VIII**

1 : 1

Project No.: 0020711.00 Checked by: Checker

M7008

23 57 00.01 STEAM HEAT EXCHANGER

SCALE: 1 : 1

**Princess Margaret
Cancer Centre Stem Cell
Transplant 2**

**Part B
(MH, MHDU, DSC)**

CANNONDESIGN

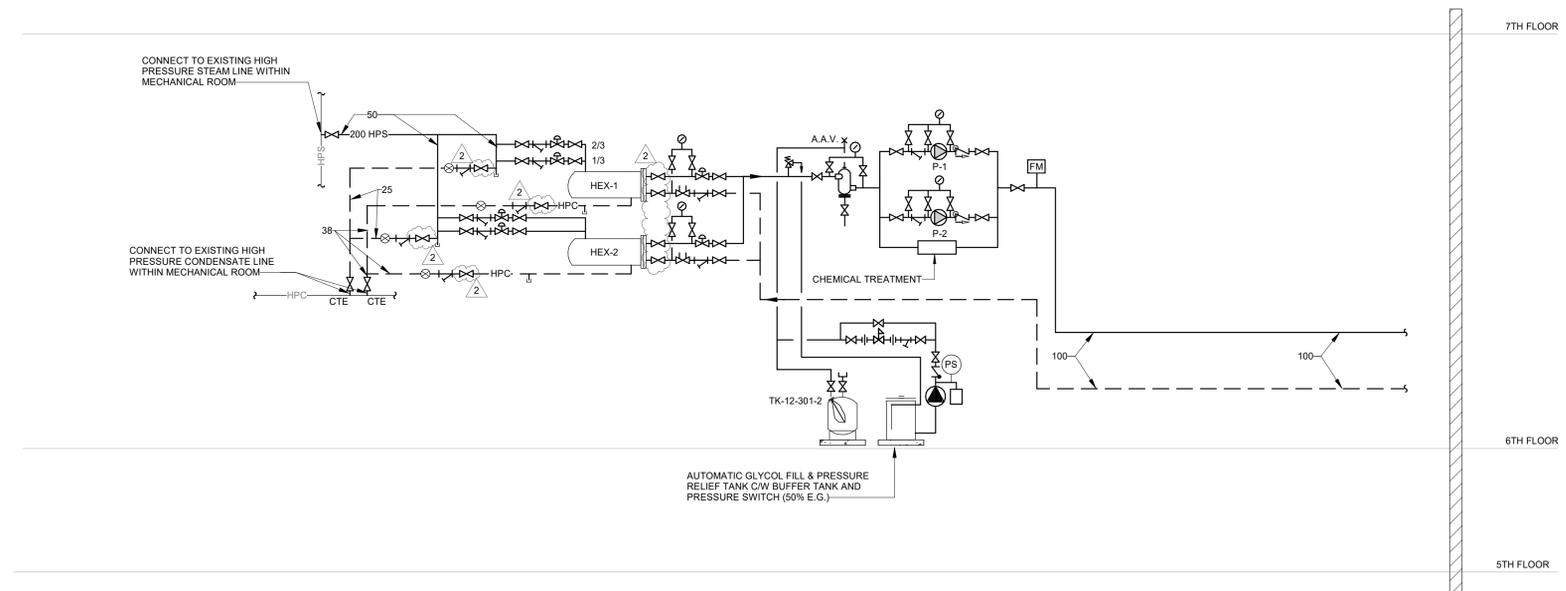
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2	ISSUED FOR ADDENDUM M-1	2024-09-05
1	ISSUED FOR TENDER	2024-08-14

Rev.	Description	Date
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Drawing Title:

**HEATING WATER
SCHEMATIC**

1 : 1

Project No.: 0020711.00 Checked by: Checker

M7013

1 HEATING WATER SCHEMATIC
SCALE: 1 : 1

**Princess Margaret
Cancer Centre Stem Cell
Transplant 2**

**Part B
(MH, MHDU, DSC)**

CANNONDESIGN

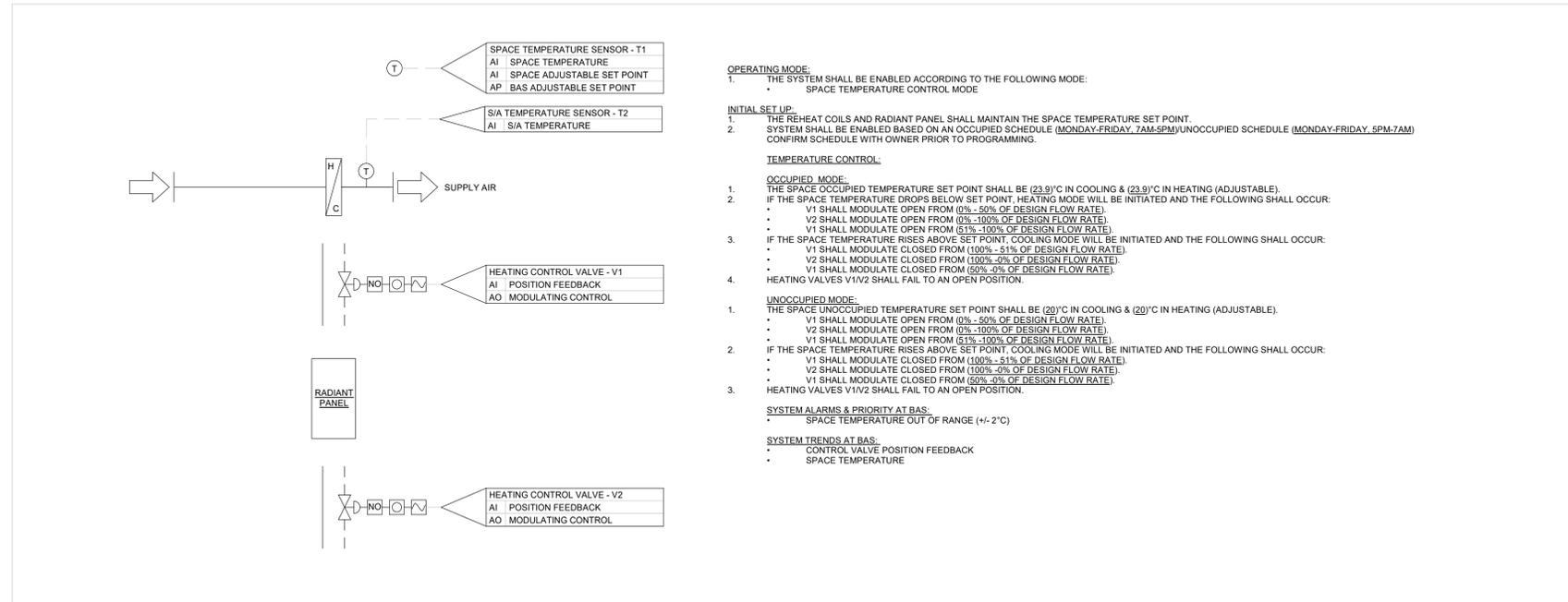
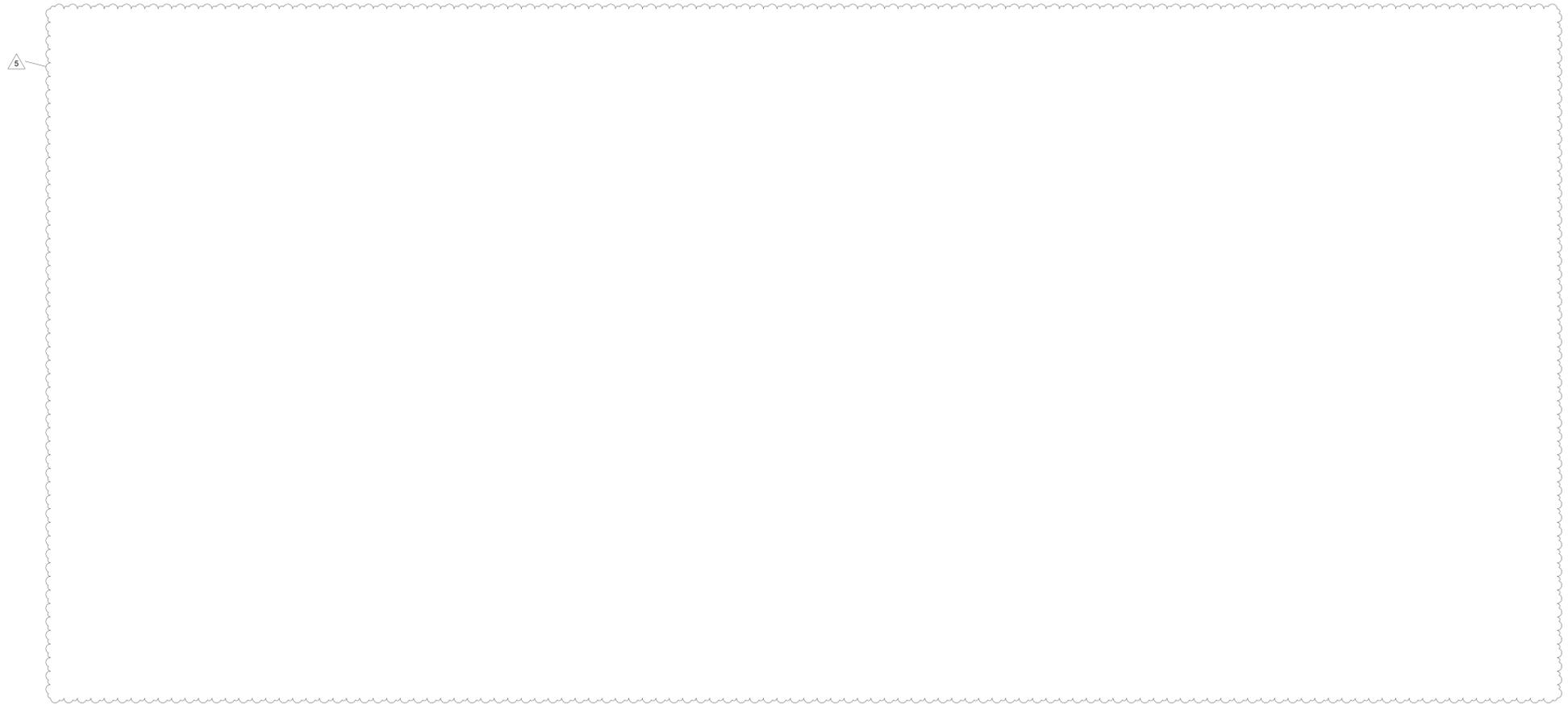
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23 36 00.04 - RE-HEAT & RADIANT PANEL CONTROL SEQUENCE
SCALE: N.T.S.

Rev.	Description	Date
5	ISSUED FOR ADDENDUM M-1	2024-09-05
4	ISSUED FOR TENDER	2024-08-14
3	ISSUED FOR BUILDING PERMIT	2023-12-19
2	ISSUED FOR MOH 4.1 SUBMISSION	2023-09-25
1	ISSUED FOR 95% CD SUBMISSION	2023-09-06

Rev.	Description	Date
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Drawing Title:

**MECHANICAL CONTROL
SEQUENCE II**

N.T.S.

Project No.: 0020711.00 Checked by: Checker

M7501

Project Name:	UHN PM Stem Cell Transplant Phase II Part B	Date Issued:	September 5, 2024
Quasar Project #:	HC-21-058		
Distribution			
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Addendum #:	E-1		
Revision #:	0		

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Requests for Information:

1. (46) Reference is made to drawing# E4106 & E4102 & E4002- - The source for panel 5ERP01 is not matching with what is shown on the single line diagram E4102 and the note#5 on drawing E4002.

QCG E: (46) The Drawings has been reviewed and E4106 has been revised to the proper source for 4EDP01 which is the source panel for 5ERP01. Lastly, Revised DWG # E4002 key note #4 new panel name "5VERP01" to "5ERP01". Refer to updated E4002 issued as part of Addendum E-1.

2.(47) Where are the locations of panel PP-5 and RP-N5 shown on single line diagram E4005?

QCG E: Location can be found in existing elec. Room 5-ELEC 1- 27 on DWG# E1105A. Refer to updated E1105A issued as part of Addendum E-1.

3. (48) What is our electrical demolition scope of work, specifically on ceilings and partitions/walls? Is it to cut & make safe only and the rest by demolition contractor?

QCG E: (48) Refer to electrical demolition plans. Each level has the level specific detailed demolition scope of work.

4. (49) There are some new electrical panels to provide at 6th floor. Are these scope of work under MHDU's category?

QCG E: (49) These 6th floor new Panels are serving the new Mechanical Air Handling Unit located in level 6, which in turn is servicing MHDU

5. (50) Drawing #E4102- As per note#1- we assume Panel 2ELR01 is to be tagged as 2ELP01. Please revise

QCG E: (50) The Comment has been reviewed and E4102 has been revised and "2ELR01" has been updated to "2ELP01"on the single line diagram, note 1 is correct. Refer to updated E4102 issued as part of Addendum E-1.

6. (51) Where is the location of room 6-707 where the MCC-06-01E is situated? Is the drawing E0106 correctly showing the location of MCC-06-01E?

QCG E: (51) Refer to Electrical KeyPlan - level 06 in E0106. as this shows the location of the existing MCC-06-1E in room 6-707

7. (53) During site visit, we were told that JCI is the Security System Vendor. We have contacted JCI and came to know that JCI is no longer a security system provider for Princess Margaret. Please provide the contact info for new security system vendor.

QCG E: (53) Jayson Warrilow, Account Executive, Enterprise Commercial Sales, Securitas Technology, Mobile: +1 (647)-236-1458
www.securitastechnology.com

8. (56) Drawing E2102, New IT Rack & PDU are required. Please provide specifications of the required PDU.

QCG E: (56) UHN will procure the PDU via UHN Digital team.

9. (58) Video Surveillance Communications Conductors and Cables - Section 27 15 01.13 specifies CAT6 cable plenum rated whereas Appendix E-1, Section 4.4 specifies CAT6A Cabling for Video Surveillance.

Please confirm following

- a) Type of cable we have to provide CAT6 or CAT6A on site?
- b) Is cable we have to provide should be plenum rated?
- c) Is conduit required for plenum rated cable?
- d) Or non plenum rated cable with conduit we can provide?
- e) Are J type hooks permitted to use on site & in which area with plenum rated cable?

QCG E: (58)(a) As Per UHN Design Manual listed on Appendix E-1 the type of cabling will be CAT6A.

(b) The Cat-6A cabling shall be be plenum rated.

(c) Conduits may be required if cabling is routed in wall cavaties with the required for Plenum rated cabling.

(d) Plenum rated cabling and associated pathways as described above.

(e) J Hooks are permitted as an acceptable pathway with plenum rated cabling.

Revised specification 27 15 01.13 issued as part of Addendum E1.

10. (59) Need specifications for Security Access Control System & Video Surveillance CCTV System

(59) Spec sections are included in the tender package. Refer to:

28 01 20.71 - Revisions and Upgrades of Video Surveillance,

28 01 10.71 - Revisions and Upgrades of Access Control

11. (60) Section 28 01 20.71 Revision & upgrades of Video Surveillance asks to refer to Service Master Agreement of UHN. Please provide same, since it is not included in tender documents.

QCG E: (60) Refer to 4.3.8.5 of the appendix E-1 which is part of the original tender documents.

12. (65) Intercom System found on floor plans for Power & Systems drawings E2102, E2105A, E2105B & E2210. Tender Documents do not include such information. Please provide specifications for same.

QCG E: (65) Provide snippet of location of intercom system in question,

13. (66) Any existing basket type cable tray already installed on 2nd, 5th & 10th floors which we can use for data / com, access control & CCTV, Nurse Call or any other low voltage cabling. Pls. confirm.

QCG E: (66) Existing Cable Tray may not be present. Provide J hooks as means of cabling pathway.

14. (69) Clock system found on floor plans for Power & Systems drawings E2102, E2105A, E2105B & E2210. Tender Documents do not include such information. Please provide specifications for same.

QCG E: (69) Most clock are battery operated, Electrical only provide, power provisions for where non battery operated clocks are used. There is no centralized clock system, only power provisions where shown. Clocks are provided by UHN.

15. (70) Spec 28 01 80.81 requests for extra stock material for various FA Devices. Pls. specify quantity require for each device.

QCG E: (70) spec section 28 01 80.81 1.06 ask to provide an additional (5) of each of the fire alarm devices (refer to 28 01 80.81 1.06.1) as directed during construction. Unused extras to be turned over to UHN for future use.

16. (71) Drwgs E0103 & E0104 mentions existing FA Panels to be replaced by new panels (Total 3). Pls. confirm make & system used on site of existing panels to be replaced by new one, in order to contact respective manufacturer for system reprogramming.

QCG E: (71) Fire alarm panel shown on E0101, E0103 AND E0108 are existing fire alarm panels. The scope work only includes updating these fire alarm panels to suit new fire alarm circuits. Note added to clarify this scope of work on E0101, E0103, E0108 as part of Addendum E1.

17. (72) Found existing FA System of Simplex during site visit. Please clarify following points regarding existing & new fire alarm systems.

a) Section 28 01 80.71 Revisions and Upgrades of Fire Detection and alarm, specifies JCI as system supplier whereas Section 28 01 80.81 Replacement of Fire Detection and Alarm specifies number of FA System Suppliers such as Simplex, Notifier, Chubb Edwards as well as Mircom. Pls. clarify how this is applicable? And which system supplier we have to use for example, Simplex since they are already on site. Pls. confirm.

b) Are new FA Devices from any one out of this system suppliers? Or we have to provide only JCI throughout the project? Pls. confirm.

QCG E: (72) Existing System is Simplex (JCI). Confirmed only include Simplex (JCI) services. Confirmed Section - 28 01 80.81.2.02 should only apply Simplex (JCI). Revised specification to be issued as part of Addendum E1.

18. (73) Is Hospital Grade Receptacle Testing required for this project? If yes, who can carry out this work? Pls. issue approved vendors list with specifications.

QCG E: (73) As Part of Specification section 26 27 26 wiring devices 3.04 under field quality control requires the testing of each installed receptacle not just hospital grade, this task is to be done by the electrical contractor.

19. (74) Section- 28 01 80.71- 3.03.9- If we need to provide temporary fire alarm devices during renovation, please provide the list for them.

QCG E: (74) If Temporary Fire Alarm devices are needed during renovation, the temporary fire alarm should match the quantity and functionality of the existing fire alarm. If fire alarm system cannot be maintained, contractor is responsible to provide the required fire watch.

20. (75) Section- 28 01 80.81-2.01 & 2.02- According to section 28 01 80.71-2.01.4, the existing fire alarm system is Simplex (JCI). Please confirm if we need to only include JCI services. Additionally, Section-28 01 80.81.2.02 should apply only to Simplex (JCI). Please confirm.

QCG E: (75) Existing System is Simplex (JCI). Confirmed only include Simplex (JCI) services. Confirmed Section - 28 01 80.81.2.02 should only apply Simplex (JCI). Revised specification to be issued as part of Addendum E1.

21. (76) The following sections are asking to provide Extra stock materials & spare parts. Please confirm if we have to include all of them or if you can provide one consolidated list.

- 28 01 80.81-1.06
- 28 46 25-1.06
- 28 46 31-1.05
- 28 46 31.31-1.05
- 28 46 31.41-1.05
- 28 46 41-1.06
- 28 46 51-1.05
- 28.46.51.08-1.05

QCG E: (76) Include for all extra stock and spare parts as specified in spec section 28 01 80.81-1.06,28 46 25-1.06,28 46 25-1.06, 28 46 31-1.05, 28 46 31.31-1.05, 28 46 31.41-1.05,28 46 41-1.06,28 46 41-1.05,28.46.51.08-1.05 ask to provide an additional (5) of each of each of the fire alarm devices or (3) of each type of signaling device as directed during construction. Unused extras to be turned over to UHN for future use.

22. (81) Please confirm the specifications for 5LT06A found on E2205B(Level 5) in the Washroom 5-837A. This fixture type is not listed on the Luminaire scheduled on E6000. (screen shot illustration is being emailed)

QCG E: (81) The Drawings have been reviewed and luminaires should be 5LT04A INSTEAD 5LT06 AND 5LT06A FOR NEGATIVE PRESSURE WASHROOMS, the drawing has been refer to addendum E-1 for updated E2205A AND E2205B

23. (110) Some panel schedules such as for panels 5ERP01, 5ERP02, 5ERP03 are not matching with the notes (42 cct panels instate of 84cct) on single line diagram E4102. Suppliers/Manufactures use panel schedules for pricing electrical panels. Please clarify if the panel schedules need any revisions

QCG E: (110) Panel Schedules are correct, notes on SLD will be revised to remove number of circuits, refer to panel schedule for total number of circuits. RevisedE4102 will be reissued as part of Addendum E1.

Changes to Specifications:

1. **Refer to Specifications section 27 15 01.13 titled "Video Surveillance Communications Conductors and Cables"**
 - a. In article 1.02 titled "Related Requirements" modified sentence .2 as shown below:
"Appendix E-1 Section 4.3.8"

2. **Refer to Specifications section 28 01 10.71 titled "Revisions and Upgrades of Access Control"**
 - a. In article 2.01 titled "Existing Systems" added sentence .2 as shown below:
"Existing Manufacturer Contact Information: (Jayson Warrilow, Securitas Technology, M: 647-236-1458)"

3. **Refer to Specifications section 28 01 20.71 titled "Revisions and Upgrades of Video Surveillance"**
 - a. In article 2.01 titled "Existing Systems" added sentence .3 as shown below:
"Existing Manufacturer Contact Information: (Jayson Warrilow, Securitas Technology, M: 647-236-1458)"

4. **Refer to Specifications section 28 01 80.81 titled "Replacement of Fire Detection and Alarm [NewAddrDevices]"**
 - a. In article 2.02 titled "Manufacturer" Modified .1 as shown below:
"The System shall be Simplex Grinnell 4100ES Series"

5. **Refer to Specifications section 28 49 00.00 titled "Electronic Personal Protection Systems"**
 - a. In article 1.01 titled "Summary" Modified section .2.1 to refer to "Appendix E-1 Section 4.2.16.6"

This specification now forms part of the contract documents.

Changes to Drawings:

1. **Drawing E-0101 – ELECTRICAL - 1ST FLOOR DEMOLITION & NEW WORK PLAN (MH)**
- Modification Clouded in Compliance with RFI question (71)
2. **Drawing E-0103 – ELECTRICAL KEY PLAN -LEVEL 03 (MHDU)**
- Modification Clouded in Compliance with RFI question (71)
3. **Drawing E-1108 – ELECTRICAL KEY PLAN -LEVEL 8 (DSC)**
- Modification Clouded in Compliance with RFI question (71)
4. **Drawing E-1105A – POWER & SYSTEMS-DEMO WORK LVL5A MHDU**
- Modification Clouded in Compliance with RFI question (47)
5. **Drawing E-2205A– LIGHTING - NEW WORK LVL 5A – MHDU**
- Modification Clouded in Compliance with RFI question (81)
6. **Drawing E-2205B– LIGHTING - NEW WORK LVL 5B – MHDU**
- Modification Clouded in Compliance with RFI question (81)
7. **Drawing E-4002 – SINGLE LINE DIAGRAM – DEMOLITION – BUILDING 610 LEVEL 02 & LEVEL 05 (MH & MHDU)**
- Modification Clouded in Compliance with RFI question (46)
8. **Drawing E-4102– SINGLE LINE DIAGRAM – NEW – BUILDING 620 LEVEL 02 & LEVEL 05 (MH & MHDU)**
- Modification Clouded in Compliance with RFI question (110)
9. **Drawing E-4105 – SINGLE LINE DIAGRAM – NEW – BUILDING 620 LEVEL 02 & LEVEL 05 (MH & MHDU)**
Modification Clouded in Compliance with RFI question (110)
10. **Drawing E-4110– SINGLE LINE DIAGRAM – NEW WORK BUILDING 620 LEVEL 10 (DSC)**
- Modification Clouded in Compliance with RFI question (110)

Quasar Consulting Group



Jomuel Estranero, P.Eng.
Electrical Engineer

1 General

1.01 SECTION INCLUDES

- .1 Cabling requirements for IP based CCTV cameras.

1.02 RELATED REQUIREMENTS

- .1 Division 27 – Communications.
- .2 Appendix E-1 Section 4.3.8

2 Products

2.01 OWNER-FURNISHED PRODUCTS

- .1 New IP cameras, and associated equipment shall be supplied and installed by others under a separate contract.
- .2 This contractor shall be responsible for coordinating rough-in requirements.

2.02 CABLING

- .1 Plenum rated Category 6 cabling in accordance with Division 27.

3 Execution

3.01 INSTALLATION

- .1 In accordance with sections of Division 27.
- .2 Conduits may be required if cabling is routed in wall cavities with the required for plenum rated cables.
- .3 J Hooks are permitted as an acceptable pathway with plenum rated cables.

End of Section

1 General

1.01 SECTION INCLUDES

- .1 Modifications to existing access control system, including provision of new hardware, software licences, etc. to make a complete and functional system.

1.02 RELATED REQUIREMENTS

- .1 Section 28 10 00 – Access Control.
- .2 Appendix E-1 Section 4.3.7

1.03 WARRANTY

- .1 All new material and equipment furnished under this section shall be free from defects and shall remain so for a period of at least one (1) year from the date of acceptance.

2 Products

2.01 EXISTING SYSTEMS

- 1 Software House C-Cure 9000
- .2 Existing Manufacturer Contact Information: (Jayson Warrilow, Securitas Technology, M: 647-236-1458)

3 Execution

3.01 INSTALLATION

- .1 Install new components in accordance with manufacturer's instructions.
- .2 Maintain operation of the existing system at all times.

End of Section

1 General

1.01 SECTION INCLUDES

- .1 Modifications to existing video surveillance, including provision of new hardware, software licences, etc. to make a complete and functional system.

1.02 RELATED REQUIREMENTS

- .1 Section 28 21 00 – Surveillance Cameras.
- .2 Section 28 23 00 – Video Management System.
- .3 Appendix E-1 Section 4.3.8

1.03 WARRANTY

- .1 All new material and equipment furnished under this section shall be free from defects and shall remain so for a period of at least one (1) year from the date of acceptance.

2 Products

2.01 EXISTING SYSTEMS

- .1 The existing video management system (DVMS) shall be from Genetec.
- .2 Refer to 4.3.8.5 for the design criteria for video surveillance system.
- .3 Existing Manufacturer Contact Information: (Jayson Warrilow, Securitas Technology, M: 647-236-1458)

3 Execution

3.01 INSTALLATION

- .1 Supply & Installation of CCTV hardware equipment and IP Cameras, as per vendors listed in the service master agreement of UHN. Install new components in accordance with manufacturer's instructions.
- .2 Maintain operation of the existing system at all times.

End of Section

1 General

1.01 SECTION INCLUDES

- .1 This section describes the requirements for upgrading an existing fire alarm system and replacement of all existing conventionally wired zones with new addressable zones and devices.
- .2 Replacement of obsolete Fire Alarm Control Panel (FACP).
- .3 Connection of existing fire alarm zones to new panel and addition of new zones for new work as required.
- .4 Replacement of field devices to suit requirements of the new system.
- .5 Connection of all new devices to Fire Alarm Control Panel and annunciator.
- .6 System testing and verification.
- .7 Work to be done under this Section shall include furnishing of labour, materials, and equipment required for installation, testing and putting into proper operation complete Fire Alarm System as shown, as specified and as otherwise required. Complete systems shall be left ready for continuous and efficient satisfactory operation.

1.02 RELATED REQUIREMENTS

- .1 Section 28 46 21.52 – Fire Detection, Suppression, and Pre-action Releasing Panels: new equipment.
- .2 Most recent verification report for existing fire alarm system.

1.03 REFERENCES

- .1 The publications listed below form a part of this specification. The publications are referenced in text by the basic designation only. Comply with latest edition/amendment referenced Code/Publication.
 - .1 Canadian Standards Association:
 - .1 CSA C22.1:21, Canadian Electrical Code, Part 1 (25th Edition), Safety Standard for Electrical Installations.
 - .2 Ontario Electrical Safety Code (28th edition/2021).
 - .2 Ontario Regulations:
 - .1 Ontario Building Code.
 - .2 Ontario Fire Code.
 - .3 Underwriter's Laboratories of Canada
 - .1 CAN/ULC-S524-14 – Installation of Fire Alarm Systems.
 - .2 CAN/ULC-S536 – Inspection and Testing of Fire Alarm Systems.
 - .3 CAN/ULC-S537 - Verification of Fire Alarm Systems.
 - .4 All requirements of the Authority Having Jurisdiction (AHJ).

1.04 SUBMITTALS

- .1 Submit to the Fire Department, drawings showing bells, manual pull stations, complete wiring diagrams and annunciator details and obtain their approval.
- .2 General:
 - .1 All references to manufacturer's model numbers and other pertinent information herein is intended to establish minimum standards of performance, function and quality.
- .3 Shop Drawings:
 - .1 Sufficient information, clearly presented, shall be included to determine compliance with drawings and specifications.
 - .2 Include manufacturer's name(s), model numbers, ratings, power requirements, equipment layout, and device arrangement.
 - .3 Show annunciator layout and main control panel module layout, configurations and terminations.
 - .4 Show device layout, complete riser diagram, and auxiliary functions.
 - .5 The supplier of the system shall prepare a complete zoning schedule and artwork layout for active graphic to be included with submittal package.
- .4 Manuals:
 - .1 Submit complete operating and maintenance manuals listing the manufacturer's name(s) including technical data sheets (with model numbers to be used indicated).
 - .2 Wiring diagrams shall indicate terminals and the interconnections between the items of equipment.
 - .3 Provide a clear and concise description of operation which gives, in detail, the information required to properly operate the equipment.

1.05 CLOSEOUT SUBMITTALS

- .1 ESA inspection certificate.
- .2 Fire Alarm Verification Report.

1.06 EXTRA STOCK MATERIALS

- .1 Provide (supply and install) an additional [five] of each of the following fire alarm devices as directed during construction. Unused extras to be turned over to Owner for future use:
 - .1 Fire alarm horns.
 - .2 Combination Horn/Strobes.
 - .3 Smoke detectors.
 - .4 Heat detectors.
 - .5 Manual fire alarm pull stations.
 - .6 Door hold open devices.

1.07 QUALITY ASSURANCE

- .1 Fire alarms system components shall have CSA and/or ULC approval.
- .2 Fire alarm shall conform to the Building Code, Ontario Regulations 925/75 and as amended subsequently.
- .3 Fire alarm system installation shall conform to ULC Standard S524-M, latest edition.
- .4 Sprinkler flow valves and supervisory valves are existing to remain. Connect new to existing.
- .5 All devices/components shall be suitable for the locations, environment, temperatures in which they are to be installed.
- .6 The fire alarm system shall be manufactured by an ISO 9001 certified company and meet the requirements of BS EN9001: ANSI/ASQC Q9001-1994.
- .7 The new FACP and new peripheral devices shall be manufactured 100% by a single manufacturer (or division thereof).
- .8 Basic Performance:
 - .1 Initiation Device Circuits (IDC) shall be wired Class B.
 - .2 Notification Appliance Circuits (NAC) shall be wired Class B (NFPA Style Y).
 - .3 Alarm signals arriving at the main FACP shall not be lost following a power failure (or outage) until the alarm signal is processed and recorded.
 - .4 The fire alarm system shall be a Zoned Single Stage Non-Coded System as defined in the Ontario Building Code.
- .9 Approvals
 - .1 The system shall have proper listing and/or approval from the following nationally recognized agencies:
 - .1 FM Factory Mutual
 - .2 UL Underwriters Laboratories Inc.
 - .3 ULC Underwriters Laboratories Canada
 - .2 The fire alarm control, panel shall meet the modular listing requirements of ULC. Each subassembly of the FACP, including all printed circuit boards, shall include the appropriate ULC modular label.

1.08 DELIVERY, STORAGE, AND HANDLING

- .1 In accordance with Division 01 requirements.

1.09 WARRANTY

- .1 All work performed and all material and equipment furnished under this contract shall be free from defects and shall remain so for a period of at least one (1) year from the date of acceptance.

2 Products

2.01 EXISTING SYSTEM

- .1 The existing Fire Alarm System is [as indicated on drawings] [Edwards EST] [Notifier] [Simplex] [Mircom] series [single-stage] [two-stage] fire alarm system.
 - .1 The location of the Fire Alarm Control Panel is as indicated on the drawings.
 - .2 There is [one] passive graphic annunciator to be updated, location as indicated on the drawings.

2.02 MANUFACTURERS

- .1 The system shall be:
 - 1 Simplex Grinnell 4100ES series.

2.03 EQUIPMENT AND MATERIAL, GENERAL

- .1 All equipment and components shall be new, and the manufacturer's current model.
- .2 All equipment and components shall be installed in strict compliance with manufacturers' recommendations.
- .3 All Equipment shall be attached to walls and ceiling/floor assemblies and shall be held firmly in place. (e.g., detectors shall not be supported solely by suspended ceilings). Fasteners and supports shall be adequate to support the required load.
- .4 Re-use existing field devices where compatible with the new system.
- .5 Where new devices are required (for example current draw for smoke detectors), provide new field devices as described in this section. Where new devices are required, style shall match existing.

2.04 CONDUIT AND WIRE

- .1 Provide new conduit and wire for all zones and new devices to Section 27 15 01.19.
- .2 Submit credit for re-use of existing initiation circuit wiring if deemed compatible with new addressable initiation circuits.
- .3 Submit credit for re-use of existing signalling circuit wiring if deemed compatible with new addressable signaling circuits.

2.05 COMPONENTS

- .1 Programmable Electronic Sounders:
 - .1 Electronic sounders shall match existing system.
 - .2 Shall be flush mounted as required.
- .2 Audible/Visual Combination Devices:
 - .1 Shall meet the applicable requirements listed above for audibility.
 - .2 Shall have a built in strobe, 15 candela.
- .3 Strobe Synchronizing Modules:

- .1 Synchronize strobes at 1 Hz and horns at temporal over single wire pan.
- .2 Compatibility to match existing system.
- .4 Manual Fire Alarm Stations
 - .1 Manual fire alarm stations shall be non-code, non-breakable glass type.
 - .2 Stations must be designed such that after an actual activation, they cannot be restored to normal without the use of a special tool.
 - .3 An operated station shall automatically condition itself so as to be visually detected, as operated, at a minimum distance of 100 feet (30.5 m) front or side.
 - .4 Manual stations shall be constructed of metal, with operating instructions provided on the cover. The word FIRE shall appear on the manual station in letters one half inch (12.7 mm) in size or larger.
 - .5 Manual stations shall be c/w lexan vandal covers.
 - .6 Style of new manual pull stations to match existing system.
- .5 Conventional Photoelectric Area Smoke Detectors
 - .1 Photoelectric smoke detectors shall be two wire, ceiling-mounted, light scattering type using an LED light source.
 - .2 Each detector shall contain a remote LED output and a built-in test switch.
 - .3 Detector shall be provided on a twist-lock base.
 - .4 It shall be possible to perform a calibrated sensitivity and performance test on the detector without the need for the generation of smoke. The test method shall test all detector circuits.
 - .5 A visual indication of an alarm shall be provided by dual latching Light Emitting Diodes (LEDs), on the detector, which may be seen from ground level over 360 degrees. These LEDs shall flash every 10 seconds, indicating that power is applied to the detector.
 - .6 The detector shall not go into alarm when exposed to air velocities of up to 3000 feet (914.4 m) per minute.
 - .7 The detector screen and cover assembly shall be easily removable for field cleaning of the detector chamber.
 - .8 All field wire connections shall be made to the base through the use of a clamping plate and screw.
 - .9 Style of detectors shall match existing system.
- .6 Duct Smoke Detectors
 - .1 Duct smoke detectors shall be with visual alarm and power indicators, and a reset switch. Each detector shall be installed upon the with properly sized air sampling tubes. To match existing system.
- .7 Automatic Conventional Heat Detectors
 - .1 Automatic heat detectors shall have a combination rate of rise and fixed temperature rated at 135 degrees Fahrenheit (57.2 Celsius) for areas where ambient temperatures do not exceed 100

- degrees (37.7 Celsius), and 200 degrees (93.33 Celsius) for areas where the temperature does not exceed 150 degrees (65.5 Celsius).
- .2 Automatic heat detectors shall be a low profile, ceiling mount type with positive indication of activation.
- .3 The rate of rise element shall consist of an air chamber, a flexible metal diaphragm, and a factory calibrated, moisture-proof, trouble free vent, and shall operate when the rate of temperature rise exceeds 15 degrees F (9.4 degrees C) per minute.
- .4 The fixed temperature element shall consist of a fusible alloy retainer and actuator shaft.
- .5 Automatic heat detectors shall have a smooth ceiling rating of 2500 square feet (762 square metres).
- .6 Style of detectors shall match existing system.
- .8 Remote Annunciator and Passive Graphic
 - .1 This contractor to connect all new zones for the addition to annunciator.
 - .2 Provide new passive graphic, multicolour, under glass with anodized frame and concealed tamperproof mounting.

2.06 BASIC SYSTEM FUNCTIONAL OPERATION

- .1 An alarm is caused by actuation of any one of the following devices:
 - .1 Pulling a manual station
 - .2 Operation of an automatic fire alarm detector
 - .3 Operation of a sprinkler flow switch
 - .4 Operation of a smoke detector
- .2 If, in any area of the building, an alarm is caused by actuation of the aforementioned devices, the following shall occur:
 - .1 Signals in the building shall sound.
 - .2 Annunciators shall indicate exact zone where alarm originated
 - .3 Fans shall be automatically turned off.
- .3 Central station shall be automatically alerted via telephone lines connected for fire alarm system.
- .4 If, in any area of the building, supervised valves of the sprinkler, systems are operated or exhibit short or open circuits, the following shall occur:
 - .1 The annunciator shall identify, as a separate zone, the item causing the trouble signal.
 - .2 The trouble buzzer on the annunciator(s) shall sound.
 - .3 The signals in the building shall not be sounded.

3 Execution

3.01 EXAMINATION

- .1 The approximate location of all initiating devices is shown on the drawings. All existing initiating devices shall not be disturbed unless absolutely necessary to facilitate installation of a new device. No existing devices are to be disturbed without specific authorization by the Project Manager.
- .2 Conduct an impedance test of initiation and signal circuits, and submit report to the Consultant. Report any discrepancies in circuit loading.
- .3 Refer to fire alarm verification report for a summary of existing zones, devices, and sequence of operation on the obsolete system to be reconnected to the new.

3.02 INSTALLATION

- .1 Install fire alarm system in accordance with Specification, Codes and Manufacturer's recommendations.
- .2 Sprinkler/Standpipe System Connections
 - .1 Connect contact of sprinkler flow, supervisory and standpipe system switches to fire alarm zones indicated.
- .3 Wiring
 - .1 Install wiring in conduit and in accordance with recommendations of manufacturer.
- .4 Connect automatic detectors, smoke detectors and manual stations between red and black conductors at each outlet. Cut red and black conductors at each outlet and connect to terminal screws provided, red to red and black to black.
- .5 Wire up annunciators to full capacity.
- .6 Align alarm devices and signals, where grouped together, one above the other.
- .7 Mount devices at the following heights unless replacing existing device at existing rough-in, or otherwise shown:
 - .1 Signal – minimum 150 mm, maximum 300 mm below finished ceiling as directed on site by Consultant, or 2300 mm above finished floor in unfinished areas.
 - .2 Manual Stations – 1200 mm above finished floor.
- .8 Entire installation shall be done under supervision of manufacturer. Upon completion of installation, check entire system to approval and correct any malfunction immediately.
- .9 Test each automatic detector to ensure correct wiring and zoning by setting off its rate of rise component and sounding the bells or by ringing it out. Test each smoke detector, sprinkler system and standpipe valves to ensure correct wiring.
- .10 Manufacturer shall examine Drawings and Specifications prior to award of Contract to ensure that detectors, control panels and miscellaneous devices being supplied will provide a satisfactory working installation.
- .11 Update annunciator / passive graphic to include Addition and renovation areas.
- .12 New devices for the addition shall be compatible with the new system.
- .13 Audibility: Ensure that audible pattern

3.03 FIRE ALARM SYSTEM VERIFICATION

- .1 Provide the service of a competent, factory-trained engineer or technician authorized by the manufacturer of the fire alarm equipment to technically supervise and participate during all of the adjustments and tests for the system.
- .2 Provide a full system verification in accordance with CAN/ULC-S536.
- .3 All initial testing shall be in accordance with CAN/ULC-S537. A representative of the electrical contractor shall be present to participate and assist the manufacturer representative during the course of the verification. The electrical contractor shall make good any deficiencies discovered during the verification. All devices, new and existing, shall be verified. The electrical contractor shall provide one person for assistance with the verification.
- .4 Carry out a complete audibility test.
- .5 Update fire alarm system active graphics upon completion of verification.
- .6 Include associated costs in Tender Price.
- .7 On completion of the inspection the manufacturer shall supply a certificate, together with detailed inspection record sheets showing location of each device and certifying the test results per unit, confirming that the system is installed, supervised and operate in accordance with Article "System Verification".
- .8 The manufacturer(s) of the fire alarm shall make a complete inspection of all existing and new components installed for system(s), such as manual stations, horns, and annunciators and sprinkler and standpipe valves and smoke detectors to ensure the following:
 - .1 That the system is complete in accordance with Specifications.
 - .2 That the system is connected according to ULC requirements.
 - .3 That the system is connected in accordance with the Manufacturer's recommendations.
 - .4 That the regulations concerning the supervision of components have been adhered to (e.g. stations, detectors, supervised valves, bells), and are properly wired and supervised.
 - .5 That all valves are properly connected and displayed correctly on each annunciator.
 - .6 That any subsequent changes necessary to conform to the above will be carried out with technical advice supplied by the Manufacturer.
 - .7 That all thermal detectors, smoke detectors and manual pull stations have been operated and are in good working order.
 - .8 That all sprinkler system and standpipe system valves have been operated and are in good working order.
 - .9 That all annunciators correctly pin-point the origin of any fire alarm.
 - .10 That actual smoke concentration of sufficient density, have been applied to each smoke detector to cause the detector to be set off and that the sensitivity of each smoke detector has been set.
 - .11 That all existing devices are in good working order. Include for replacing any defective/damaged devices at no extra cost to Owner.
 - .12 That signal audibility is acceptable in all areas. Submit audibility readings for every Room.

- .13 If existing audible signal devices have been discontinued by the manufacturer (for example mechanical horns), allow for replacement of all audible devices so that all devices generate similar sounds and sound patterns when activated.

3.04 MANUFACTURER'S FIELD SERVICES

- .1 At the final inspection a factory trained representative of the manufacturer of the major equipment shall demonstrate that the systems function properly in every respect.

3.05 CLOSEOUT ACTIVITIES

- .1 Provide instruction as required to the building personnel and fire and safety personnel.
- .2 Provide "hands-on" demonstrations of the operation of the system.

End of Section

1 General

1.01 SUMMARY

- .1 All equipment, material and installation to be in accordance with the latest edition of codes and standards (CEC, OBC, OESC, TIA/EIA-568-B/569-B/606-A, CSA T527 and BICSI TDMM).
- .2 Comply with following Owner's documents for design and construction references; confirm with the owner for any addenda versions. Wherever there is discrepancy between this specification and the following standards, the one with the stricter requirement applies.
 - .1 Appendix E-1 Section 4.2.16.6
- .3 Provide dedicated Security and CCTV drawings set for detail design, construction and As-Built/Record.

1.02 SECTION INCLUDES

- .1 Furnish and Install a complete and operable Electronic Personal Safety Duress Alarm System as shown on the drawings and herein after described. The system shall be capable of high quality, reliable, and satisfactory operation as herein described.
- .2 The system shall have the ability to integrate with a Pocket Paging and or Computer Report Management System.
- .3 Furnish and Install all required Data Network Interfaces, Personal Computers, Software, and Associated Accessories required for a complete and operable system as herein described.
- .4 One complete and operable system shall be provided and defined as all conduit, raceways, cables, back boxes, contacts, software, etc. to achieve a complete and functional system. Also included are all power supplies, hardware, and interfaces to equipment supplied by others. Documents do not show or list every item to be provided. When an item not shown or listed is clearly necessary for proper installation and operation of the equipment and systems, provide, install, and test/certify, the item at no increase in contract price.

1.03 RELATED REQUIREMENTS

- .1 Drawings and General Provisions of Contract including General and Supplemental Conditions and Division 01 Specification Section, apply to the work of this Section.
- .2 Section 27 05 00 – Common Work Results for Communications.

1.04 SYSTEM DESCRIPTION

- .1 The system shall provide concealed Duress Alarm Push Button located under the desk or counter as shown on the drawings to active an alarm condition.
- .2 Each button shall have a Call Assurance Light to let the person under Duress know that an alarm call has been placed.
- .3 Multiple pressing of the alarm button will not in any way change or cancel the alarm.
- .4 The Alarm shall light a light and activate a repeating tone in the security office. By pressing the button associated with the flashing light the security officer shall simultaneously silence the tone and change the alarm light to steady at both the annunciator and the button of origination Call Assurance light.
- .5 To clear the call and reset the system the button of origination shall be pressed while the light is in the on Steady condition.

1.05 REFERENCES

- .1 Published Codes, Standards, Tests, or Recommended Standards of the Trade, Industry, or Government Organizations apply to these sections include but are not limited to:
 - .1 NFPA - National Fire Protection Association
 - .2 NEC- National Electrical Code - NFPA 70
 - .3 UL - Underwriter's Laboratories, Inc.
 - .4 ADA – Americans with Disabilities Act
 - .5 EIA – Electronic Industry Association
 - .6 NEMA – National Electrical Manufacturers Association
 - .7 NSCA – Nation Systems Contractors Association – Best Practices
 - .8 ASCII – American Standard Code for Information Interchange
 - .9 ASTM - American Society for Testing and Materials

1.06 QUALITY ASSURANCE

- .1 Qualifications:
 - .1 The systems shall be the product of a manufacturer or an agency experienced in such work. The authorized representative of the manufacturer or aforementioned agency shall make the installation and connections of all equipment and test of the operation of the system.
 - .2 All items of a given type shall be the product of the same manufacturer.
 - .3 All items shall be of the latest technology, no discontinued models or products are acceptable.
 - .4 Installers shall have a minimum of 5 years experience in the installation of similar systems on at least 10 projects of similar scope.
 - .5 The Manufacturer or the Authorized Representative shall provide proof that within 60 miles of the project they maintain:
 - .6 A full compliment of parts to support the installation.
 - .7 Offer service by fully trained and qualified technicians during normal working hours.
 - .8 Will supply parts and service without delay and at a reasonable cost.
- .2 Substitutions:
 - .1 All materials and equipment shall conform to these specifications. No substitute materials may be used unless previously accepted in writing by the Architect.
- .3 Regulatory Requirements:
 - .1 Comply with NEC as applicable to construction and installation of system components and wiring.
 - .2 Conform to NFPA 70

- .3 Conform to HIPAA regulations relating to paging and public address systems.
- .4 Systems must be inspected and receive accreditation from all agencies such as OSHPOD and JCAHO if mandated by the owner. Suppliers of all systems must include all documentation and staff to support the owner during these inspections and certifications.
- .4 Submittals
 - .1 Refer to Section General Conditions and Related Sections for full details of submittal requirements.
 - .2 Provide full service contact information including company name, address, contact name, and phone number of authorized representative. Provide written proof from the Manufacturer of major system components affirming that the representative is duly authorized and trained to supply, support, and service the equipment.
 - .3 Provide a complete list of all equipment to be furnished.
 - .4 Provide Product Data: For each equipment component shown on the riser and or wiring diagram.
 - .5 Provide complete written sequence of operation for all factions of all systems.
 - .6 Provide dimensioned detail drawings of all special assemblies including custom panels, mounting assemblies, and location.
 - .7 Provide System Riser Diagram including:
 - .1 Annunciator / Master Stations
 - .2 Corridor Lights
 - .3 Zone Lights
 - .4 Patient Stations
 - .5 Pull Stations
 - .6 Data Collection Modules
 - .7 Data Interface Modules
 - .8 Personal Computers
 - .9 Power Supplies
 - .8 Provide Wiring Details of all connections between all systems components.
 - .9 Manufacturer Instructions: Provide manufacturer's written installation instructions.
 - .10 Proposed training program, including name and qualification of trainer(s), schedule of training, curricula, and written training materials.
 - .11 Closeout Submittals
 - .1 Refer to Section General Conditions and Related Sections for full details of closeout requirements
 - .2 As-Built Drawings indicating actual location and connection of components.

- .3 Operation and maintenance manuals for each system and equipment component.
- .4 Executed warranty documentation.
- .5 Submit Low-Emitting Material Declaration Form, together with applicable supporting documentation listing VOC content for all paints, coatings, adhesives, and sealants applied on Site. Factory applied finishes do not need to be submitted.

1.07 CLOSEOUT SUBMITTALS

- .1 The Contractor shall provide the following regarding warranties and guarantees.
- .2 Extend the manufactures warranty to the owner. The owner understands that manufactures warranties will vary from manufacturer to manufacturer.
- .3 Provide one year of free maintenance on the system from date of substantial completion and the owner's first beneficial use of the system.

1.08 DELIVERY, STORAGE, AND HANDLING

- .1 Refer to Section General Conditions and Related Sections for full details.
- .2 Deliver materials and components in manufacturer's original, unopened, undamaged containers with identification labels intact.
- .3 Store materials as recommended by manufacturer.
- .4 During construction all products must be protected from dust, dirt, and construction foreign matter including dents, bumps, and scratches.

1.09 WARRANTY

- .1 Refer to Section General Conditions and Related Sections for full details.
- .2 The installing manufacturer's representative shall guarantee all labor, parts, and installation for a period of 1 year from substantial completion or first beneficial use of the system.
- .3 Provide manufacturer 2-year warranty for the intercommunication and program system.
- .4 Upon written notification of unacceptable work or warrantee request the installing manufacturer's representative shall provide qualified technicians and parts within 24 hours of notification.

2 Products

2.01 MANUFACTURERS

- .1 The following manufacturers are known to provide products that meet or exceed these specifications.
 - .1 []

2.02 ELECTRONIC PERSONAL SAFETY DURESS ALARM SYSTEM

- .1 System Description:
 - .1 The Light Signaling System shall be a distributed processing intelligent network consisting of a combination of Intelligent Substations having four push buttons inputs and four light outputs, Intelligent Corridor Lights having four lights, and Master Stations capable of displaying up to eight Substations. The buttons/lights shall be provided with custom printed color labeling per

the Architect's instruction and clear adhesive Lexan faceplates to easily identify functions or staff. Annunciator panels with surface mounted or exposed labeling will be totally unacceptable under these specifications. The system shall be expandable up to 512 Substations on a single system.

- .2 The system shall use RS485 digital communication between intelligent devices. All Substations shall have two sets of dipswitches that allow addressing of each unit. One set of dipswitches will assign a Substation to a Master and the second set selects the column of lights on the Master to represent the Substation. Any Substation status change shall be reflected in the Master lights and annunciated by a tone. Any Masters, Substations, or Corridor Lights with the same address setting shall be totally interactive. This interaction shall allow multi-point control for tailoring a system to meet special needs.
- .3 All user interfaces shall employ moisture and electrostatic resistance to provide reliable yet friendly operation.
- .4 Wiring for the Light Signaling System shall consist of two twisted pair network wiring from one device to the next. Size and type of wire shall be as recommended by the manufacturer of the system. Systems, which require a home run to a central equipment location will be totally unacceptable under this specification.
- .5 The Electronic Personal Safety Duress Alarm System shall be Tech Works LIGHT-CALL.

2.03 EQUIPMENT

- .1 The Light Signaling System Intelligent Control Interface Module shall be a standard four gang electrical box mounting device constructed of ABS plastic with a water resistant lexan face plate. A minimum of four columns of four buttons and four lights shall be provided to allow both input and output. An electronic tone shall sound at the Master each time a light changes status. The tone must have an installer removable jumper to permanently disable the electronic tone if so desired. Two four position dip switches set by the installer shall determine the Module address. The Module shall be an intelligent electronic device requiring no more than 264 mA at 12 Volts DC for full operation. The Intelligent Module shall employ EIA standard RS485 digital communication. The system shall operate on two twisted pair parallel wiring. Systems requiring more than two twisted pairs from one station to the next for full operation shall not be considered under this specification.
The Light Signaling System Interface Module shall be Tech Works Model 5260-DC.
- .2 The Light Signaling System Intelligent Interface Module shall be a surface-mounting device constructed of cold rolled steel with a removable cover plate. The Module shall not have any lights or buttons and shall include screw terminals on the rear for support of passive push buttons and lights. Each push button screw terminal shall have an associated "LED" screw terminal to support a remote signaling light. Two four-position dipswitches set by the installer shall determine the group and Master address. Any two Intelligent Modules having the same address must be totally interactive. Any system not capable of installer programmable interaction of Modules shall not be considered under this specification. The Interface Module shall be an intelligent electronic device requiring no more than 60 mA at 12 Volts DC for full operation. The system shall operate on two twisted pair parallel wiring. Systems requiring more than two twisted pairs from one Module to the next for full operation shall not be considered under this specification. The 5250-DCS push button screw terminals shall operate as a multi-function momentary switch with the first push of each button changing the status from off to flashing, and after the master has acknowledged the call changing the light to steady the second push changing the output to off. Two software configurations are included with each unit. When the software select switch is in the down position, all inputs are set to normally open momentary contact monitoring. When the "S" switch is in the up position all inputs are set to normally closed contact monitoring.
The Light Signaling System Intelligent Interface Modules shall be Tech Works Model 5250-DCS.
- .3 The recessed Duress Alarm Push Button shall be a surface mounting device with integral acknowledge light. To prevent accidental false alarms, the button shall be recessed inside a durable plastic housing

measuring no more than 1" high, 2" wide, and 2.3125" deep. The call acknowledge light shall be a wide angle super bright LED for long life reliable operation.

The Light Signaling System Duress Alarm Push Button shall be Tech Works Model 5131.

- .4 The Light Signaling System Wall Mount Help Button Station shall be a standard one gang electrical box mounting device constructed of ABS plastic with a water resistant Lexan faceplate. A large 1.25 inch square red push button clearly labeled "HELP" shall be included with a call confirmation light to indicate that a call has been placed. The push button Station shall be a passive electronic device requiring no more than 2 mA at 12 Volts DC for full operation.

The Light Signaling Room Status Help Button Station shall be Tech Works Model 5221-H.

- .5 The Light Signaling System shall be supplied with a 12-Volt Direct Current power supply capable of powering all devices, as shown on plans, simultaneously with a minimum of 25% reserve power. The power supply shall be UL/CSA Listed for use with alarm and signaling systems. A surface mounting case shall be included to house the power supply. This unit shall operate from an input of 100 to 240 Volts AC and supply a minimum of 7.0 Amps at 12-Volts DC. The Light Signaling System Power Supply shall be Tech Works Model PSD1270A.

2.04 ACCESSORIES

.1 Wire and Cable

- .1 System Network Wire shall be 18 AWG stranded twisted two pair cable with overall jacket. Wire twist shall be industry standard audio twist per foot or greater. Jacket material shall be compliant with NFPA and NEC codes for the type of location in which the cable is installed.

- .2 All patch Cords shall be CAT6 type standard network patch cords.

- .3 All Adapters, Plugs, and connectors shall be included as required.

.2 Cable Management

- .1 Cable management shall be as shown on the plans.

- .2 Where not shown on the plans wire shall be open run through concealed spaces and dressed using tie-wraps and screw mount tie-wrap holders on all exposed open runs.

- .3 In all cases wire routing and cable management shall be compliant with NEC and all Codes, Standards, and Best Practices applicable.

3 Execution

3.01 INSTALLATION

.1 Provide duress alarms in the following locations:

- .1 Duress alarms in reception area

- .2 Duress alarms in all barrier free washrooms

- .3 Duress alarms in fare-box audit room

- .4 Duress alarms tie into intrusion detection system.

- .5 Strobes and audible annunciators outside protected area/rooms

- .2 The Contractor shall furnish and install all interconnected cable, equipment, miscellaneous parts and accessories to make a complete and fully operational system as described herein and as shown on the drawings.
- .3 All cables shall be sized in accordance with manufactures recommended cabling requirements. All cable and wire shall be air plenum rated even if installed in conduit.
- .4 Equipment shall be installed and wired in accordance with accepted engineering and installation practices. Only the highest degree of workmanship will be accepted. Install in accordance with Electronic Systems Technician (EST) practices.
- .5 All cables shall be run continuously and no splicing may be made in any cable run.
- .6 Cable and wiring routed through inaccessible spaces or spaces where there is risk of damage to conductors shall be installed in conduit or raceways supplied by other sections of this specification.
- .7 All cable and wiring shall be run concealed in ceiling spaces or surface raceways, except for in wiring closets such as the Main Distribution Frame (MDF).
- .8 All cable and wiring shall be securely fastened to the permanent building structure. Cable and wire not installed in raceway shall be supported at regular intervals appropriate to the cable and wire size. Cable and wiring shall not lay loose on ceiling tiles or grids and shall not be suspended from or attached to existing conduit.
- .9 Tighten connectors and terminals, including screws and bolts, in accordance with equipment manufacturer have published torque tightening values for equipment connectors. Where manufacturer's torque requirements are not indicated, tighten connectors and terminals to comply with tightening torque per NEC specification.
- .10 The following circuit types shall be installed in their own conduits:
 - .1 Microphone and control lines
 - .2 Control lines
 - .3 AC power lines
- .11 Provide a #6 AWG insulated copper ground wire from the main equipment to the building main ground bus.
- .12 Install in accordance with NFPA 70 and manufacturer recommended installation procedures.

3.02 FIELD QUALITY CONTROL

- .1 Cleaning
 - .1 Clean all devices, cabinets, and housings as recommended by electronic industry manufacturer.
- .2 Labeling
 - .1 All wiring and connections must be clearly labeled using industry standard permanent marking devices. Contractor shall identify and tag all cables with permanent type markers to denote locations served.
 - .2 All user interfaces must be clearly and permanently labeled for their intended use. All front panel controls used in the normal operation of the system shall be clearly labeled using plastic laminate engraved labels or approved equal. Labels shall be firmly affixed to the panel or

device. Dymo or Kroy tape adhesive backed lettering is not acceptable. Each major system component shall be labeled as to function and area served.

- .3 Site Tests/Inspection
 - .1 Post Occupancy testing: Test inputs and outputs of all devices to verify compliance with functionality of designed system.
 - .2 Verify installed cable is free of opens grounds and shorts.
 - .3 Verify ventilation for equipment is adequate for installed units.

3.03 DEMONSTRATION

- .1 Provide instruction to the Owner or their appointed representative related to operation, maintenance and programming of all systems Training sessions shall be on-site, limited to 15 people maximum in any one session. Sessions shall last approximately one (1) hours each. In addition, Contractor shall provide a minimum of four (4) hours training for system administrator.
- .2 Follow-up training must be provided on all systems, one (1) week after cutover.
- .3 Provide demonstration and training by a staff member/trainer who is certified by the system manufacturer to provide training.

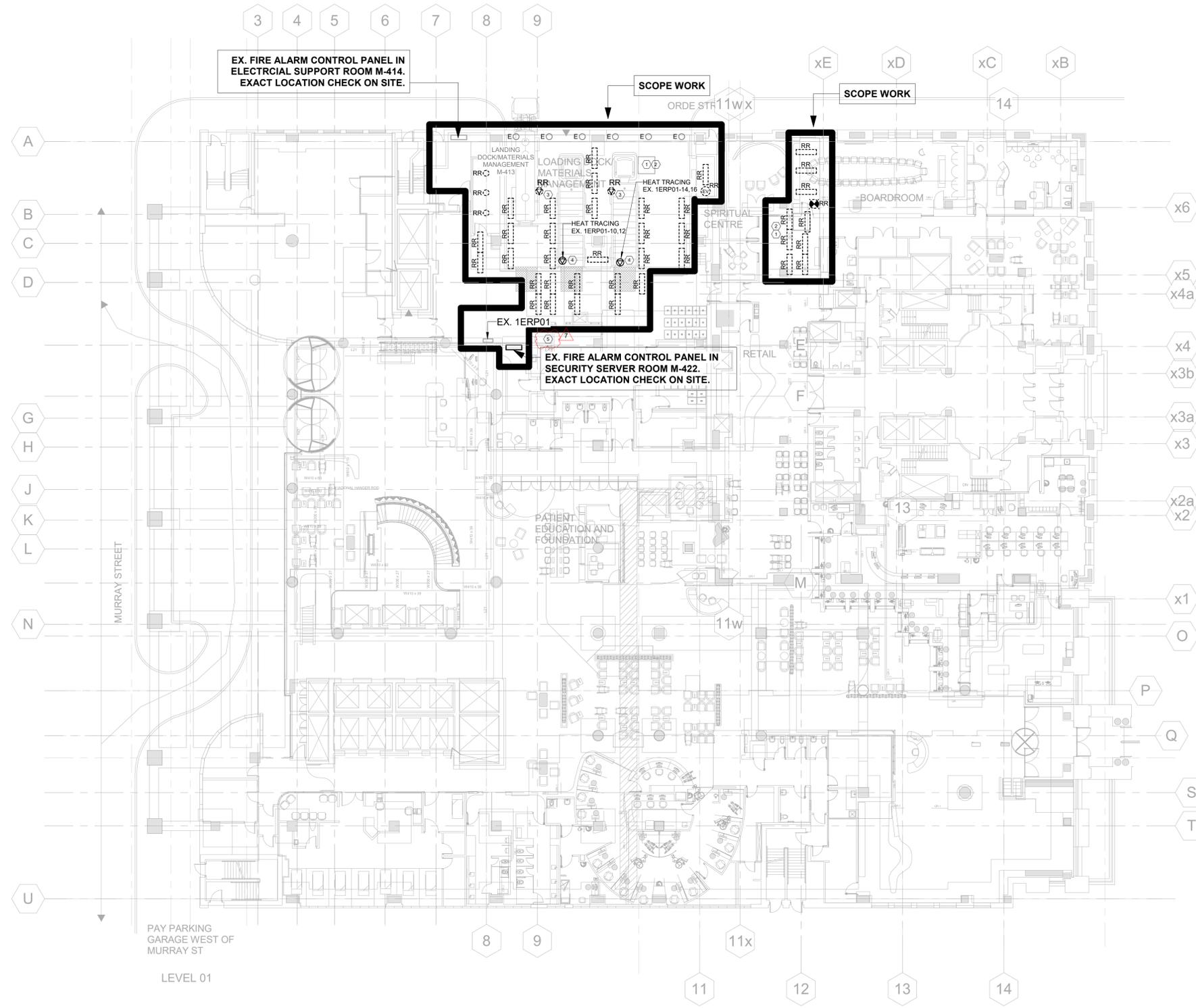
3.04 FINAL CHECKOUT AND ACCEPTANCE

- .1 The Contractor shall verify that the system is complete and fully operational before requesting final approval and before scheduling system demonstration.
- .2 This Contractor shall be available to demonstrate the operation and use of the system to the Architect/Engineer and to the Owner's representatives.
- .3 At the time of the demonstration, this Contractor shall furnish to the Owner one (1) complete record manuals.
- .4 Substantial Completion of the system will start the warranty period for both material and labor.

End of Section

SHEET KEYNOTES

- 1 REMOVE, RELOCATE AND CONNECT COMPLETE ALL CEILING DEVICES IN DENOTED AREAS TO ALLOW FOR MECHANICAL REWORK TO TAKE PLACE IN THE CEILING SPACE ABOVE. RE-VERIFICATION OF THE FIRE ALARM SYSTEM WILL BE REQUIRED. CONTRACTOR TO CONFIRM EXACT LOCATIONS AND QUANTITIES OF ALL CEILING DEVICES PRIOR TO TENDER CLOSE. CONTRACTOR TO INCLUDE FOR ADDITIONAL VISITS WITH THE UNDERSTANDING THAT DEMOLITION AND NEW WORK MAY NOT BE COMPLETED ON THE SAME DAY. ALL WORK SHALL BE COMPLETED AFTER HOURS TO ALLOW FOR NORMAL OPERATIONS TO CONTINUE DURING HOSPITAL OPERATING HOURS. REFER TO ARCHITECTURAL AND PLUMBING PLANS FOR ADDITIONAL INFORMATION.
- 2 ELECTRICAL CONTRACTOR TO PRICE FOR UP TO 5% ADDITIONAL DEVICES THAT MAY NOT BE CAPTURED IN PLAN DUE TO EXISTING SITE CONDITIONS.
- 3 REMOVE THE EXISTING JUNCTION BOX FOR EXISTING HEAT TRACING CONTROLLER. WIRING BACK TO SOURCE. GFI BREAKER FOR THE EXISTING HEAT TRACING SET TO "SPARE". UPDATE PANEL DIRECTORY AFTER COMPLETE.
- 4 PROVIDE NEW JUNCTION BOX FOR NEW HEAT TRACING CONTROLLER. PROVIDE 30A/2P GFI BREAKER IN EXISTING PANEL 1ERP01 AND WIRING FOR THE HEAT TRACING CONTROLLER. COORDINATE THE JUNCTION BOX WITH MECHANICAL ON SITE. CHECK EXISTING PANEL SPACE AND PANEL CAPACITY PRIOR TO INSTALLED. THE 30A/2P GFI BREAKER KIA RATING TO MATCH EXISTING PANEL KIA RATING.
- 5 UPDATE EXISTING FIRE ALARM PANEL TO SUIT NEW FIRE ALARM CIRCUITS PROVIDED. PROVIDE NEW SUB FIRE ALARM PANEL IF EXISTING PANEL SPACES ARE NOT ENOUGH.



1 ELECTRICAL - 1ST FLOOR DEMOLITION & NEW WORK PLAN
SCALE 1: 200

Rev.	Description	Date
7	ISSUED FOR ADDEM E-1	2024-09-05
6	ISSUED FOR TENDER	2024-08-14
5	ISSUED FOR BUILDING PERMIT	2023-12-19
4	ISSUED FOR MOH 4.1 SUBMISSION	2023-09-25
3	ISSUED FOR 95% CD SUBMISSION	2023-09-06
2	ISSUED FOR 90% CD SUBMISSION	2023-07-31
1	ISSUED FOR 50% CD SUBMISSION	2023-05-08

Drawing Title:
**ELECTRICAL - 1ST FLOOR
DEMOLITION & NEW
WORK PLAN (MH)**
As indicated
Project No.: 0020711.00 Checked by: JG

E0101

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2024-09-05 9:52:21 AM

Princess Margaret
Cancer Centre Stem Cell
Transplant 2

Part B
(MH, MHDU, DSC)

CANNONDESIGN

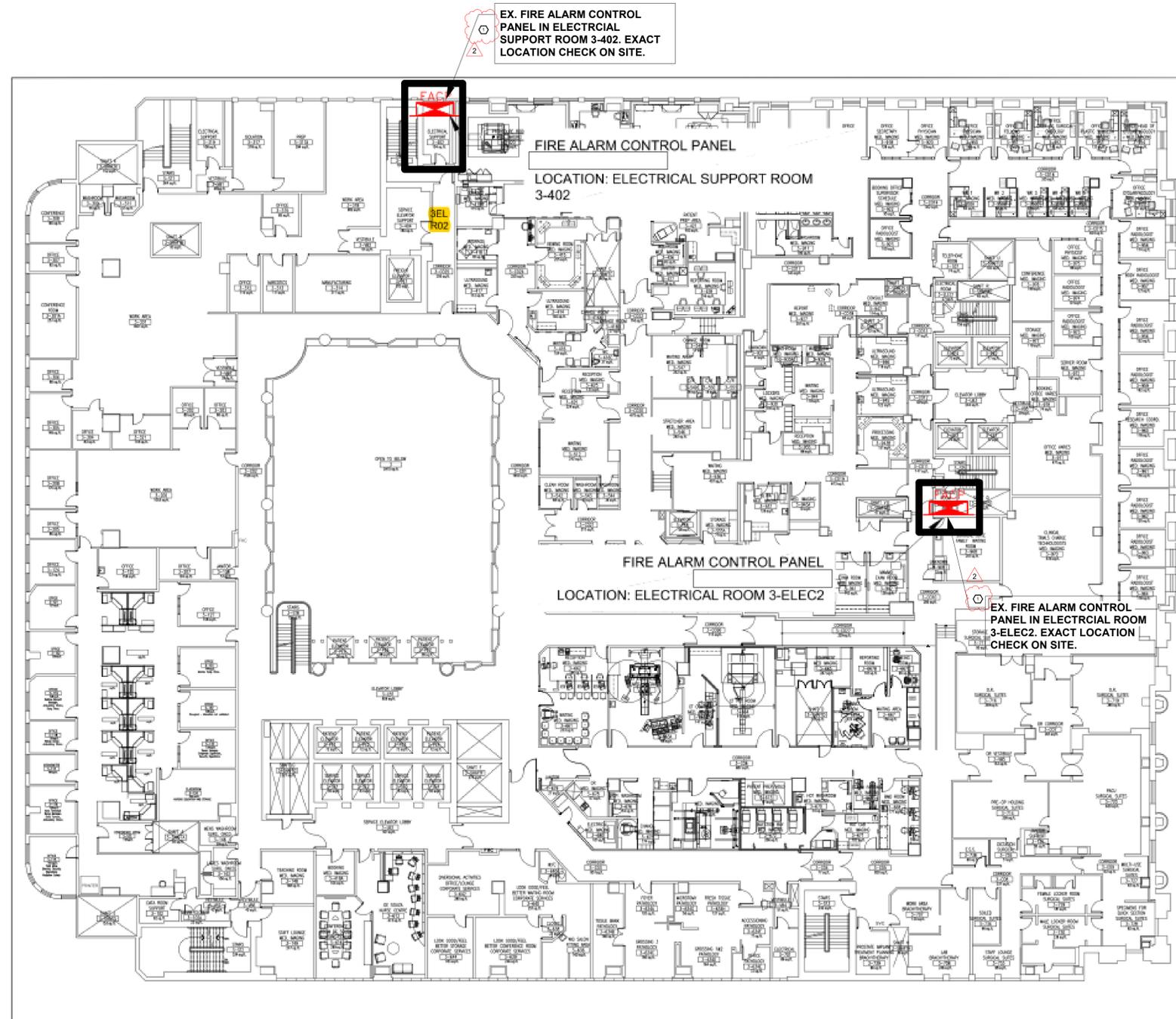
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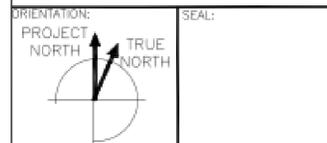
Mechanical & Electrical
250 Rowntree Dairy Rd.
Woodbridge, ON, Canada L4L 9J7
P: 905 507 0800

www.quasarcm.com



LEGEND:
FACP - FIRE ALARM CONTROL PANEL

REV.	DATE	DESCRIPTION	BY
00	DEC 14/22	ISSUED FOR REVIEW	IS



ARENCON INC.
ENGINEERS + CONSULTANTS IN FIRE SAFETY AND CODES
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PROJECT:
PRINCESS MARGARET HOSPITAL
610/620 UNIVERSITY AVE.
TORONTO, ON

TITLE:
FIRE ALARM PANEL REPLACEMENTS
LEVEL 3
DEVICE LAYOUT

DRAWN BY: IS	CHECKED BY: MNZ
DATE: DEC 2022	SCALE: N.T.S.
PROJ. NO.: 6488.46	REV.: 00 DWG.: FA-4

1 ELECTRICAL KEY PLAN - LEVEL 3
SCALE: N.T.S.

SHEET KEYNOTES

⊖ UPDATE EXISTING FIRE ALARM PANEL TO SUIT NEW FIRE ALARM CIRCUITS PROVIDED. PROVIDE NEW SUB FIRE ALARM PANEL IF EXISTING PANEL SPACES ARE NOT ENOUGH.

2	ISSUED FOR ADDEM E-1	2024-09-05
1	ISSUED FOR TENDER	2024-08-14

Rev. Description Date

Drawing Title:
**ELECTRICAL KEY PLAN -
LEVEL 03 (MHDU)**

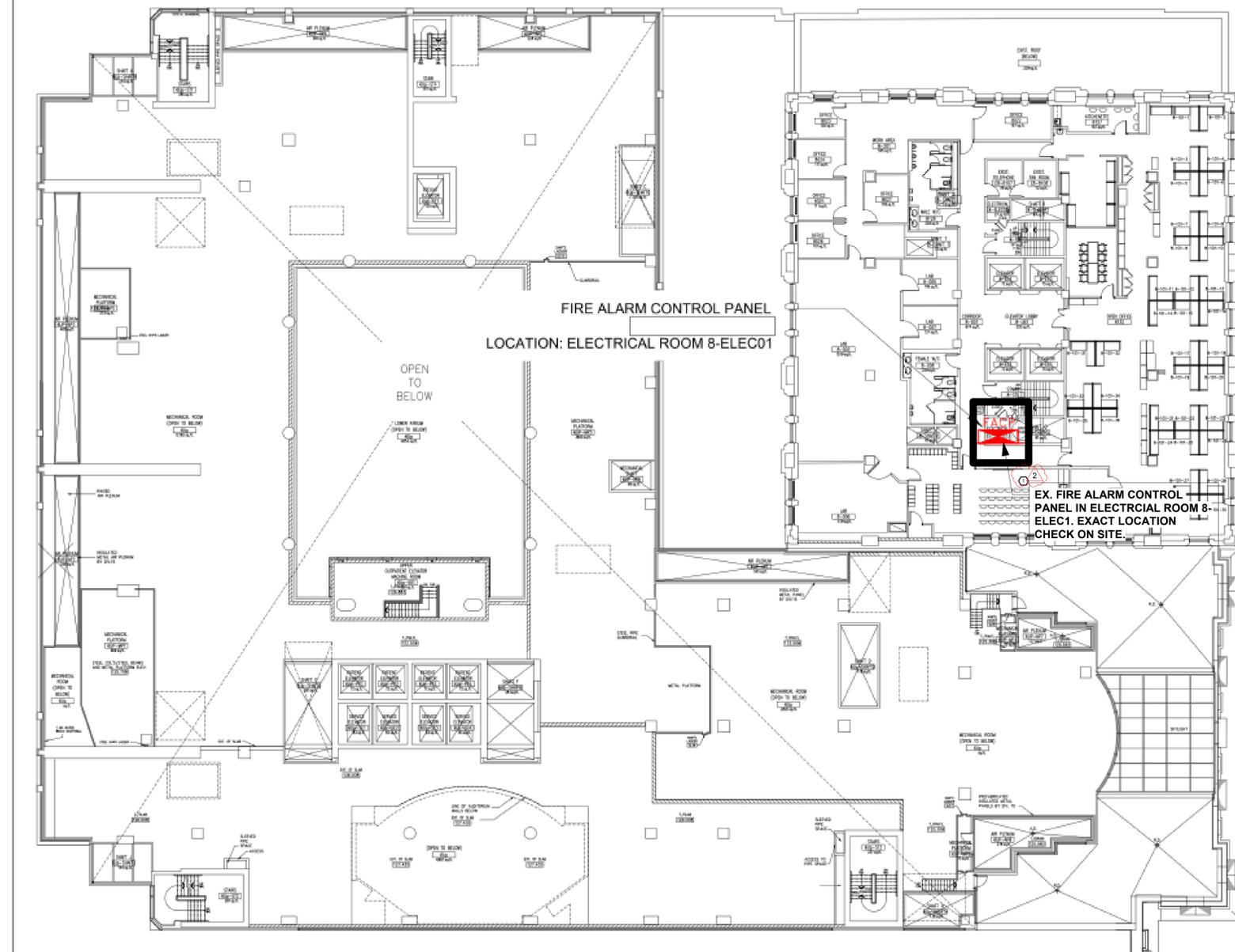
As indicated

Project No.: 0020711.00 Checked by: JG

E0103

PMH-610-6th Floor Upper

PMH-620-8th Floor



SITE PLAN:
Orde St
Murray St
University Ave

LEGEND:
FACE - FIRE ALARM CONTROL PANEL

REV.	DATE	DESCRIPTION	BY
00	DEC 14/22	ISSUED FOR REVIEW	IS

REVISION

ORIENTATION:
PROJECT NORTH
TRUE NORTH

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PROJECT:
PRINCESS MARGARET HOSPITAL
610/620 UNIVERSITY AVE.
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TITLE:
FIRE ALARM PANEL REPLACEMENTS
610 LEVEL 6 / 620 LEVEL 8
DEVICE LAYOUT

DRAWN BY:	IS	CHECKED BY:	MNZ
DATE:	DEC 2022	SCALE:	N.T.S.
PROJ. NO.:	6488.46	REV.:	00
		DWG.:	FA-6

1 ELECTRICAL KEY PLAN - BUILDING 620 LEVEL 8
SCALE: N.T.S.

2 SHEET KEYNOTES

⊙	UPDATE EXISTING FIRE ALARM PANEL TO SUIT NEW FIRE ALARM CIRCUITS PROVIDED. PROVIDE NEW SUB FIRE ALARM PANEL IF EXISTING PANEL SPACES ARE NOT ENOUGH.
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2	ISSUED FOR ADDEM E-1	2024-09-05
1	ISSUED FOR TENDER	2024-08-14

Rev.	Description	Date
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Drawing Title:

**ELECTRICAL KEY PLAN -
LEVEL 8 (DSC)**

As indicated

Project No.: 0020711.00 Checked by: JG

E0108

Princess Margaret
Cancer Centre Stem Cell
Transplant 2

Part B
(MH, MHDU, DSC)

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POWER AND SYSTEMS DEMOLITION PLAN
GENERAL NOTES:

- ALL EQUIPMENT AND DEVICES ON THIS DRAWING ARE EXISTING TO BE DISCONNECTED AND REMOVED OR RELOCATED UNLESS DENOTED WITH AN 'E' OR OTHERWISE DENOTED AS EXISTING TO REMAIN. CUT BACK AND REMOVE CONDUIT AND WIRING BACK TO SOURCE PANEL. DEVICES/EQUIPMENT DENOTED WITH AN 'E' ARE EXISTING TO REMAIN. ELECTRICAL CONTRACTOR TO NOTE THAT NOT ALL DEVICES ARE SHOWN. ELECTRICAL CONTRACTOR TO SITE VERIFY EXACT QUANTITY OF DEVICES TO BE DEMOLISHED DURING TENDER PHASE SITE WALK-THROUGH. FOLLOWING DEMOLITION AND REMOVAL OF EXISTING CEILING, THE CONTRACTOR SHALL REMOVE ALL EXISTING REDUNDANT AND UNUSED LINE VOLTAGE AND LOW VOLTAGE WIRING. EXISTING WIRING THAT IS REQUIRED TO REMAIN IN OPERATION SHALL BE PROPERLY FASTENED/SUPPORTED FROM THE CEILING. ANY EXISTING JUNCTION BOXES WITHOUT COVERS SHALL BE PROVIDED WITH SUITABLE COVERPLATES.
- ENSURE THAT ALL ELECTRICAL LIFE SAFETY SERVICES AND SERVICES FOR EXISTING EQUIPMENT THAT ARE REQUIRED TO REMAIN IN SERVICE SHALL DO SO.
- ALL EXISTING ELECTRICAL EQUIPMENT WHICH IS NO LONGER REQUIRED SHALL BE REMOVED AND DISPOSED OF OFF SITE UNLESS OTHERWISE NOTED. BE RESPONSIBLE AND PAY FOR ANY DAMAGE TO THE BUILDING INCURRED BY WORK OF THIS CONTRACTOR OR REPAIR TO THE SATISFACTION OF THE OWNER AND CONSULTANT.
- CARRY OUT THE WORK WITH A MINIMUM OF NOISE, DUST AND DISTURBANCE.
- WHERE EQUIPMENT OR DEVICES ARE REMOVED CUT BACK AND REMOVE CONDUIT AND WIRING BACK TO SOURCE PANEL.
- REFER TO NEW PLAN FOR NEW LOCATION OF RELOCATED EQUIPMENT AND DEVICES.
- WHERE REMOVED EQUIPMENT AFFECTS THE OPERATION OF EXISTING EQUIPMENT TO REMAIN THE CONTRACTOR SHALL REPLACE/MAKE GOOD BRANCH WIRING AS REQUIRED TO ENSURE CONTINUITY OF REMAINING EQUIPMENT.
- THE CONTRACTOR SHALL BE AWARE THAT NOT ALL EXISTING EQUIPMENT AND DEVICES REQUIRED TO BE REMOVED ARE NECESSARILY INDICATED ON THIS PLAN. THE CONTRACTOR SHALL STILL BE RESPONSIBLE FOR REMOVING ALL SUCH EQUIPMENT AS REQUIRED TO FACILITATE THE COMPLETE DEMOLITION.
- REMOVE ALL EXISTING REDUNDANT BX WIRING AND CONDUITS IN CEILING SPACE. VERIFY EXACT EXTENT ON SITE.
- ELECTRICAL CONTRACTOR TO ENGAGE THE BASE BUILDING FIRE ALARM CONTRACTOR FOR ANY FIRE ALARM WORK WITHIN THE SCOPE OF THIS PROJECT.
- EXISTING LUMINAIRES WITHIN AREA OF DEMOLITION TO BE REMOVED AND DISCARDED. REFER TO ARCHITECTURAL DRAWINGS FOR EXISTING LAYOUT. EXACT QUANTITY TO BE CONFIRMED ON SITE BY CONTRACTOR.
- RETURN ALL REMOVED DEVICE AND LIGHT FIXTURES TO HOSPITAL FACILITIES. IF THE HOSPITAL DOES NOT WANT THE DEVICES TO BE RETURNED, THEN THE CONTRACTOR SHALL INCLUDE FOR PROPER DISPOSAL.
- ENSURE CIRCUIT INTEGRITY FOR ALL BRANCH CIRCUITS SERVING AREAS OUTSIDE OF SCOPE OF WORK. TRANSFER CIRCUITS TO NEW PANELS WITHIN SCOPE AS REQUIRED.
- ELECTRICAL CONTRACTOR TO PRICE FOR ADDITIONAL DEMOLITION OF UP TO 5% OF DEVICE THAT MAY NOT HAVE BEEN SHOWN FOR BOTH LIGHTING, POWER AND SYSTEMS, DUE TO EXISTING SITE CONDITIONS.

SHEET KEYNOTES

- REMOVE POWER CONNECTION FOR EXISTING MECHANICAL EQUIPMENT IN CEILING. WIRING BACK TO SOURCE. THE BREAKER FOR THE MECHANICAL EQUIPMENT SET TO "SPARE" IF IT IS DEDICATED CIRCUIT FOR THE MECHANICAL EQUIPMENT AFTER COMPLETION. UPDATE PANEL DIRECTORY ACCORDINGLY.

Rev.	Description	Date
7	ISSUED FOR ADDEM E-1	2024-09-05
6	ISSUED FOR TENDER	2024-08-14
5	ISSUED FOR BUILDING PERMIT SUBMISSION	2023-12-19
4	ISSUED FOR MOH 4.1 SUBMISSION	2023-09-25
3	ISSUED FOR 95% CD SUBMISSION	2023-09-06
2	ISSUED FOR 90% CD SUBMISSION	2023-07-31
1	ISSUED FOR 50% CD SUBMISSION	2023-05-08

Rev. Description Date

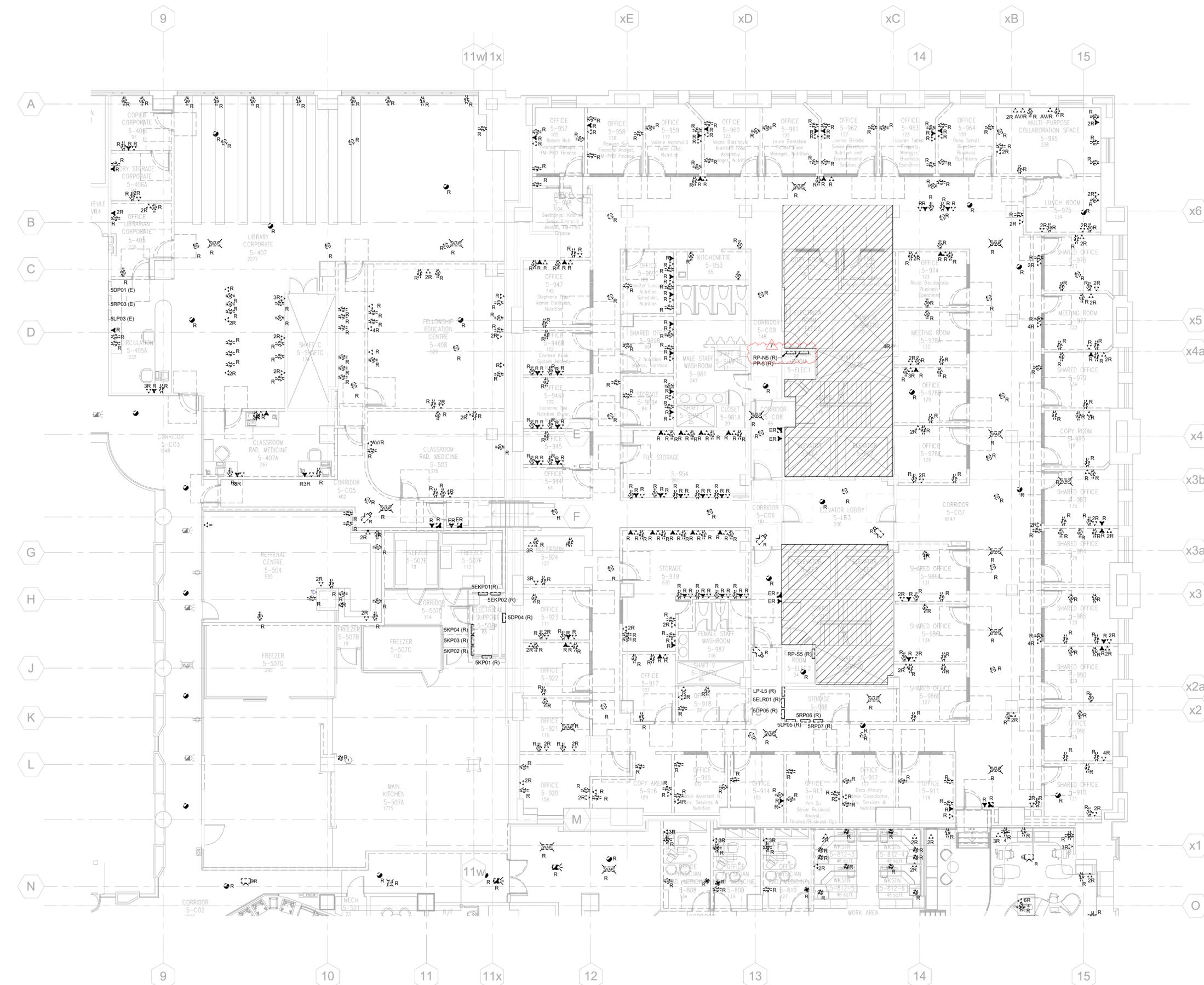
Drawing Title:

**POWER & SYSTEMS-
DEMO WORK LVL5A
MHDU**

As indicated

Project No.: 0020711.00 Checked by: JG

E1105A



1 POWER AND SYSTEMS PLAN - DEMO WORK - LEVEL 05A (MHDU)
SCALE: 1 : 100

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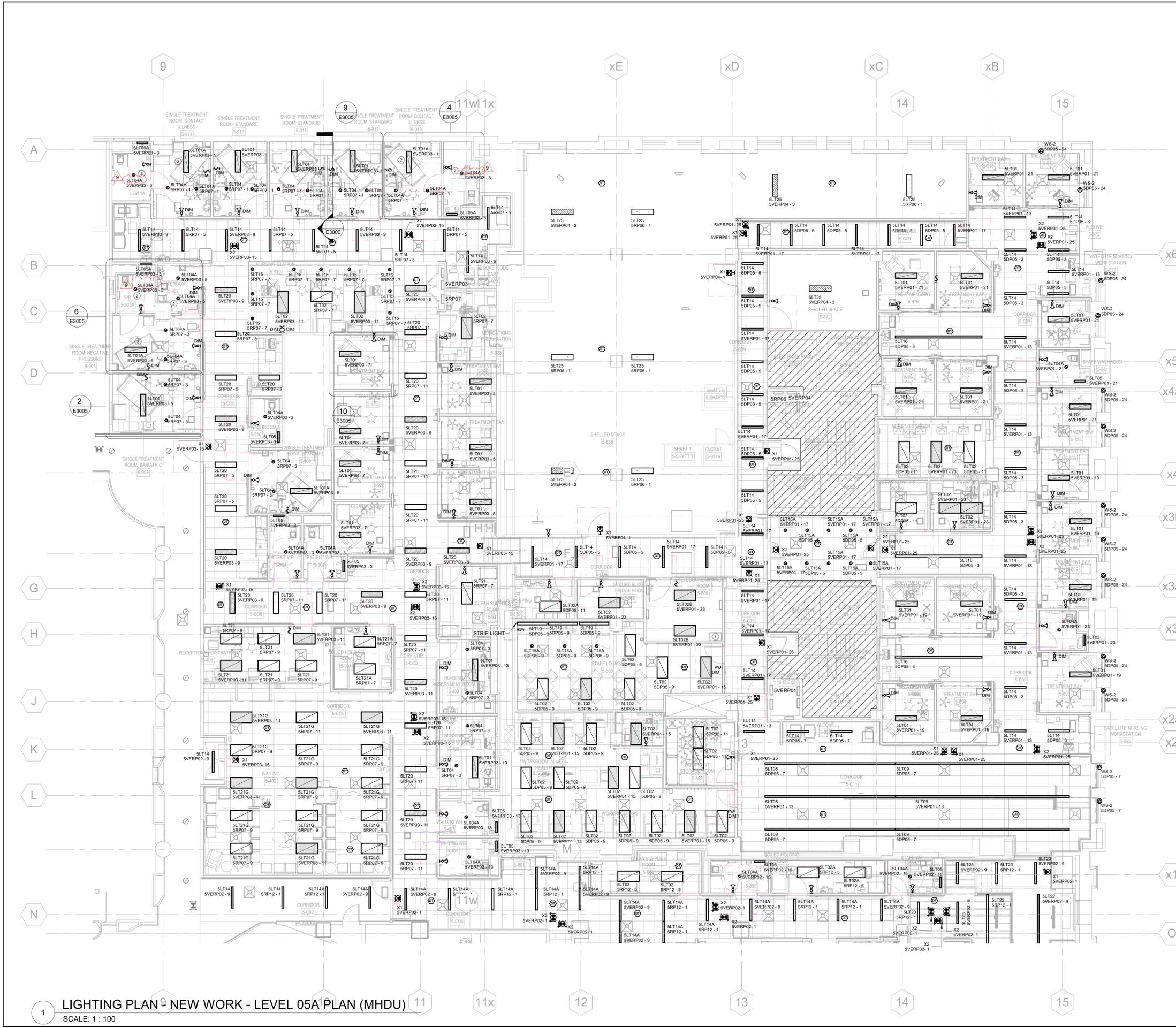
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GENERAL SHEET NOTES - LIGHTING NEW WORK

- COMPLY WITH THE ONTARIO ELECTRICAL SAFETY CODE, CSA 226 AND THE ONTARIO BUILDING CODE. SUBMIT FINAL INSPECTION CERTIFICATE UPON COMPLETION OF WORK TO OWNER.
- ELECTRICAL DRAWINGS SHALL BE READ IN CONJUNCTION WITH ARCHITECTURAL, MECHANICAL, AND EQUIPMENT VENDOR DRAWINGS.
- PROVIDE LAMACOID IDENTIFICATION NAMEPLATES FOR ALL EQUIPMENT, FEEDERS, DISCONNECTS, LIGHT SWITCHES AND HOSPITAL GRADE RECEPTACLES. ALL ELECTRICAL SERVICES SHALL COMPLY WITH CSA 226 STANDARDS. ALL RECEPTACLES ARE 'CRITICAL CARE' AND REQUIRES THIRD PARTY TESTING. ELECTRICAL EQUIPMENT REMOVED MUST BE ISOLATED AND DISCONNECTED AT THE SOURCE PRIOR TO REMOVAL OPERATIONS. DURING ISOLATION AND DISCONNECTION PROCEDURES DANGER TAGS MUST BE ISOLATED AND DISCONNECTED AT THE SOURCE PRIOR TO REMOVAL OPERATIONS. DURING ISOLATION AND DISCONNECTION PROCEDURES DANGER TAGS MUST BE USED TO IDENTIFY ANY FEEDERS OR EQUIPMENT REMAINING ENERGIZED TO ACCOMMODATE NEW CONSTRUCTION. UPDATE TYPE WRITTEN PANEL BOARD CONDUCTORS BEING DEMOLISHED.
- OBTAIN PERMISSION FOR OUTAGES FROM THE CLIENT'S REPRESENTATIVE AT LEAST 30 DAYS PRIOR TO THE OUTAGE, IN ACCORDANCE WITH THE PROCESS OF THE FACILITY MANAGER.
- LIGHTING FIXTURES EXACT LOCATION REFER TO ARCHITECTURAL DRAWINGS. COORDINATE EXACT CABINET DIMENSIONS AND DETAIL WITH MANUFACTURER TO COMPLETE.
- ALL LIGHTING FIXTURES AND LIGHTING DEVICES IN THE NEGATIVE PRESSURE AREAS TO BE SEALED TYPE.

SHEET KEYNOTES

- LIGHTING CONTROL SYSTEM HUB AND CONTROL CABINET, MOUNTED ON WALL AT 1500mm AFF. EXACT LOCATION COORDINATE ON SITE. COORDINATE EXACT CABINET DIMENSIONS AND DETAIL WITH MANUFACTURER TO COMPLETE.
- ALL LIGHTING FIXTURES AND LIGHTING DEVICES IN THE NEGATIVE PRESSURE AREAS TO BE SEALED TYPE.



Rev.	Description	Date
9	ISSUED FOR ADDEM E-1	2024-09-05
8	ISSUED FOR TENDER	2024-08-14
7	ISSUED FOR BUILDING PERMIT	2023-12-19
6	ISSUED FOR MOH 4.1 SUBMISSION	2023-09-25
5	ISSUED FOR 95% CD SUBMISSION	2023-09-06
4	ISSUED FOR 90% CD SUBMISSION	2023-07-31
3	ISSUED FOR 50% CD SUBMISSION	2023-05-08
2	ISSUED FOR MOH 3.2 SUBMISSION	2023-03-13
1	DESIGN DEVELOPMENT SIGNOFF	2022-12-16

Rev. Description Date

Drawing Title:

**LIGHTING - NEW WORK
LVL 5A - MHDU**

As indicated

Project No.: 0020711.00 Checked by: JG

E2205A

**Princess Margaret
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Transplant 2**

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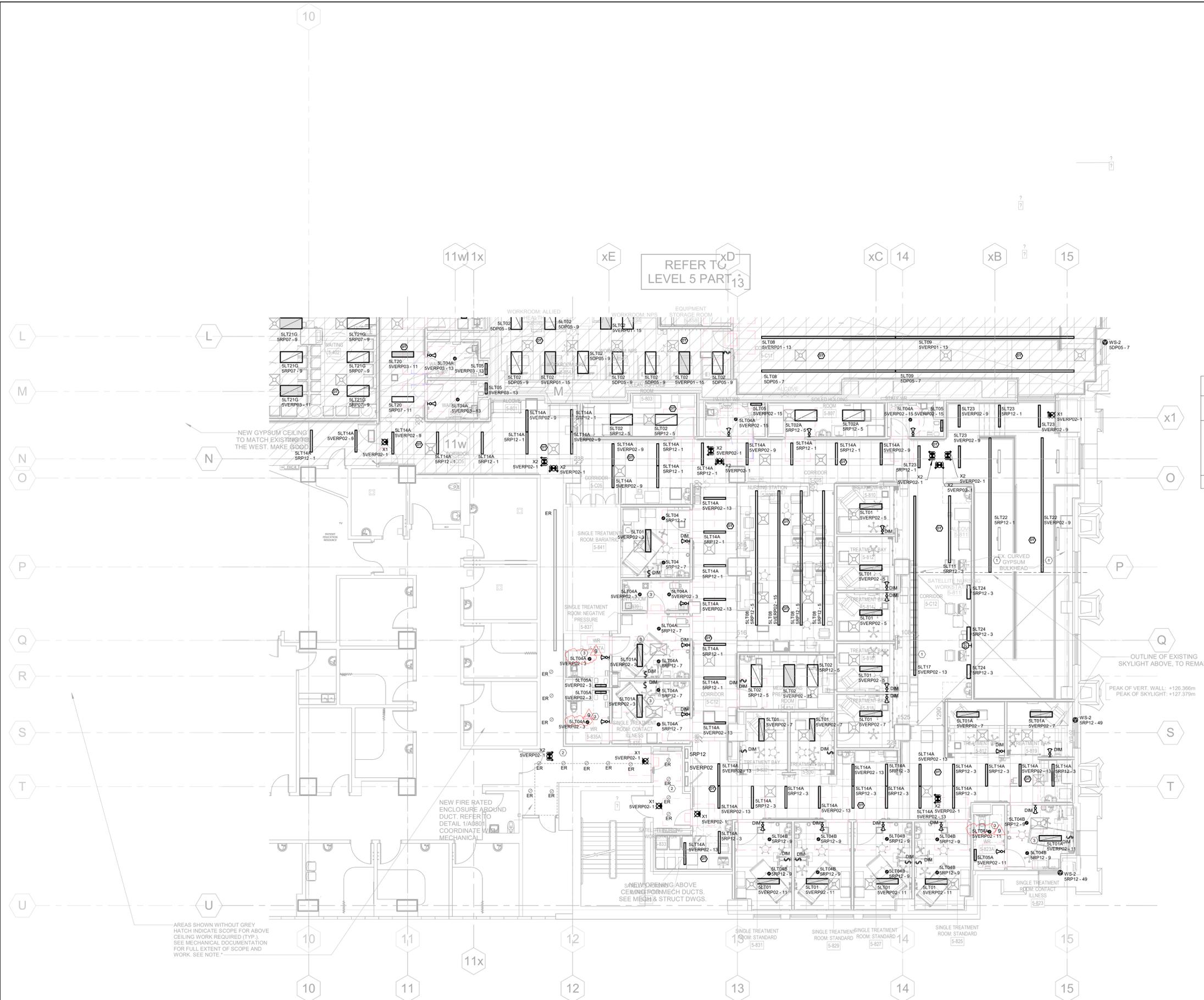


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- GENERAL SHEET NOTES - LIGHTING NEW WORK**
1. COMPLY WITH THE ONTARIO ELECTRICAL SAFETY CODE, CSA-232 AND THE ONTARIO BUILDING CODE. SUBMIT FINAL INSPECTION CERTIFICATE UPON COMPLETION OF WORK TO OWNER.
 2. ELECTRICAL DRAWINGS SHALL BE READ IN CONJUNCTION WITH ARCHITECTURAL, MECHANICAL, AND EQUIPMENT VENDOR DRAWINGS.
 3. PROVIDE LAMACOID IDENTIFICATION NAMEPLATES FOR ALL EQUIPMENT, FEEDERS, DISCONNECTS, LIGHT SWITCHES AND HOSPITAL GRADE RECEPTACLES.
 4. ALL ELECTRICAL SERVICES SHALL COMPLY WITH CSA-232 STANDARDS. ALL RECEPTACLES ARE 'CRITICAL CARE' AND REQUIRES THIRD PARTY TESTING.
 5. ELECTRICAL EQUIPMENT REMOVED MUST BE ISOLATED AND DISCONNECTED AT THE SOURCE PRIOR TO REMOVAL OPERATIONS. DURING ISOLATION AND DISCONNECTION PROCEDURES DANGER TAGS MUST BE ISOLATED AND DISCONNECTED AT THE SOURCE PRIOR TO REMOVAL OPERATIONS. DURING ISOLATION AND DISCONNECTION PROCEDURES DANGER TAGS MUST BE USED TO IDENTIFY ANY FEEDERS OR EQUIPMENT REMAINING ENERGIZED TO ACCOMMODATE NEW CONSTRUCTION. UPDATE TYPE WRITTEN PANEL BOARD DIRECTORIES TO REFLECT 'SPARES' FOR CIRCUITS BEING DEMOLISHED.
 6. OBTAIN PERMISSION FOR OUTAGES FROM THE CLIENT'S REPRESENTATIVE AT LEAST 30 DAYS PRIOR TO THE OUTAGE, IN ACCORDANCE WITH THE PROCESS OF THE FACILITY MANAGER.
 7. LIGHTING FIXTURES EXACT LOCATION REFER TO ARCHITECTURAL DRAWINGS.
 8. CORRIDORS AND PUBLIC AREAS EMERGENCY AND NORMAL LIGHTS CONTROLLED BY SENSORS. DIM DOWN TO 10% WHEN NO OCCUPIED. EMERGENCY LIGHTS IN CORRIDORS AND PUBLIC AREAS TO BE FULL BRIGHT UPON FIRE SITUATION.

- SHEET KEYNOTES**
1. FIXTURES MOUNTED IN T-BAR CEILING. CEILING HEIGHT AND CEILING GRID REFER TO ARCHITECTURAL DRAWING NUMBER A07058. FIXTURES EXACT LOCATION COORDINATE WITH CEILING GRID ON SITE.
 2. ELECTRICAL CONTRACTOR TO REMOVE AND REINSTALL LIGHTING FIXTURES AFFECTED WITHIN THIS AREA DUE TO THE CEILING WORK. LIGHTING FIXTURES LOCATION AND QUANTITY TO BE COORDINATED ON SITE. CONTRACTOR TO INCLUDE FOR ADDITIONAL VISITS WITH THE UNDERSTANDING THAT DEMOLITION AND NEW WORK MAY NOT BE COMPLETED ON THE SAME DAY. ALL WORK SHALL BE COMPLETED AFTER HOURS TO ALLOW FOR NORMAL OPERATIONS TO CONTINUE DURING HOSPITAL OPERATING HOURS. REFER TO ARCHITECTURAL AND PLUMBING PLANS FOR ADDITIONAL INFORMATION.
 3. ALL LIGHTING FIXTURES AND LIGHTING DEVICES IN THE NEGATIVE PRESSURE AREAS TO BE SEALED TYPE.



1 LIGHTING PLAN - NEW WORK - LEVEL 05B PLAN (MHDU)
SCALE: 1 : 100

Rev.	Description	Date
9	ISSUED FOR ADDEM E-1	2024-09-05
8	ISSUED FOR TENDER	2024-08-14
7	ISSUED FOR BUILDING PERMIT	2023-12-19
6	ISSUED FOR MOH 4.1 SUBMISSION	2023-09-25
5	ISSUED FOR 95% CD SUBMISSION	2023-09-06
4	ISSUED FOR 90% CD SUBMISSION	2023-07-31
3	ISSUED FOR 50% CD SUBMISSION	2023-05-08
2	ISSUED FOR MOH 3.2 SUBMISSION	2023-03-13
1	DESIGN DEVELOPMENT SIGNOFF	2022-12-16

Drawing Title:
**LIGHTING - NEW WORK
LVL 5B - MHDU**

As indicated
Project No.: 0020711.00 Checked by: JG

E2205B

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10	ISSUED FOR ADDEM E-1	2024-09-05
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3	ISSUED FOR MOH 3.2 SUBMISSION	2023-03-13
2	DESIGN DEVELOPMENT SIGNOFF	2022-12-16
1	DESIGN DEVELOPMENT SIGN-OFF	2022-12-02

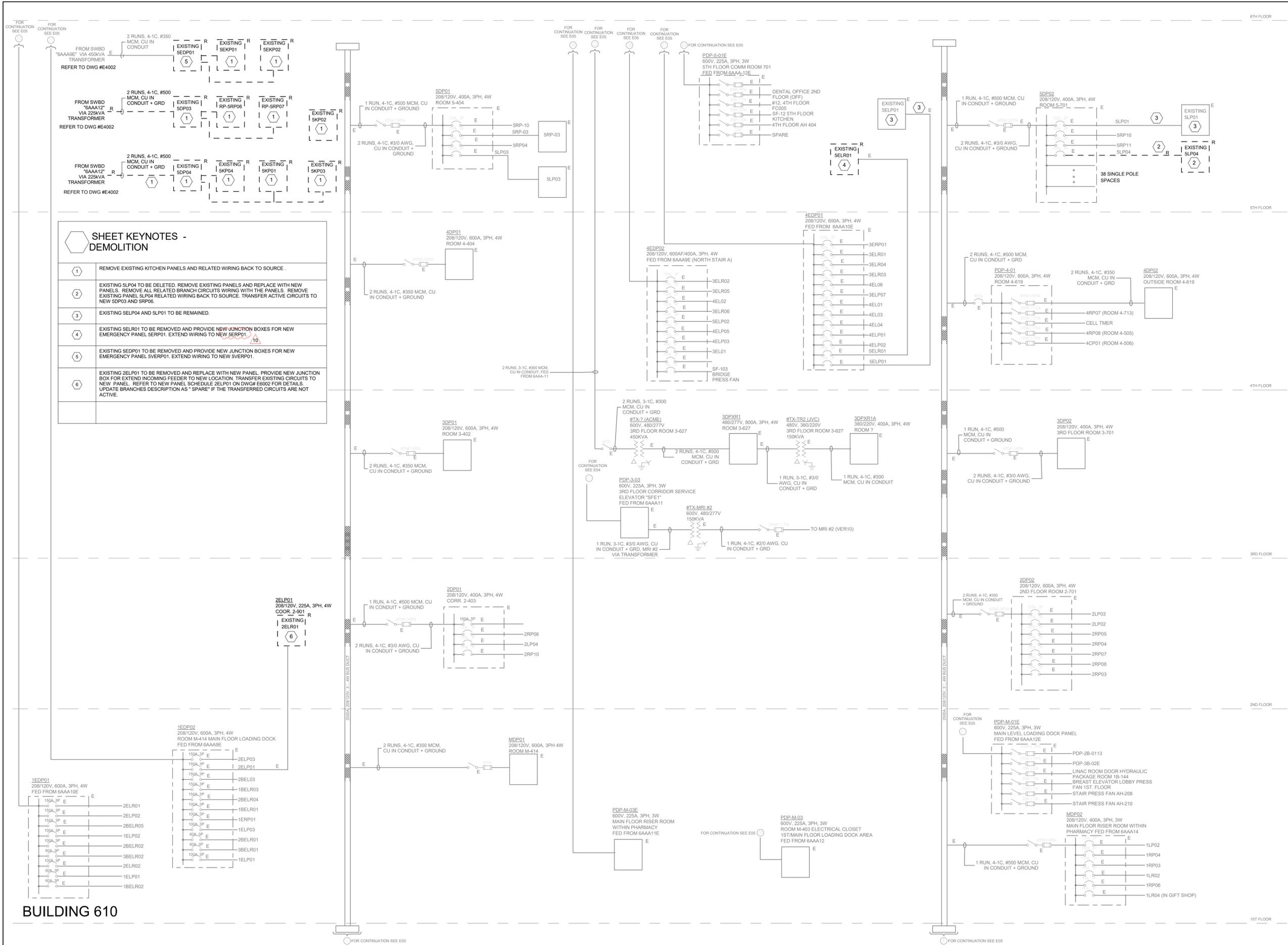
Rev. Description Date

Drawing Title:

**SINGLE LINE DIAGRAM -
DEMOLITION - BUILDING
610 LEVEL 02 & LEVEL 05
(MH & MHDU)**

Project No.: 0020711.00 Checked by: JG

E4002



**SHEET KEYNOTES -
DEMOLITION**

- REMOVE EXISTING KITCHEN PANELS AND RELATED WIRING BACK TO SOURCE.
- EXISTING SLP04 TO BE DELETED. REMOVE EXISTING PANELS AND REPLACE WITH NEW PANELS. REMOVE ALL RELATED BRANCH CIRCUITS WIRING WITH THE PANELS. REMOVE EXISTING PANEL SLP04 RELATED WIRING BACK TO SOURCE. TRANSFER ACTIVE CIRCUITS TO NEW SDP03 AND SRP06.
- EXISTING SLP04 AND SLP01 TO BE REMAINED.
- EXISTING SELR01 TO BE REMOVED AND PROVIDE NEW JUNCTION BOXES FOR NEW EMERGENCY PANEL SERP01. EXTEND WIRING TO NEW SERP01.
- EXISTING SEDP01 TO BE REMOVED AND PROVIDE NEW JUNCTION BOXES FOR NEW EMERGENCY PANEL SVERP01. EXTEND WIRING TO NEW SVERP01.
- EXISTING ZELP01 TO BE REMOVED AND REPLACE WITH NEW PANEL. PROVIDE NEW JUNCTION BOX FOR EXTEND INCOMING FEEDER TO NEW LOCATION. TRANSFER EXISTING CIRCUITS TO NEW PANEL. REFER TO NEW PANEL SCHEDULE ZELP01 ON DWG# E6002 FOR DETAILS. UPDATE BRANCHES DESCRIPTION AS "SPARE" IF THE TRANSFERRED CIRCUITS ARE NOT ACTIVE.

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BUILDING 610

**Princess Margaret
Cancer Centre Stem Cell
Transplant 2**

**Part B
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3	ISSUED FOR MOH 3.2 SUBMISSION	2023-03-13
2	DESIGN DEVELOPMENT SIGN-OFF	2022-12-16
1	DESIGN DEVELOPMENT SIGN-OFF	2022-12-02

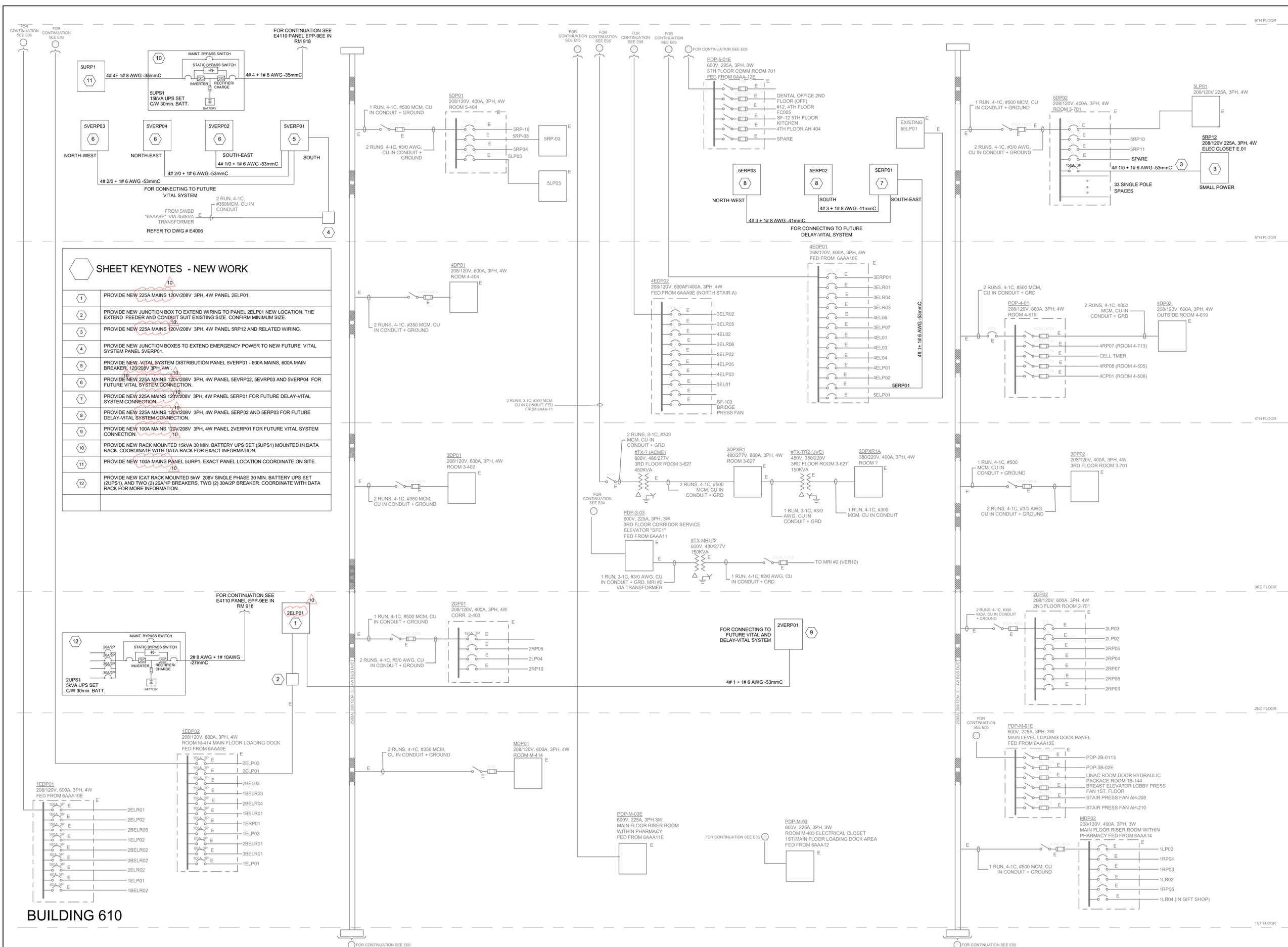
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Drawing Title:

**SINGLE LINE DIAGRAM -
NEW WORK - BUILDING
620 LEVEL 02 & LEVEL 05
(MH & MHDU)**

Project No.: 0020711.00 Checked by: JG

E4102



SHEET KEYNOTES - NEW WORK

1	PROVIDE NEW 225A MAINS 120V/208V 3PH, 4W PANEL 2ELP01.
2	PROVIDE NEW JUNCTION BOX TO EXTEND WIRING TO PANEL 2ELP01 NEW LOCATION. THE EXTEND FEEDER AND CONDUIT SUIT EXISTING SIZE. CONFIRM MINIMUM SIZE.
3	PROVIDE NEW 225A MAINS 120V/208V 3PH, 4W PANEL SRP12 AND RELATED WIRING.
4	PROVIDE NEW JUNCTION BOXES TO EXTEND EMERGENCY POWER TO NEW FUTURE VITAL SYSTEM PANEL 5VERP01.
5	PROVIDE NEW VITAL SYSTEM DISTRIBUTION PANEL 5VERP01 - 600A MAINS, 600A MAIN BREAKER, 120V/208V 3PH, 4W.
6	PROVIDE NEW 225A MAINS 120V/208V 3PH, 4W PANEL SEVRP02, SEVRP03 AND SEVRP04 FOR FUTURE VITAL SYSTEM CONNECTION.
7	PROVIDE NEW 225A MAINS 120V/208V 3PH, 4W PANEL SERP01 FOR FUTURE DELAY-VITAL SYSTEM CONNECTION.
8	PROVIDE NEW 225A MAINS 120V/208V 3PH, 4W PANEL SERP02 AND SERP03 FOR FUTURE DELAY-VITAL SYSTEM CONNECTION.
9	PROVIDE NEW 100A MAINS 120V/208V 3PH, 4W PANEL 2VERP01 FOR FUTURE VITAL SYSTEM CONNECTION.
10	PROVIDE NEW RACK MOUNTED 15KVA 30 MIN. BATTERY UPS SET (5UPS1) MOUNTED IN DATA RACK. COORDINATE WITH DATA RACK FOR EXACT INFORMATION.
11	PROVIDE NEW 100A MAINS PANEL SURP1. EXACT PANEL LOCATION COORDINATE ON SITE.
12	PROVIDE NEW ICAT RACK MOUNTED 6KW 208V SINGLE PHASE 30 MIN. BATTERY UPS SET (2UPS1), AND TWO (2) 20A/2P BREAKERS, TWO (2) 30A/2P BREAKER. COORDINATE WITH DATA RACK FOR MORE INFORMATION.

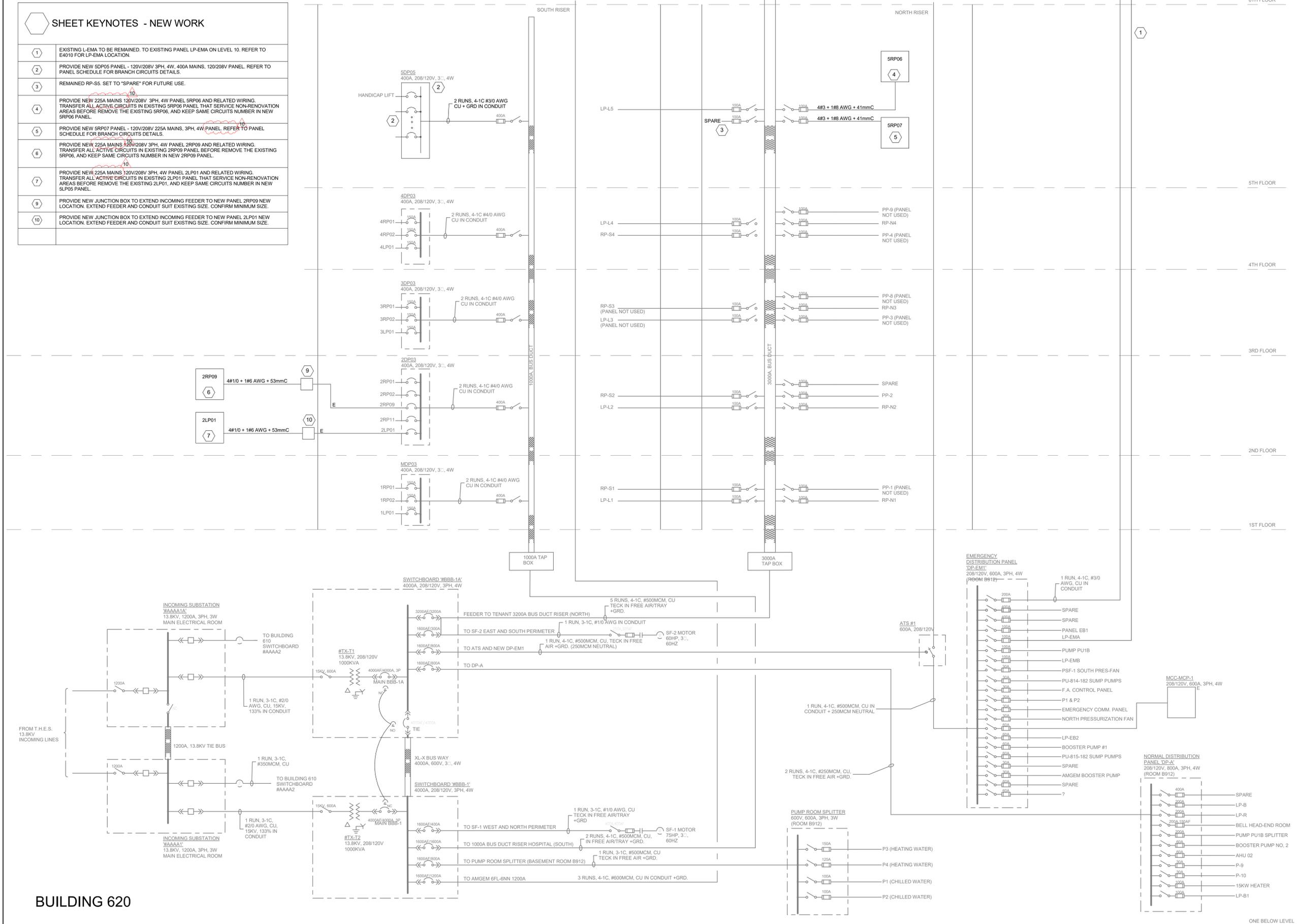
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BUILDING 610

SHEET KEYNOTES - NEW WORK

- 1 EXISTING L-EMA TO BE REMAINED. TO EXISTING PANEL LP-EMA ON LEVEL 10. REFER TO E4010 FOR LP-EMA LOCATION.
- 2 PROVIDE NEW SDP05 PANEL - 120V/208V 3PH, 4W, 400A MAINS, 120/208V PANEL. REFER TO PANEL SCHEDULE FOR BRANCH CIRCUITS DETAILS.
- 3 REMAINED RP-S5. SET TO "SPARE" FOR FUTURE USE.
- 4 PROVIDE NEW 225A MAINS 120V/208V 3PH, 4W PANEL SRP06 AND RELATED WIRING. TRANSFER ALL ACTIVE CIRCUITS IN EXISTING SRP06 PANEL THAT SERVICE NON-RENOVATION AREAS BEFORE REMOVE THE EXISTING SRP06, AND KEEP SAME CIRCUITS NUMBER IN NEW SRP06 PANEL.
- 5 PROVIDE NEW 225A MAINS 120V/208V 3PH, 4W PANEL SRP07 AND RELATED WIRING. TRANSFER ALL ACTIVE CIRCUITS IN EXISTING SRP07 PANEL BEFORE REMOVE THE EXISTING SRP07, AND KEEP SAME CIRCUITS NUMBER IN NEW SRP07 PANEL.
- 6 PROVIDE NEW 225A MAINS 120V/208V 3PH, 4W PANEL 2RP09 AND RELATED WIRING. TRANSFER ALL ACTIVE CIRCUITS IN EXISTING 2RP09 PANEL BEFORE REMOVE THE EXISTING 2RP09, AND KEEP SAME CIRCUITS NUMBER IN NEW 2RP09 PANEL.
- 7 PROVIDE NEW 225A MAINS 120V/208V 3PH, 4W PANEL 2LP01 AND RELATED WIRING. TRANSFER ALL ACTIVE CIRCUITS IN EXISTING 2LP01 PANEL THAT SERVICE NON-RENOVATION AREAS BEFORE REMOVE THE EXISTING 2LP01, AND KEEP SAME CIRCUITS NUMBER IN NEW 2LP01 PANEL.
- 9 PROVIDE NEW JUNCTION BOX TO EXTEND INCOMING FEEDER TO NEW PANEL 2RP09 NEW LOCATION. EXTEND FEEDER AND CONDUIT SUIT EXISTING SIZE. CONFIRM MINIMUM SIZE.
- 10 PROVIDE NEW JUNCTION BOX TO EXTEND INCOMING FEEDER TO NEW PANEL 2LP01 NEW LOCATION. EXTEND FEEDER AND CONDUIT SUIT EXISTING SIZE. CONFIRM MINIMUM SIZE.

FOR CONTINUATION SEE E02 FOR CONTINUATION SEE E02 FOR CONTINUATION SEE E02 FOR CONTINUATION SEE E02 /E4110



**Princess Margaret
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10	ISSUED FOR ADDEM E-1	2024-09-05
9	ISSUED FOR TENDER	2024-08-14
8	ISSUED FOR BUILDING PERMIT	2023-12-19
7	ISSUED FOR MOH 4.1 SUBMISSION	2023-09-25
6	ISSUED FOR 95% CD SUBMISSION	2023-09-06
5	ISSUED FOR 90% CD SUBMISSION	2023-07-31
4	ISSUED FOR 50% CD SUBMISSION	2023-05-08
3	ISSUED FOR MOH 3.2 SUBMISSION	2023-03-13
2	DESIGN DEVELOPMENT SIGN-OFF	2022-12-16
1	DESIGN DEVELOPMENT SIGN-OFF	2022-12-02

Drawing Title:
**SINGLE LINE DIAGRAM -
NEW WORK - BUILDING
620 LEVEL 02 & LEVEL 05
(MH & MHDU)**

Project No.: 0020711.00 Checked by: JG

E4105

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BUILDING 620

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Transplant 2**

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Rev.	Description	Date
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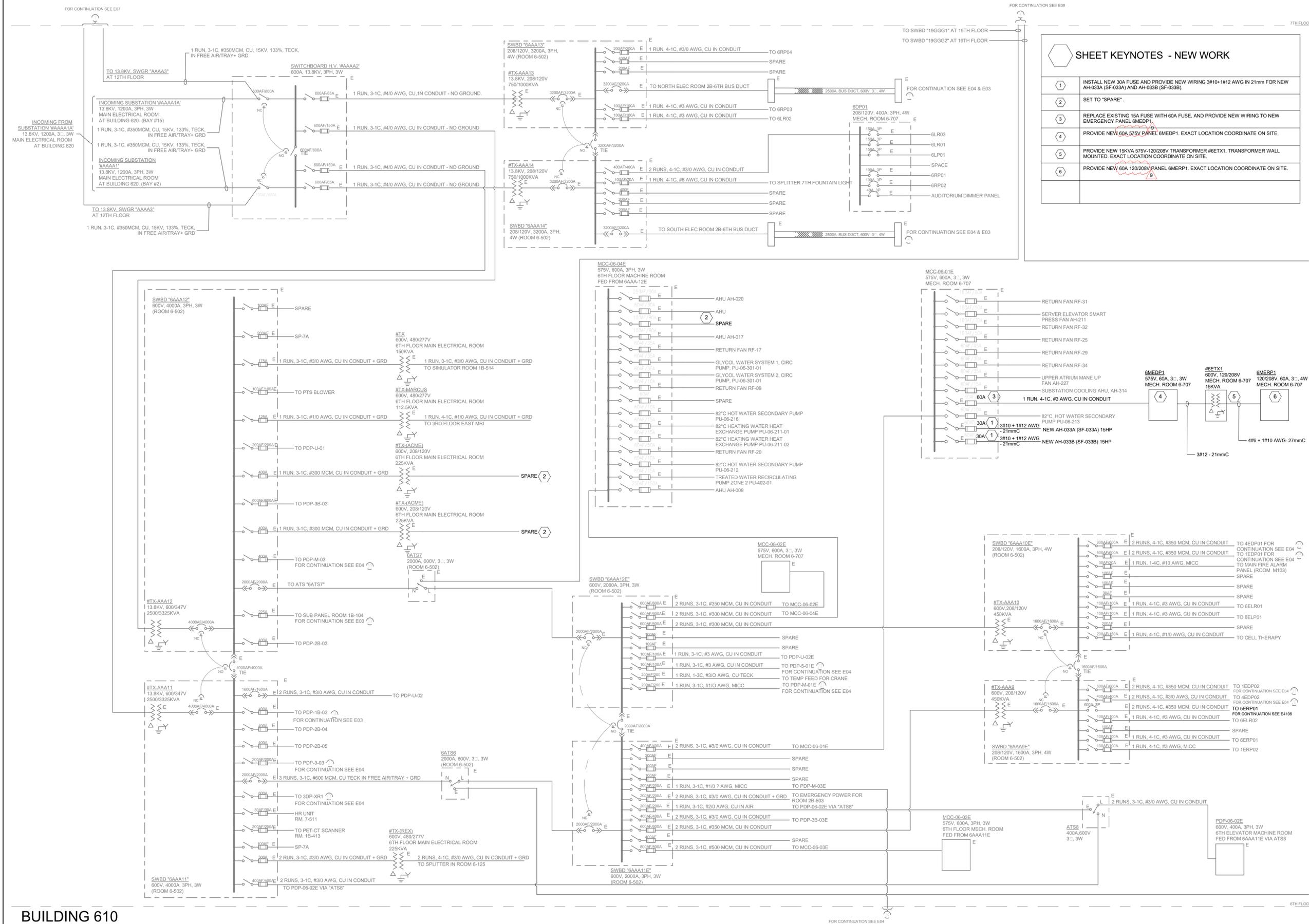
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**SINGLE LINE DIAGRAM -
NEW WORK - BUILDING
610 LVL 06 (MHDU)**

1 : 25

Project No.: 0020711.00 Checked by: JG

E4106



SHEET KEYNOTES - NEW WORK

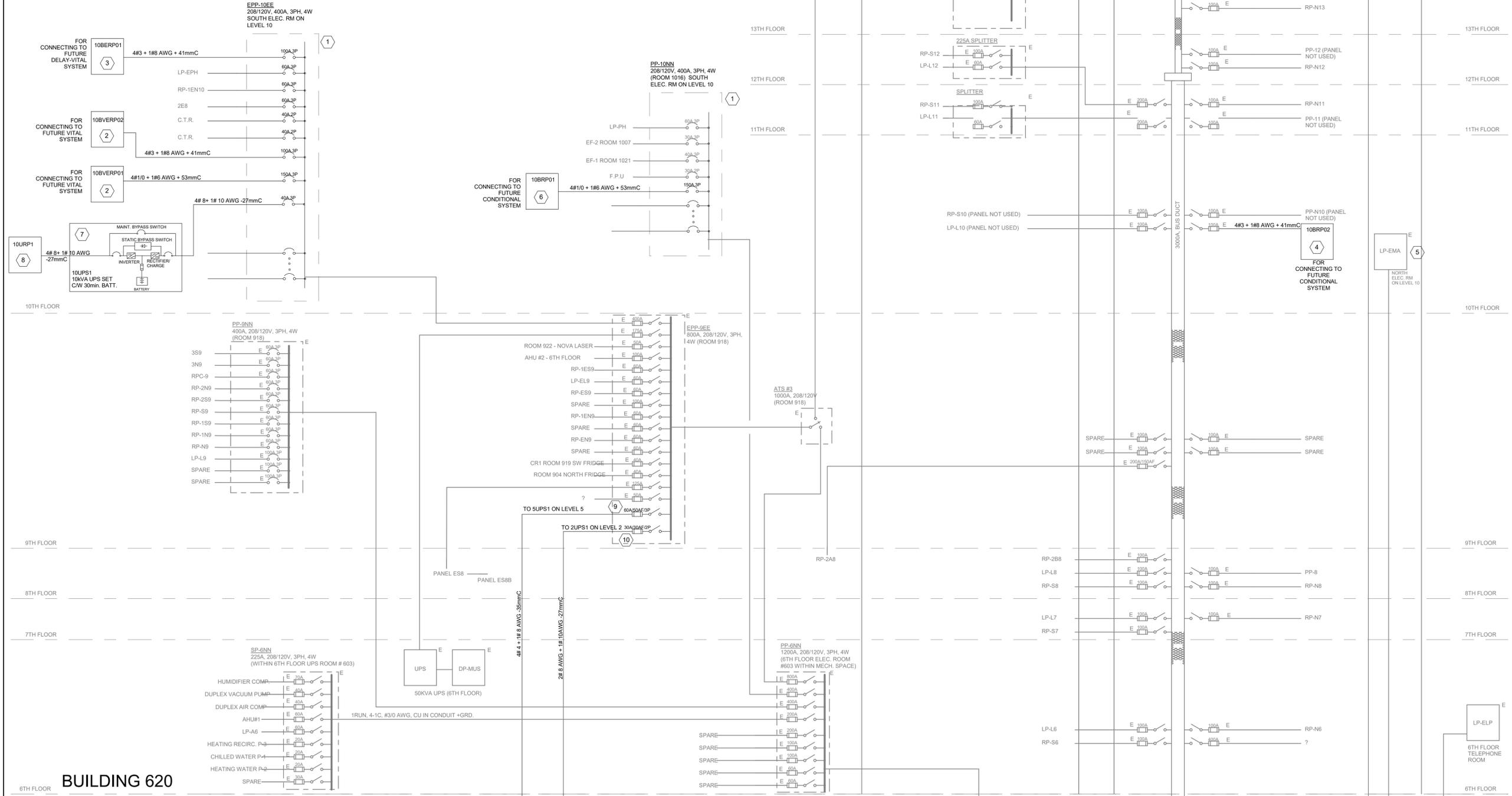
1	INSTALL NEW 30A FUSE AND PROVIDE NEW WIRING 3#10+1#12 AWG IN 21mm FOR NEW AH-033A (SF-033A) AND AH-033B (SF-033B)
2	SET TO "SPARE".
3	REPLACE EXISTING 15A FUSE WITH 60A FUSE, AND PROVIDE NEW WIRING TO NEW EMERGENCY PANEL 6MEDP1.
4	PROVIDE NEW 60A 575V PANEL 6MEDP1. EXACT LOCATION COORDINATE ON SITE.
5	PROVIDE NEW 15KVA 575V-120/208V TRANSFORMER #6ETX1. TRANSFORMER WALL MOUNTED. EXACT LOCATION COORDINATE ON SITE.
6	PROVIDE NEW 60A 120/208V PANEL 6MERP1. EXACT LOCATION COORDINATE ON SITE.

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BUILDING 610

SHEET KEYNOTES - NEW WORK

- 1 EXISTING EPP-10E, PP-10NN AND LP-EL10 TO BE REPLACE WITH NEW 82 CIRCUITS PANELS. TRANSFER EXISTING CONNECTED REMAINED LOADS TO NEW PANEL. REFER TO PANEL SCHEDULE FOR DETAILS.
- 2 PROVIDE NEW 150A/3P BREAKERS FOR NEW PANEL 10BERP01 AND 10BERP02. PROVIDE 208/120V, 225A, 3PH, 4W PANELS FOR 10BERP01 AND 10BERP02.
- 3 PROVIDE NEW 100A MAINS, 120/208V 3PH, 4W PANELS 10BERP01.
- 4 PROVIDE NEW 150A/3P BREAKER FOR NEW PANEL 10BRP02. PROVIDE 208/120V, 225A, 3PH, 4W PANEL 10BRP02.
- 5 EXISTING LP-EMA TO BE REMAINED. UPDATE PANEL DIRECTORY AFTER COMPLETE THE WORKS.
- 6 PROVIDE NEW 225A MAINS, 120/208V 3PH, 4W PANEL 10BRP01.
- 7 PROVIDE NEW 1CAT RACK MOUNTED 10KVA 30 MIN. BATTERY UPS SET (10UPS1) MOUNTED ON DATA RACK. COORDINATE WITH DATA RACK FOR MORE INFORMATION.
- 8 PROVIDE NEW 100A MAINS PANEL 10URP1. EXACT PANEL LOCATION COORDINATE ONSITE.
- 9 PROVIDE NEW 60A/50AF/3P FUSED SWITCH IN EPP-9EE PANEL FOR NEW SUPS1 SET. CHECK PANEL SPACE PRIOR TO INSTALL THE NEW SWITCH.
- 10 PROVIDE NEW 30A/30AF/2P FUSED SWITCH IN EPP-9EE PANEL FOR NEW ZUPS1 SET. CHECK PANEL SPACE PRIOR TO INSTALL THE NEW SWITCH.



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BUILDING 620



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1	DESIGN DEVELOPMENT SIGN-OFF	2022-12-02

Rev. Description Date

Drawing Title:
**SINGLE LINE DIAGRAM -
 NEW WORK - BUILDING
 620 LEVEL 10 (DSC)**
 1 : 25
 Project No.: 0020711.00 Checked by: JG

E4110