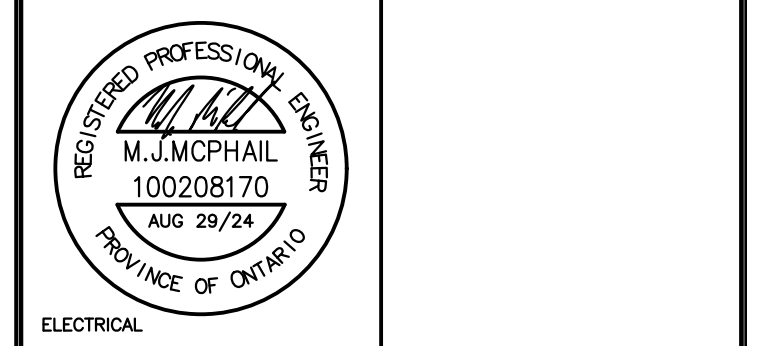


- NOTES:**
- ① 4 PARALLEL RUNS OF 4 X 1C #500 MCM CU + #3 AWG CU BOND IN RACEWAY
  - ② 4 X 1C #250 MCM CU + #4 AWG CU BOND IN RACEWAY
  - ③ 4 X 1C # 500 AWG CU + #4 AWG CU BOND IN RACEWAY
  - ④ 3C #3 AWG CU + #8 AWG CU BOND IN RACEWAY.
  - ⑤ 3C #10 AWG CU + #12 AWG CU BOND IN RACEWAY
  - ⑥ 4C #10 AWG CU + #12 AWG CU BOND IN RACEWAY
  - ⑦ 4 PARALLEL RUNS OF 4 X 1C #350MCM AWG CU + #4 AWG CU BOND IN RACEWAY
  - ⑧ CONTRACTOR TO COORDINATE SUITE PANEL METERING EXACT REQUIREMENTS WITH OWNER 3RD PARTY VENDOR.
  - ⑨ CONTRACTOR TO PROVIDE ALL POWER AND COMMUNICATIONS WIRING AND CONDUIT FROM BUILDING TO GENERATOR INCLUDING MAIN POWER, SHORE POWER, COMMUNICATIONS AND FIRE ALARM CONNECTIONS.

NO.	DESCRIPTION	DATE	BY
0	ISSUED FOR TENDER	2024.08.29	MJM

**REVISIONS**

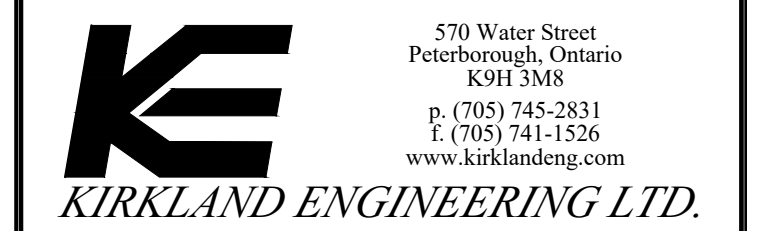
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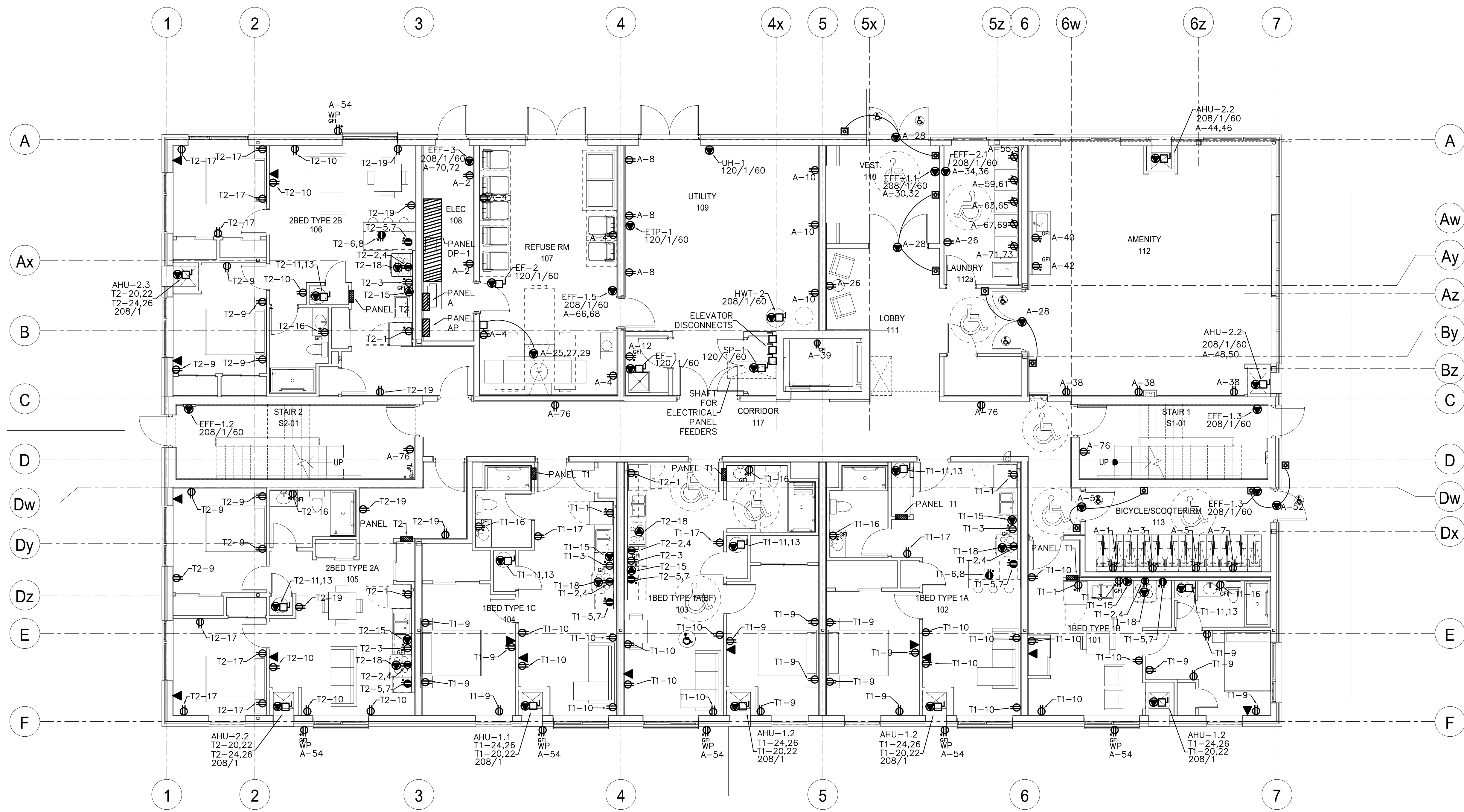


PROJECT  
**COURTICE SENIOR DEVELOPMENT**

1697 HIGHWAY No 2  
CLARINGTON, ON

TITLE  
**SLD**

DESIGN	MJM	SCALE AS NOTED
DRAWN	AJM	DWG NO.
CHECKED	MJM	<b>E1</b>
APPROVED	MJM	
PROJECT	7393	



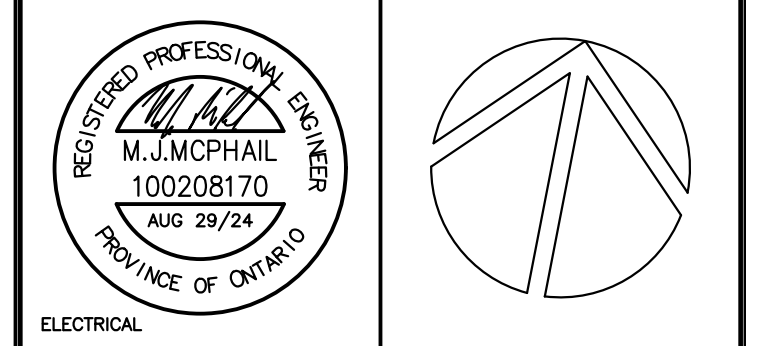
**POWER LAYOUT FIRST FLOOR**  
 SCALE: 1:75  
 0 1000 2000 3000 4000 5000 mm

ELECTRICAL SYMBOLS LEGEND	
	DUPLEX RECEPTACLE
	COUNTER MOUNT
	GFI DUPLEX RECEPTACLE
	STOVE RECEPTACLE
	SPLIT DUPLEX RECEPTACLE
	DIRECT CONNECTION
	DISCONNECT SWITCH
	DRYER RECEPTACLE
	DATA
	PANEL BOARD
	WEATHER PROOF

- NOTES:**
- ALL SUITE AHU UNITS REQUIRE TWO INDEPENDENT 208/1/60 CIRCUITS, ONE FOR THE HEAT PUMP AND ONE FOR THE SUPPLEMENTAL E4LECTRIC HEAT. REFER TO PANEL SCHEDULES FOR CIRCUIT AMPACITIES.
  - PROVIDE A 12" X 12" BOX RECESSED IN ENTRANCE CLOSET WALL IN ALL SUITES FOR USE BY I.T/COMMS CONTRACTOR. RUN ALL CONDUITS FOR DATA/TV/PHONE TO CLOSET BOX AND PROVIDE 1" X 2" CONDUIT FROM BOX TO COMM CLOSET OR ACCESSIBLE CEILING SPACE. COORDINATE WITH COMMS CONTRACTOR ON SITE.

REVISIONS			
NO.	DESCRIPTION	DATE	BY
0	ISSUED FOR TENDER	2024.08.29	MJM

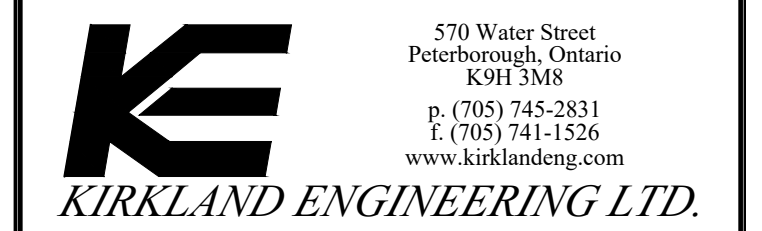
Kirkland Engineering Ltd BCIN: 28857



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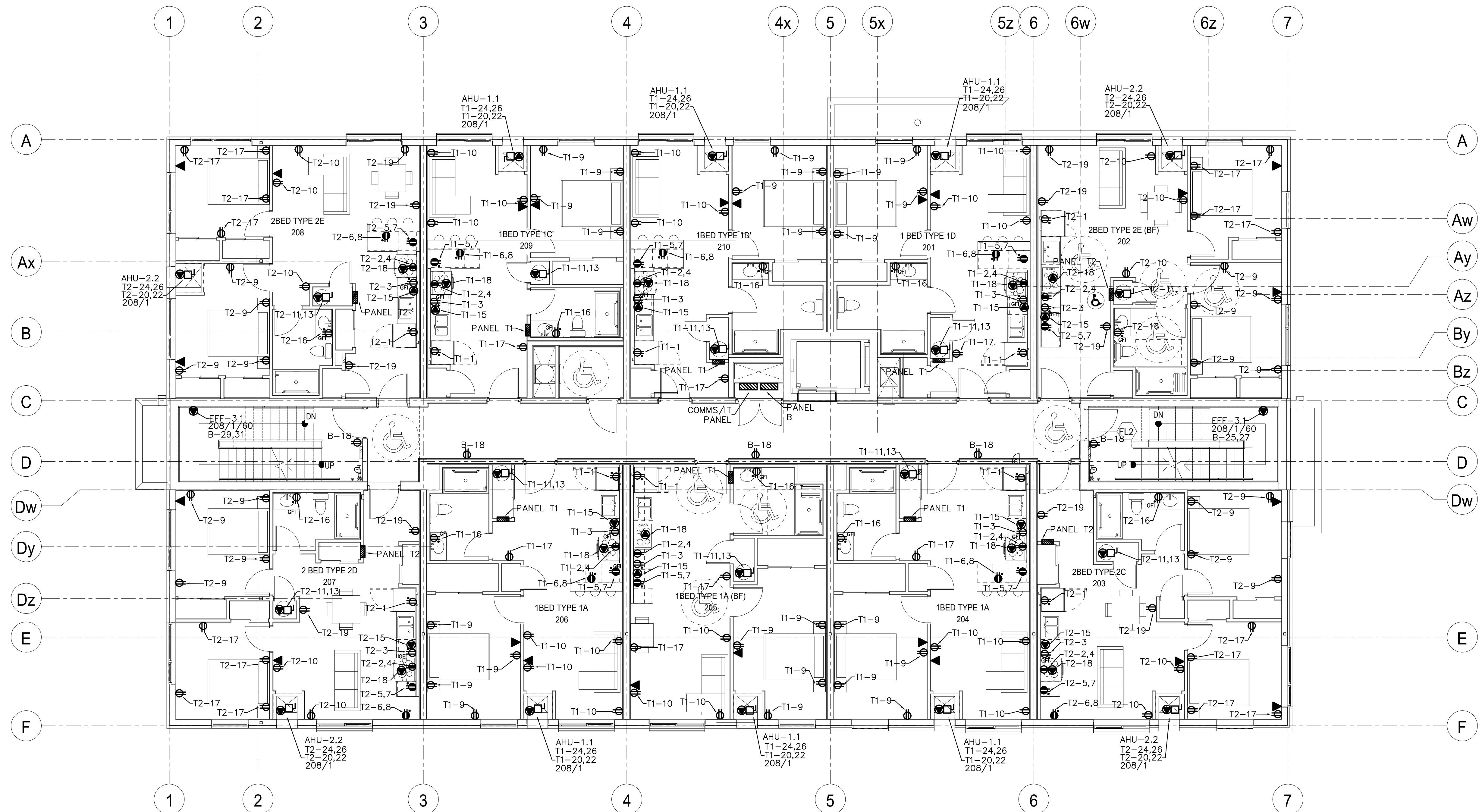
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PROJECT  
**COURTICE SENIOR DEVELOPMENT**  
 1697 HIGHWAY No 2  
 CLARINGTON, ON

TITLE  
**FIRST FLOOR POWER**

DESIGN	MJM	SCALE AS NOTED
DRAWN	AJM	DWG NO.
CHECKED	MJM	<b>E2</b>
APPROVED	MJM	
PROJECT	7393	



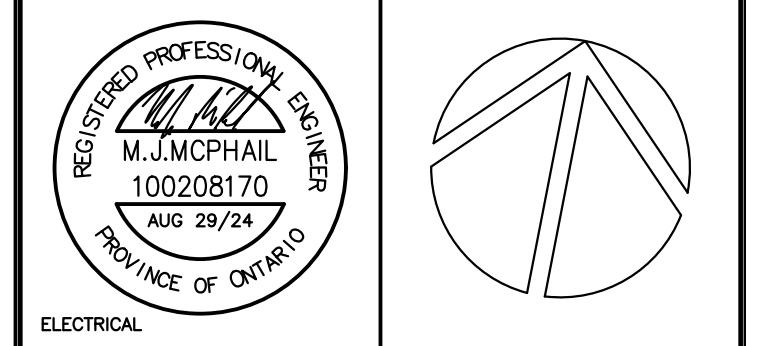
**POWER LAYOUT SECOND FLOOR**  
 SCALE: 1:75  
 0 1000 2000 3000 4000 5000 mm

ELECTRICAL SYMBOLS LEGEND	
	DUPLEX RECEPTACLE
	COUNTER MOUNT
	GFI DUPLEX RECEPTACLE
	STOVE RECEPTACLE
	SPLIT DUPLEX RECEPTACLE
	DIRECT CONNECTION
	DISCONNECT SWITCH
	DRYER RECEPTACLE
	DATA
	PANEL BOARD
WP	WEATHER PROOF

- NOTES:**
- ALL SUITE AHU UNITS REQUIRE TWO INDEPENDENT 208/1/60 CIRCUITS, ONE FOR THE HEAT PUMP AND ONE FOR THE SUPPLEMENTAL E4LECTRIC HEAT. REFER TO PANEL SCHEDULES FOR CIRCUIT AMPACITIES.
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NO.	DESCRIPTION	DATE	BY
0	ISSUED FOR TENDER	2024.08.29	MJM

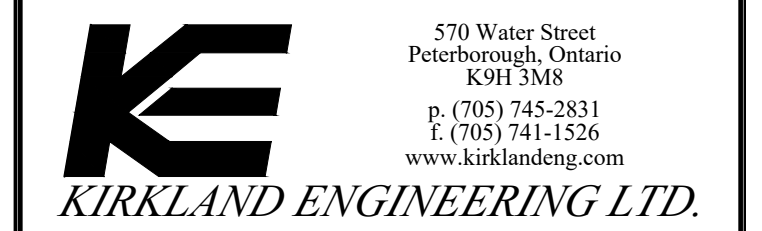
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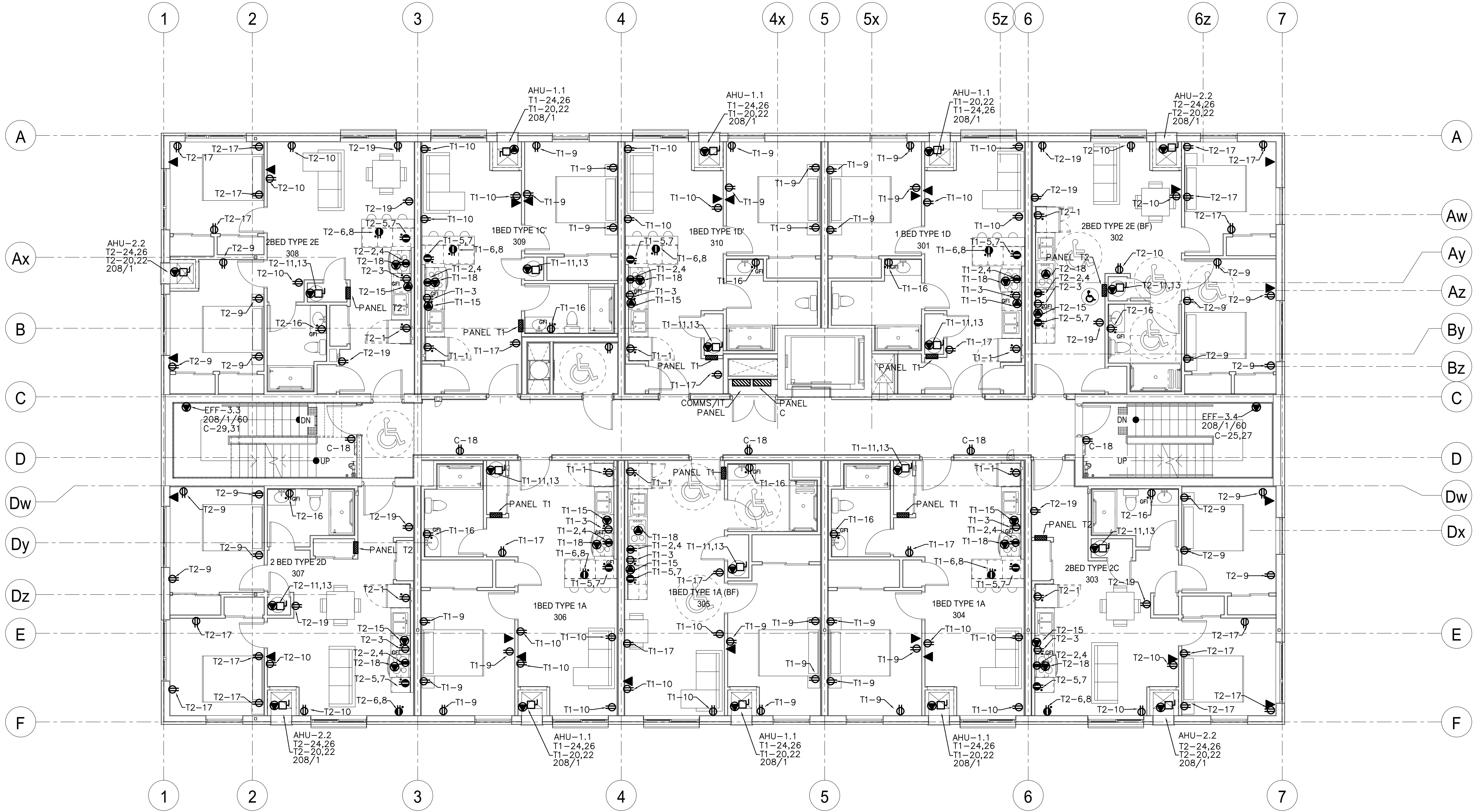
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PROJECT  
**COURTICE SENIOR DEVELOPMENT**  
 1697 HIGHWAY No 2  
 CLARINGTON, ON

TITLE  
**SECOND FLOOR POWER**

DESIGN	MJM	SCALE AS NOTED
DRAWN	AJM	DWG NO.
CHECKED	MJM	<b>E3</b>
APPROVED	MJM	
PROJECT	7393	



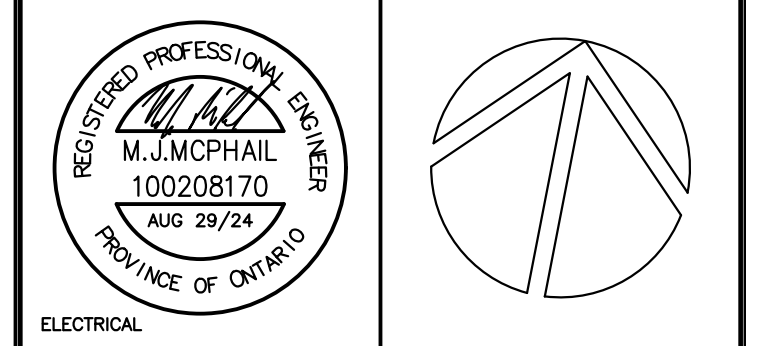
**POWER LAYOUT THIRD FLOOR**  
 SCALE: 1:75  
 0 1000 2000 3000 4000 5000 mm

ELECTRICAL SYMBOLS LEGEND	
	DUPLEX RECEPTACLE
	COUNTER MOUNT
	GFI DUPLEX RECEPTACLE
	STOVE RECEPTACLE
	SPLIT DUPLEX RECEPTACLE
	DIRECT CONNECTION
	DISCONNECT SWITCH
	DRYER RECEPTACLE
	DATA
	PANEL BOARD
	WEATHER PROOF

- NOTES:**
- ALL SUITE AHU UNITS REQUIRE TWO INDEPENDENT 208/1/60 CIRCUITS, ONE FOR THE HEAT PUMP AND ONE FOR THE SUPPLEMENTAL E4LECTRIC HEAT. REFER TO PANEL SCHEDULES FOR CIRCUIT AMPACITIES.
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NO.	DESCRIPTION	DATE	BY
0	ISSUED FOR TENDER	2024.08.29	MJM

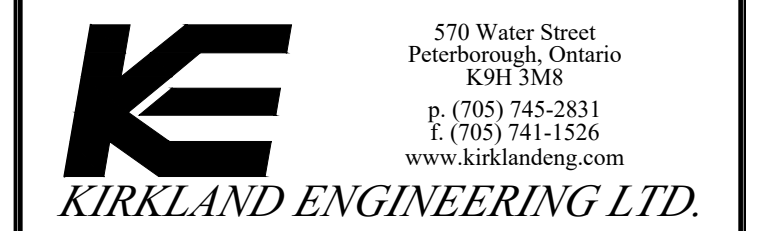
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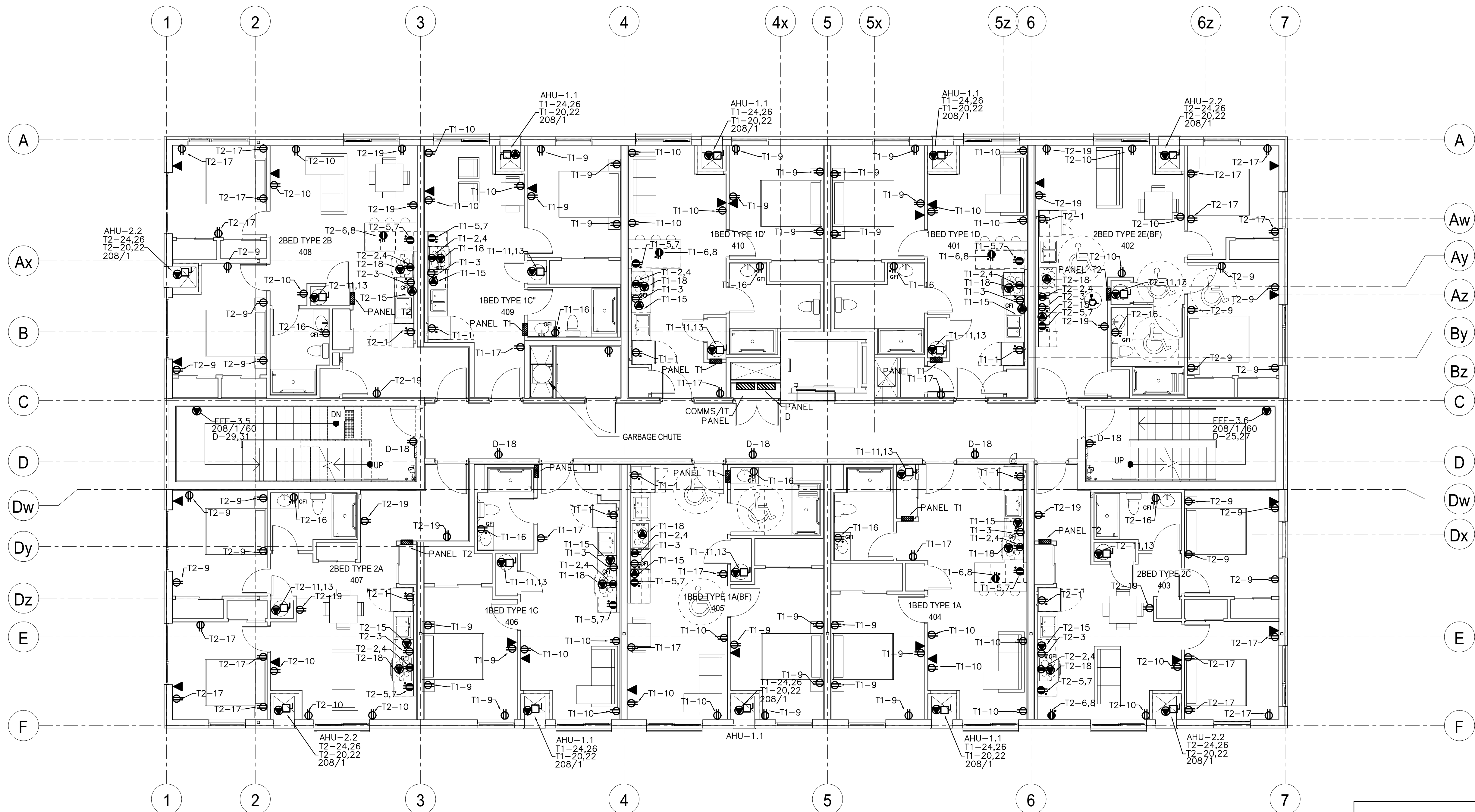
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PROJECT  
**COURTICE SENIOR DEVELOPMENT**  
 1697 HIGHWAY No 2  
 CLARINGTON, ON

TITLE  
**THIRD FLOOR POWER LAYOUT**

DESIGN	MJM	SCALE AS NOTED
DRAWN	AJM	DWG NO.
CHECKED	MJM	<b>E4</b>
APPROVED	MJM	
PROJECT	7393	



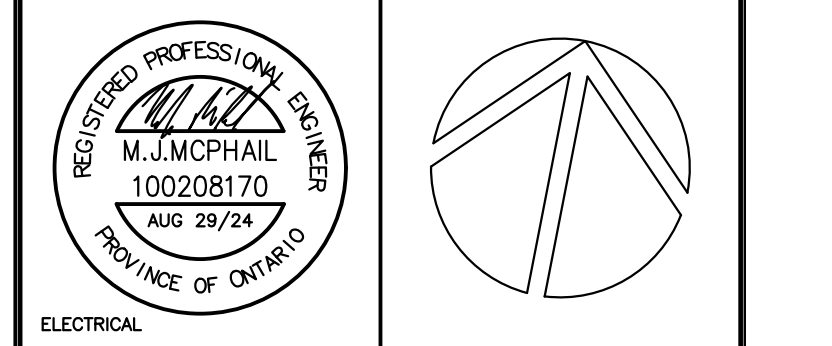
**POWER LAYOUT FORTH FLOOR**  
 SCALE: 1:75  
 0 1000 2000 3000 4000 5000 mm

ELECTRICAL SYMBOLS LEGEND	
	DUPLEX RECEPTACLE
	COUNTER MOUNT
	GFI DUPLEX RECEPTACLE
	STOVE RECEPTACLE
	SPLIT DUPLEX RECEPTACLE
	DIRECT CONNECTION
	DISCONNECT SWITCH
	DRYER RECEPTACLE
	DATA
	PANEL BOARD
	WEATHER PROOF

- NOTES:**
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REVISIONS			
NO.	DESCRIPTION	DATE	BY
0	ISSUED FOR TENDER	2024.08.29	MJM

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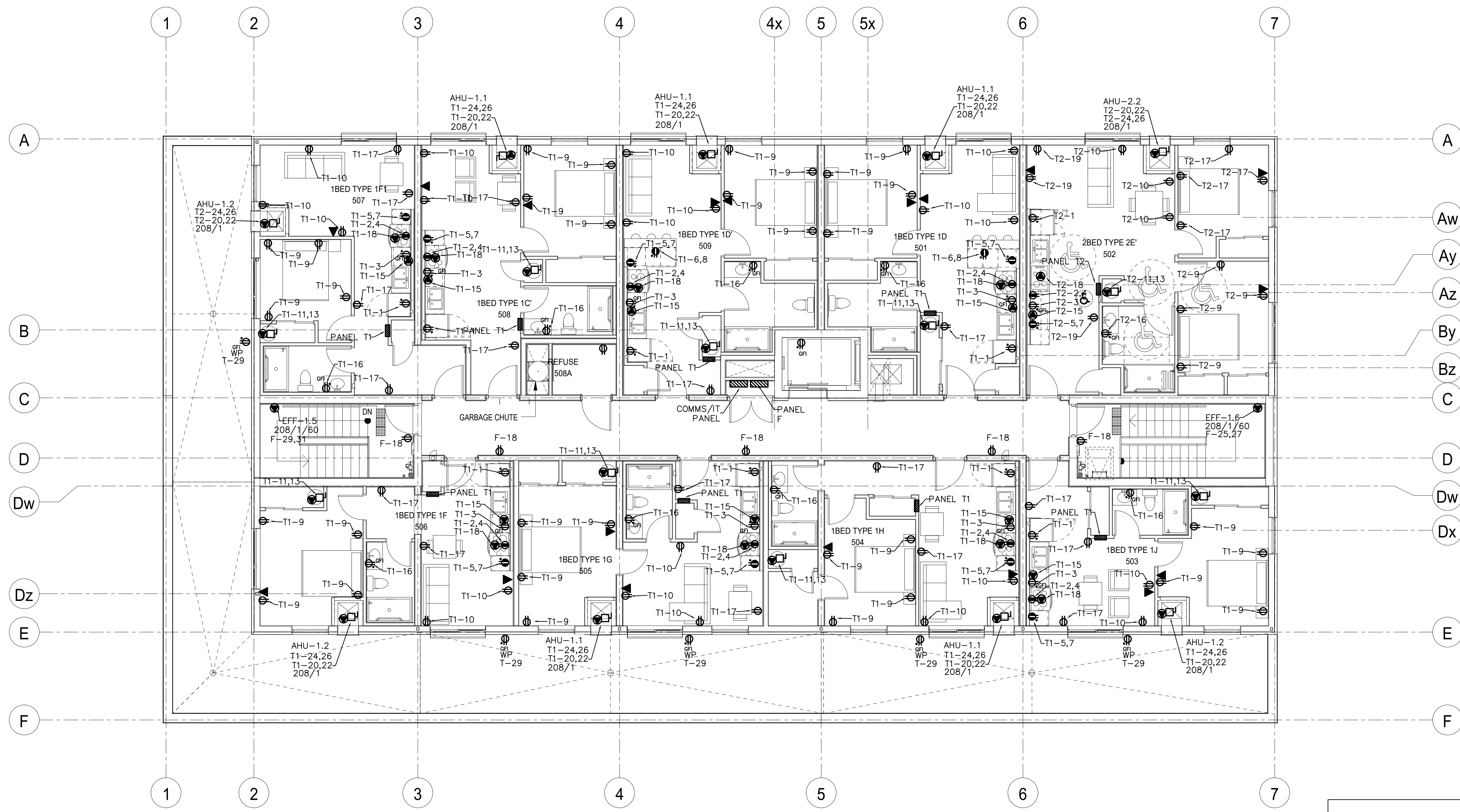
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PROJECT  
**COURTICE SENIOR DEVELOPMENT**  
 1697 HIGHWAY No 2  
 CLARINGTON, ON

TITLE  
**FORTH FLOOR POWER**

DESIGN	MJM	SCALE AS NOTED
DRAWN	AJM	DWG NO.
CHECKED	MJM	<b>E5</b>
APPROVED	MJM	
PROJECT	7393	



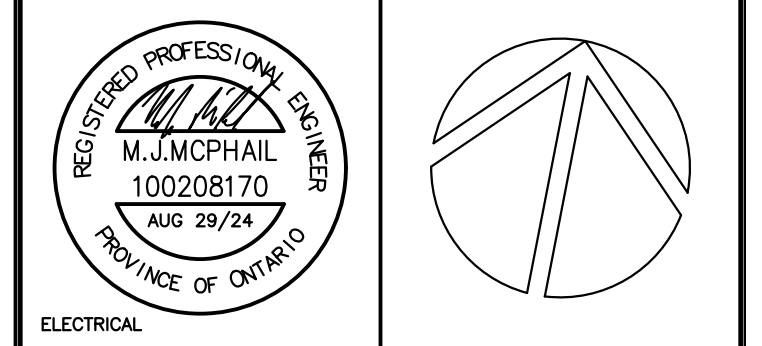
**POWER LAYOUT FIFTH FLOOR**  
 SCALE: 1:75  
 1000 0 1000 2000 3000 4000 5000mm

ELECTRICAL SYMBOLS LEGEND	
	DUPLEX RECEPTACLE
	COUNTER MOUNT
	GFI DUPLEX RECEPTACLE
	STOVE RECEPTACLE
	SPLIT DUPLEX RECEPTACLE
	DIRECT CONNECTION
	DISCONNECT SWITCH
	DRYER RECEPTACLE
	DATA
	PANEL BOARD
	WEATHER PROOF

- NOTES:**
- ALL SUITE AHU UNITS REQUIRE TWO INDEPENDENT 208/1/60 CIRCUITS, ONE FOR THE HEAT PUMP AND ONE FOR THE SUPPLEMENTAL E4LECTRIC HEAT. REFER TO PANEL SCHEDULES FOR CIRCUIT AMPACITIES.
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REVISIONS			
NO.	DESCRIPTION	DATE	BY
0	ISSUED FOR TENDER	2024.08.29	MJM

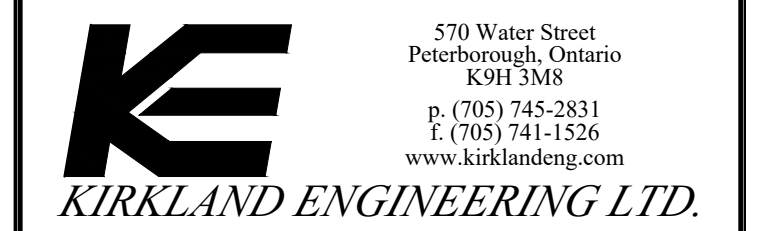
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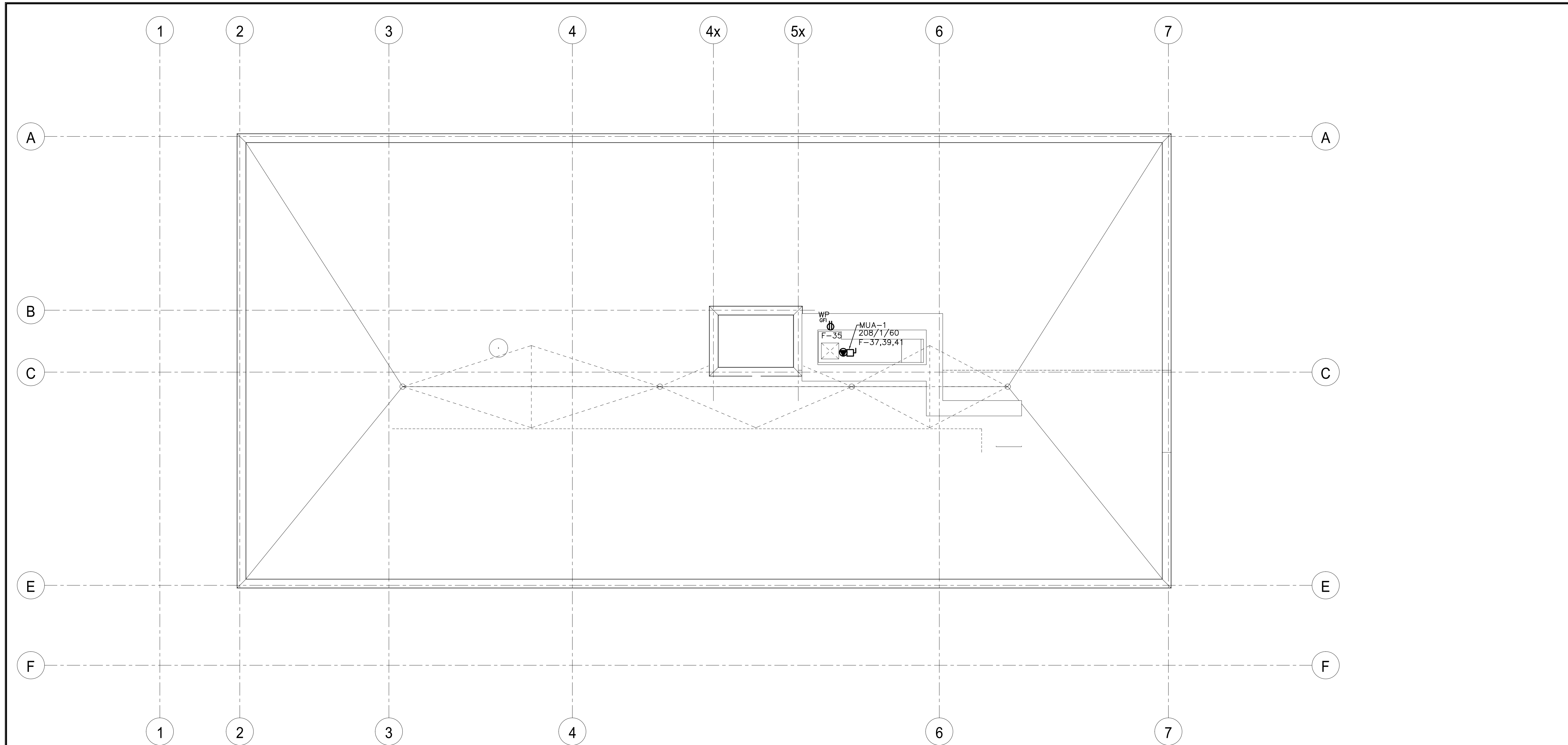
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PROJECT  
**COURTICE SENIOR DEVELOPMENT**  
 1697 HIGHWAY No 2  
 CLARINGTON, ON

TITLE  
**FIFTH FLOOR POWER**

DESIGN	MJM	SCALE AS NOTED
DRAWN	AJM	DWG NO.
CHECKED	MJM	<b>E6</b>
APPROVED	MJM	
PROJECT	7393	

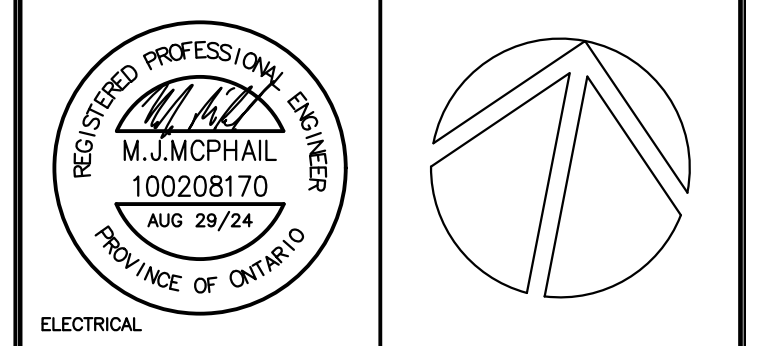


**POWER LAYOUT PENTHOUSE**  
 SCALE: 1:75  
 1000 0 1000 2000 3000 4000 5000mm

ELECTRICAL SYMBOLS LEGEND	
	DUPLEX RECEPTACLE
	COUNTER MOUNT
	GFI DUPLEX RECEPTACLE
	STOVE RECEPTACLE
	SPLIT DUPLEX RECEPTACLE
	DIRECT CONNECTION
	DISCONNECT SWITCH
	DRYER RECEPTACLE
	DATA
	PANEL BOARD
WP	WEATHER PROOF

REVISIONS			
NO.	DESCRIPTION	DATE	BY
0	ISSUED FOR TENDER	2024.08.29	MJM

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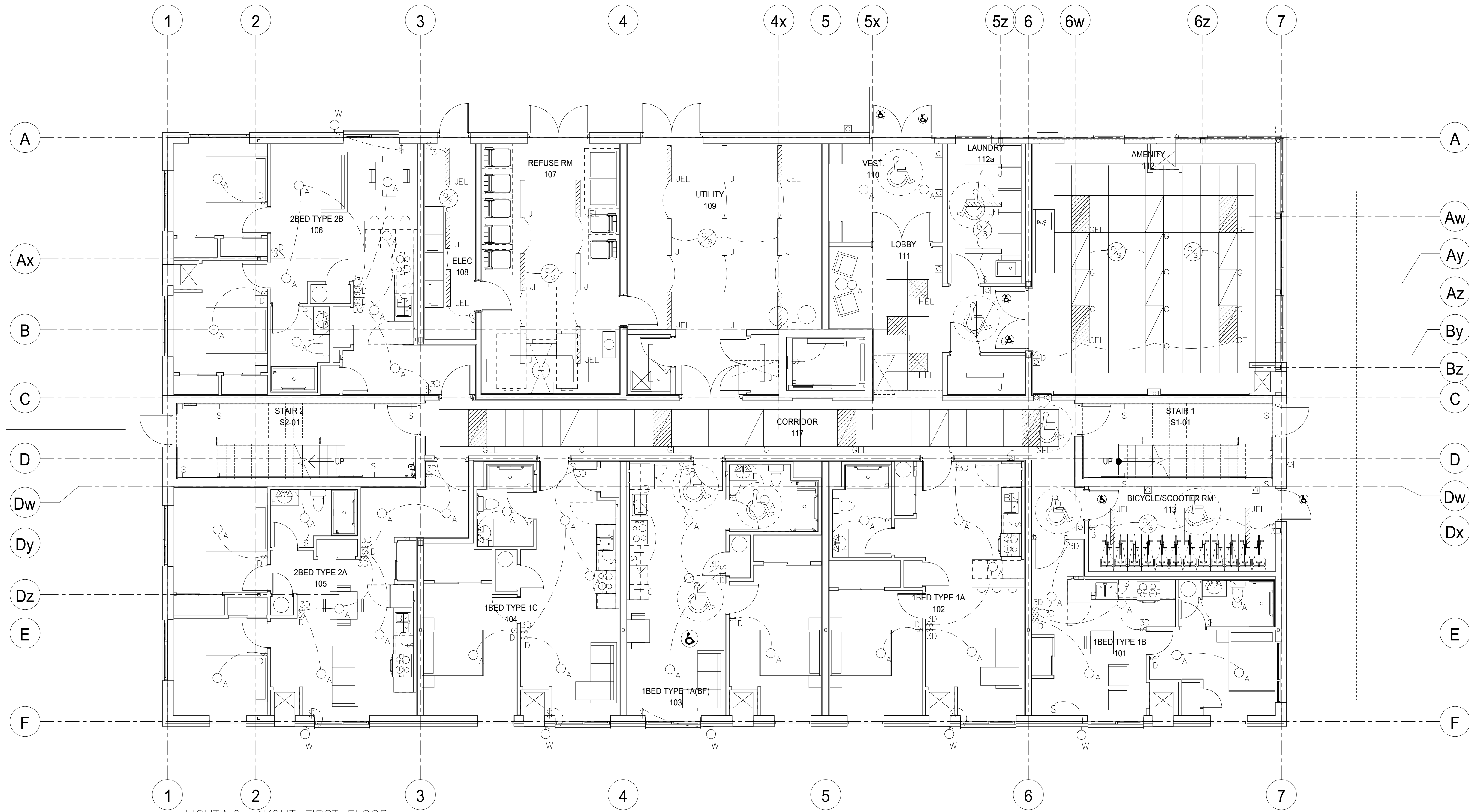
**KE**  
 570 Water Street  
 Peterborough, Ontario  
 K9H 3M8  
 P. (705) 745-2831  
 F. (705) 741-1526  
 www.kirklandeng.com  
**KIRKLAND ENGINEERING LTD.**

PROJECT  
**COURTICE SENIOR DEVELOPMENT**  
 1697 HIGHWAY No 2  
 CLARINGTON, ON

TITLE  
**PENTHOUSE POWER**

DESIGN	MJM	SCALE AS NOTED
DRAWN	AJM	DWG NO.
CHECKED	MJM	
APPROVED	MJM	
PROJECT	7393	

**E7**



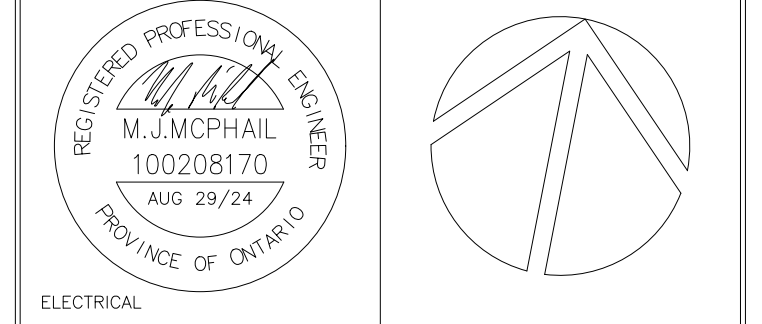
1 LIGHTING LAYOUT FIRST FLOOR  
 SCALE: 1:75  
 1000 0 1000 2000 3000 4000 5000 mm

NOTES:  
 1 ALL FIXTURES WITH INTEGRAL BATTERY BACKUP ARE TO HAVE THE BATTERY SUPPLIED BY AN UN-SWITCHED PORTION OF THE LIGHTING CIRCUIT SUCH THAT THEY WILL AUTOMATICALLY COME ON IN CASES OF POWER OUTAGE AND CAN BE CONTROLLED ON AND OFF BY LIGHTING CONTROLS UNDER NORMAL POWER OPERATING CONDITIONS.

NO.	DESCRIPTION	DATE	BY
0	ISSUED FOR TENDER	2024.08.29	MJM

REVISIONS

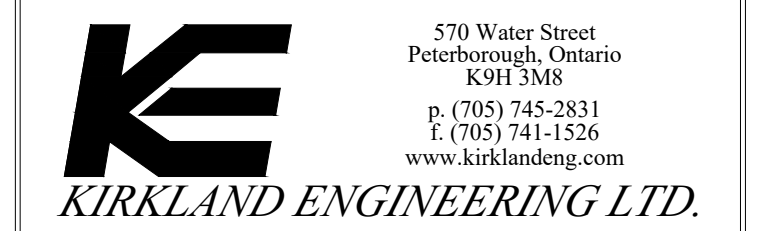
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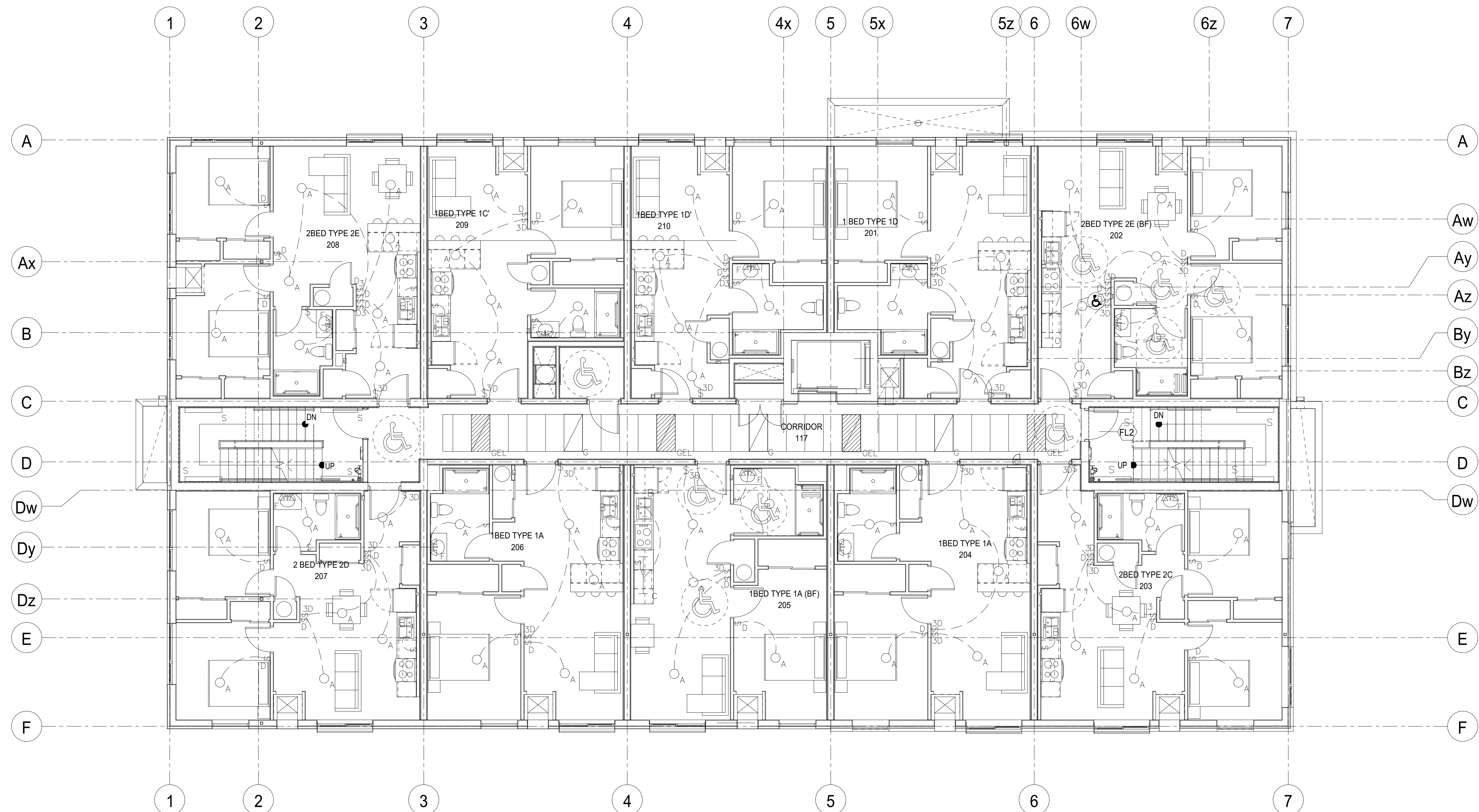


PROJECT  
**COURTICE SENIOR DEVELOPMENT**  
 1697 HIGHWAY No 2  
 CLARINGTON, ON

TITLE  
**FIRST FLOOR LIGHTING**

DESIGN	MJM	SCALE AS NOTED
DRAWN	AJM	DWG NO.
CHECKED	MJM	<b>E8</b>
APPROVED	MJM	
PROJECT	7393	



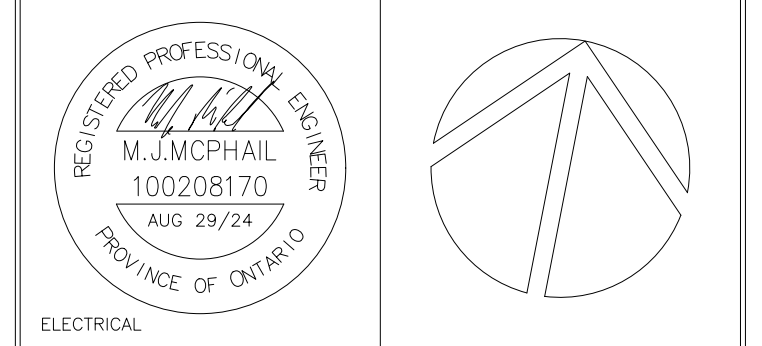


**E9** LIGHTING LAYOUT SECOND FLOOR  
 SCALE: 1:75  
 1000 0 1000 2000 3000 4000 5000 mm

NOTES:  
 1 ALL FIXTURES WITH INTEGRAL BATTERY BACKUP ARE TO HAVE THE BATTERY SUPPLIED BY AN UN-SWITCHED PORTION OF THE LIGHTING CIRCUIT SUCH THAT THEY WILL AUTOMATICALLY COME ON IN CASES OF POWER OUTAGE AND CAN BE CONTROLLED ON AND OFF BY LIGHTING CONTROLS UNDER NORMAL POWER OPERATING CONDITIONS.

REVISIONS			
NO.	DESCRIPTION	DATE	BY
0	ISSUED FOR TENDER	2024.08.29	MJM

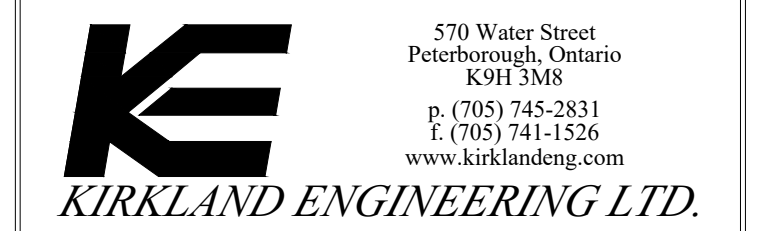
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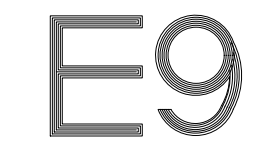
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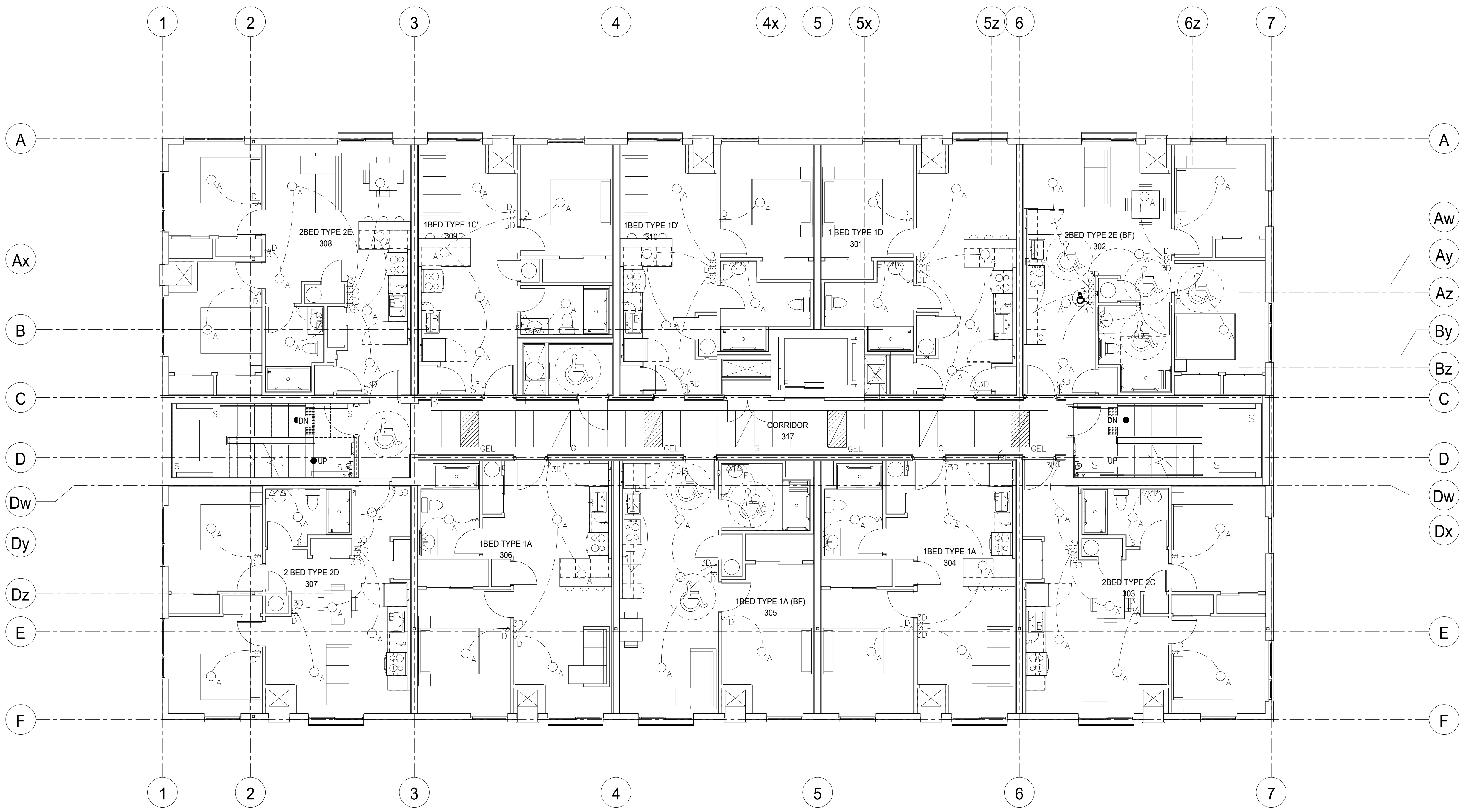


PROJECT  
**COURTICE SENIOR DEVELOPMENT**  
 1697 HIGHWAY No 2  
 CLARINGTON, ON

TITLE  
**SECOND FLOOR LIGHTING**

DESIGN	MJM	SCALE AS NOTED
DRAWN	AJM	DWG NO.
CHECKED	MJM	
APPROVED	MJM	
PROJECT	7393	



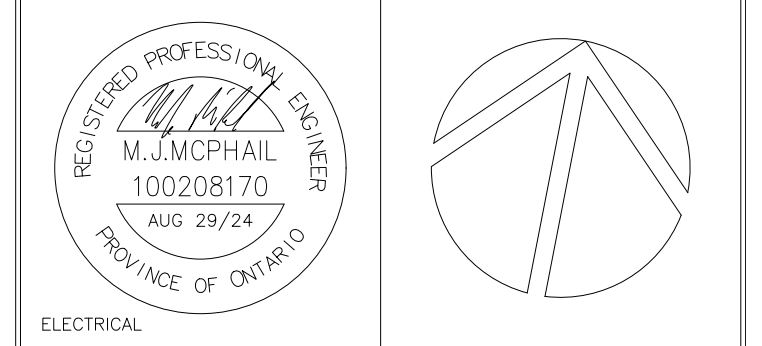


1 LIGHTING LAYOUT THIRD FLOOR  
 SCALE: 1:75  
 0 1000 2000 3000 4000 5000mm

NOTES:  
 1 ALL FIXTURES WITH INTEGRAL BATTERY BACKUP ARE TO HAVE THE BATTERY SUPPLIED BY AN UN-SWITCHED PORTION OF THE LIGHTING CIRCUIT SUCH THAT THEY WILL AUTOMATICALLY COME ON IN CASES OF POWER OUTAGE AND CAN BE CONTROLLED ON AND OFF BY LIGHTING CONTROLS UNDER NORMAL POWER OPERATING CONDITIONS.

REVISIONS			
NO.	DESCRIPTION	DATE	BY
0	ISSUED FOR TENDER	2024.08.29	MJM

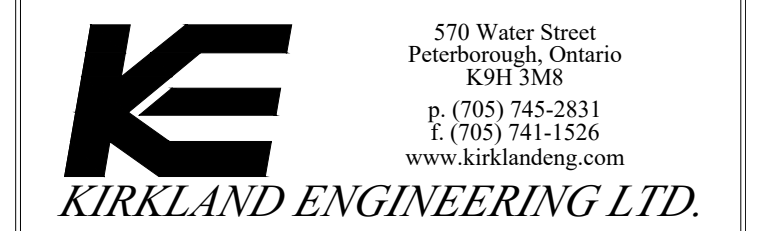
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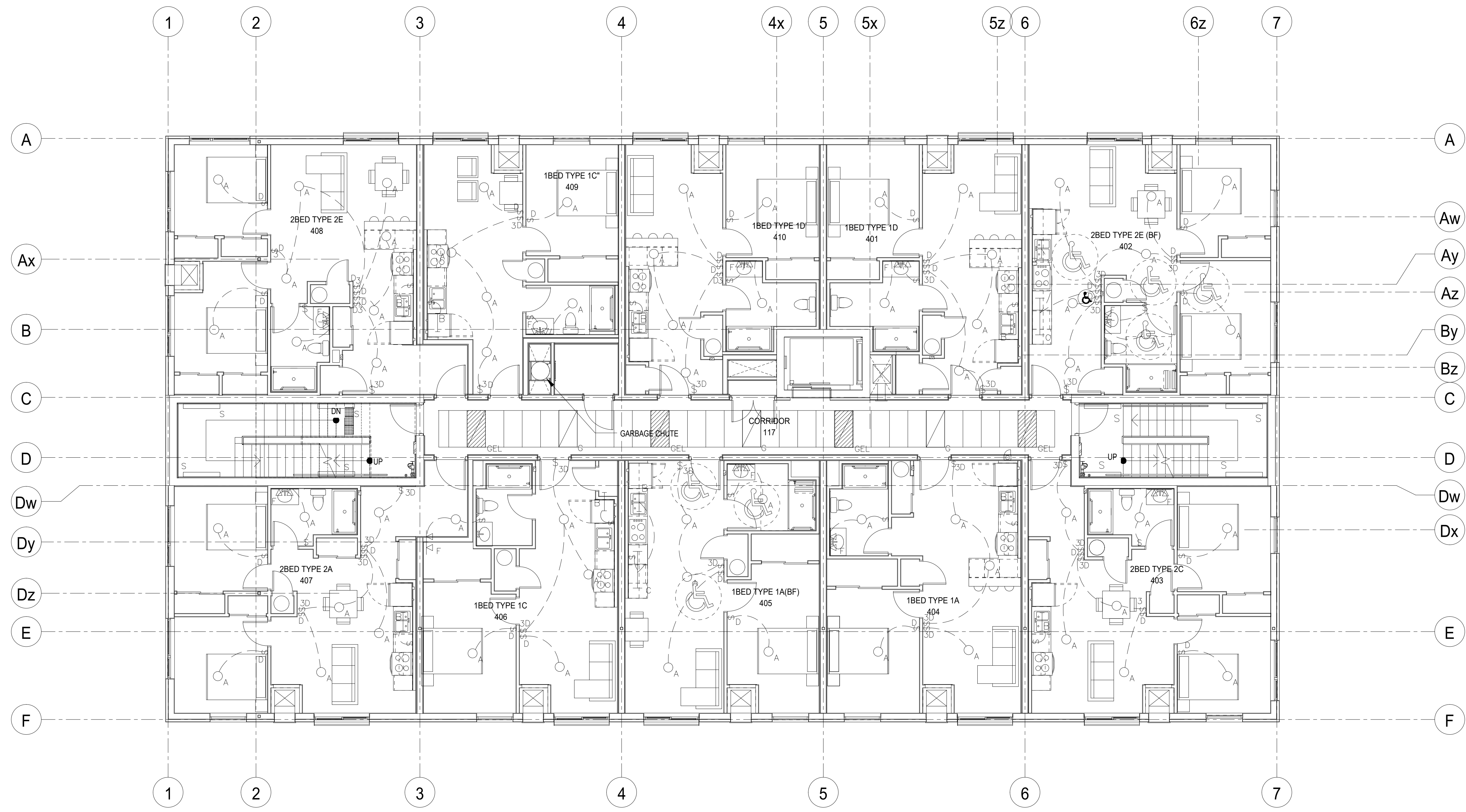
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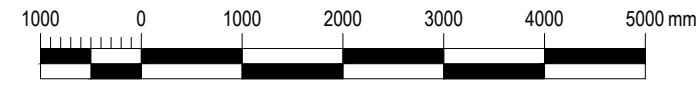
PROJECT  
**COURTICE SENIOR DEVELOPMENT**  
 1697 HIGHWAY No 2  
 CLARINGTON, ON

TITLE  
**THIRD FLOOR LIGHTING**

DESIGN	MJM	SCALE AS NOTED
DRAWN	AJM	DWG NO.
CHECKED	MJM	<b>E10</b>
APPROVED	MJM	
PROJECT	7393	



1 LIGHTING LAYOUT FORTH FLOOR  
 SCALE: 1:75

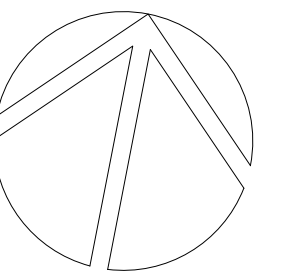


NOTES:

- ALL FIXTURES WITH INTEGRAL BATTERY BACKUP ARE TO HAVE THE BATTERY SUPPLIED BY AN UN-SWITCHED PORTION OF THE LIGHTING CIRCUIT SUCH THAT THEY WILL AUTOMATICALLY COME ON IN CASES OF POWER OUTAGE AND CAN BE CONTROLLED ON AND OFF BY LIGHTING CONTROLS UNDER NORMAL POWER OPERATING CONDITIONS.

NO.	DESCRIPTION	DATE	BY
0	ISSUED FOR TENDER	2024.08.29	MJM

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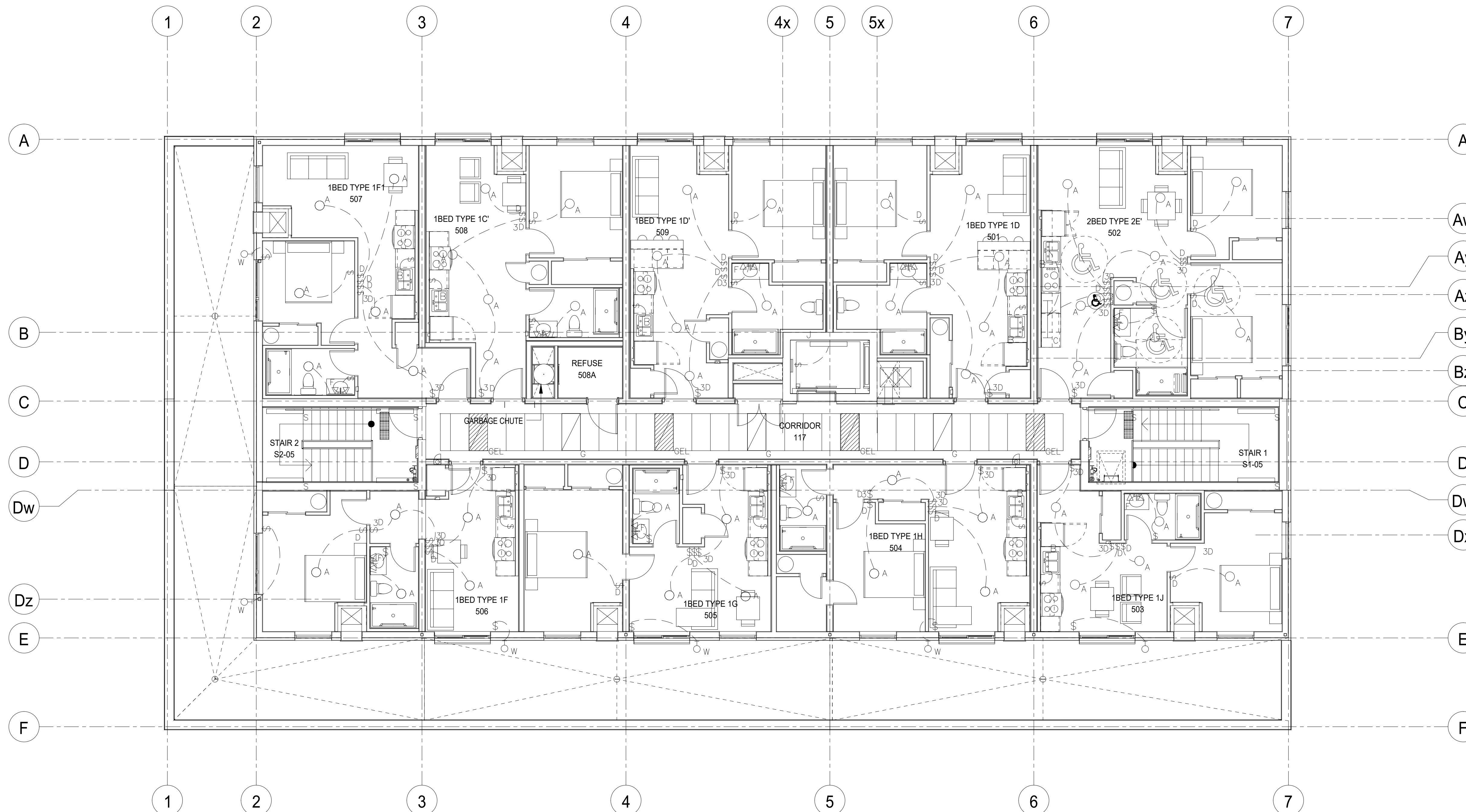
570 Water Street  
 Peterborough, Ontario  
 K9H 3M8  
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 F. (705) 741-1526  
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**KIRKLAND ENGINEERING LTD.**

PROJECT  
**COURTICE SENIOR DEVELOPMENT**

1697 HIGHWAY No 2  
 CLARINGTON, ON

TITLE  
**FORTH FLOOR LIGHTING**

DESIGN	MJM	SCALE AS NOTED
DRAWN	AJM	DWG NO.
CHECKED	MJM	<b>E11</b>
APPROVED	MJM	
PROJECT	7393	

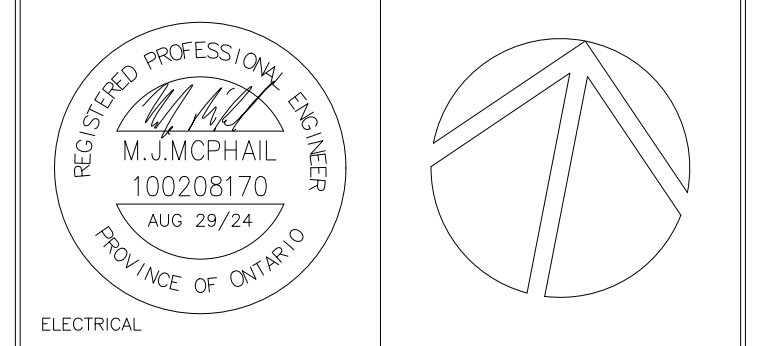


**1 LIGHTING LAYOUT FIFTH FLOOR**  
 SCALE: 1:75  
 1000 0 1000 2000 3000 4000 5000mm

**NOTES:**  
 1 ALL FIXTURES WITH INTEGRAL BATTERY BACKUP ARE TO HAVE THE BATTERY SUPPLIED BY AN UN-SWITCHED PORTION OF THE LIGHTING CIRCUIT SUCH THAT THEY WILL AUTOMATICALLY COME ON IN CASES OF POWER OUTAGE AND CAN BE CONTROLLED ON AND OFF BY LIGHTING CONTROLS UNDER NORMAL POWER OPERATING CONDITIONS.

NO.	DESCRIPTION	DATE	BY
0	ISSUED FOR TENDER	2024.08.29	MJM

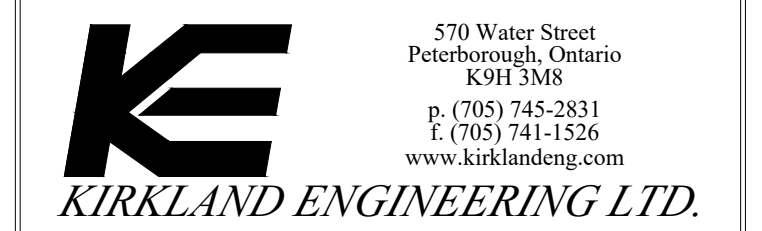
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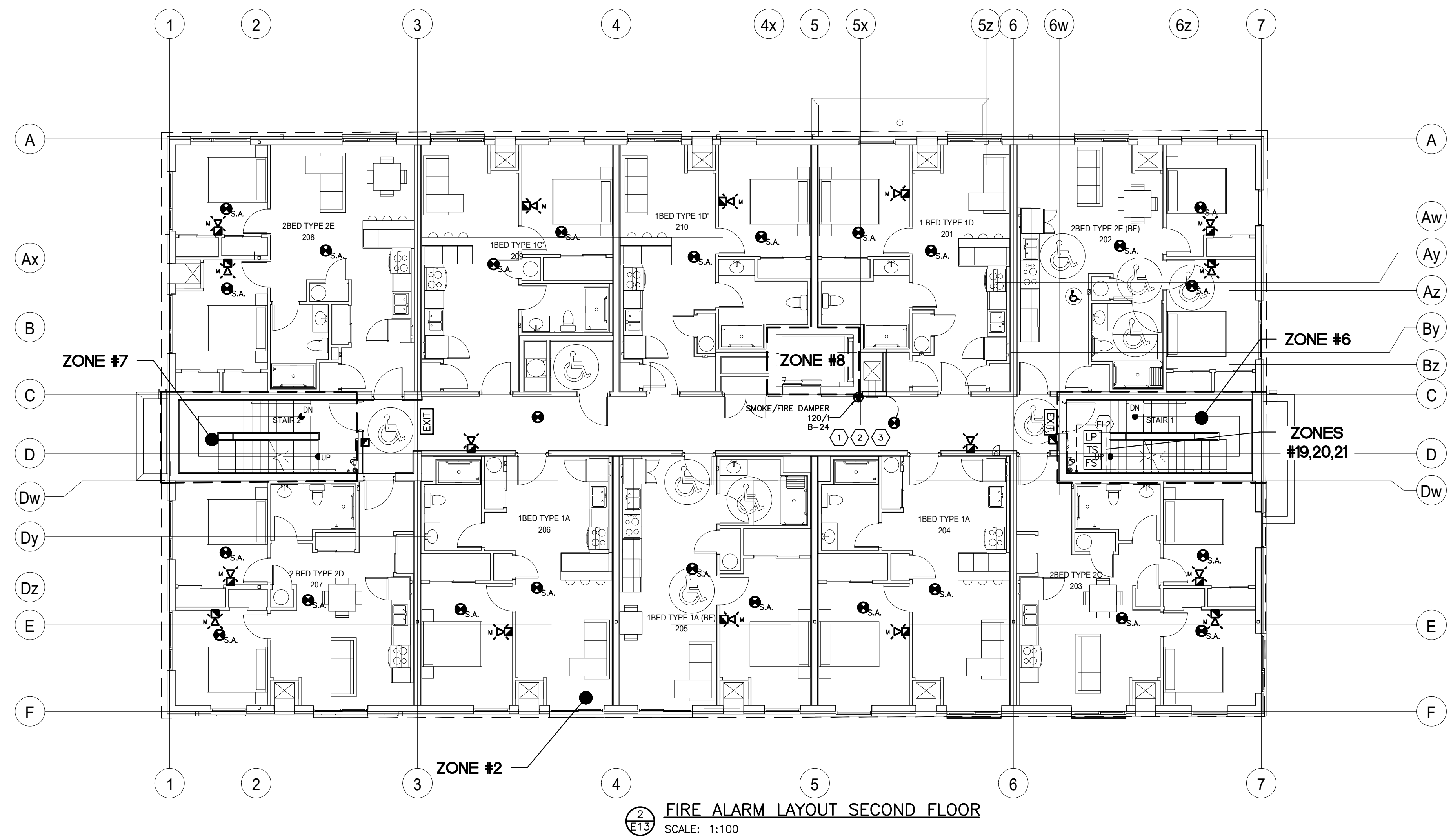
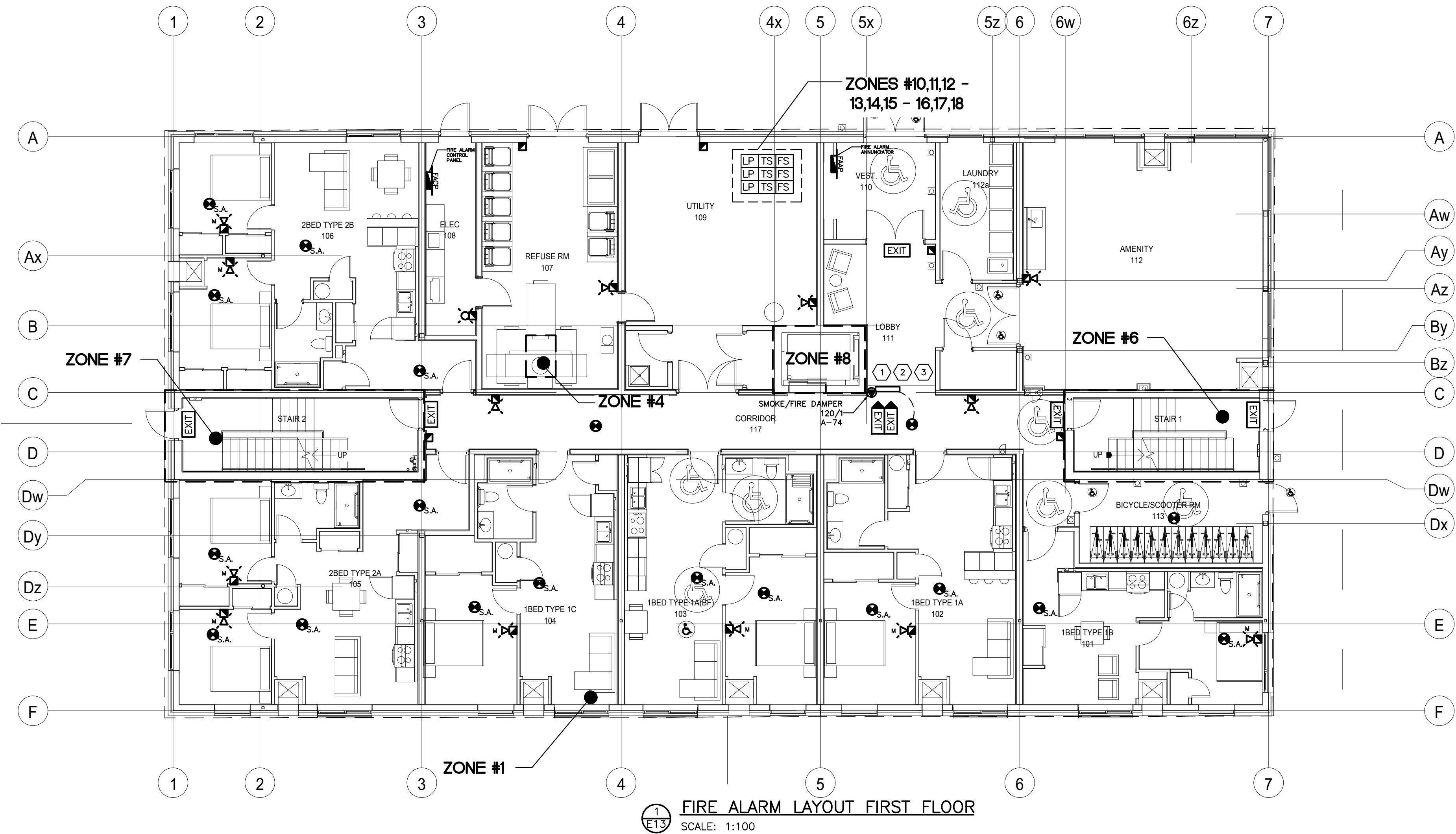


PROJECT  
**COURTICE SENIOR DEVELOPMENT**  
 1697 HIGHWAY No 2  
 CLARINGTON, ON

TITLE  
**FIFTH FLOOR LIGHTING**

DESIGN	MJM	SCALE AS NOTED
DRAWN	AJM	DWG NO.
CHECKED	MJM	<b>E12</b>
APPROVED	MJM	
PROJECT	7393	

FIRE ALARM LEGEND	
	FIRE ALARM HORN
	FIRE ALARM HORN/STROBE
	FIRE ALARM MINI HORN WITH SILENCE SWITCH
	FIRE ALARM STROBE
	MANUAL PULL STATION
	SMOKE DETECTOR
	120V SMOKE ALARM
	120V CARBON MONOXIDE ALARM
	DUCT TYPE SMOKE DETECTOR
	SPRINKLER FLOW SWITCH
	SPRINKLER TAMPER SWITCH
	SPRINKLER LOW PRESSURE
	FIRE ALARM CONTROL PANEL
	FIRE ALARM ANNUNCIATOR PANEL
	ADDRESSABLE MODULE

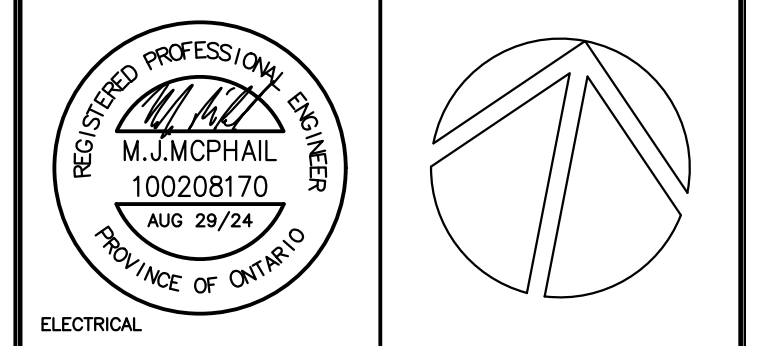


- NOTES:**
- PROVIDE 120V POWER TO COMBINATION FIRE/SMOKE DAMPER. PROVIDE EACH DAMPER WITH A CONTACTOR FOR CONTROL BY THE FIRE ALARM SYSTEM.
  - EACH COMBINATION FIRE/SMOKE DAMPER IS TO HAVE A SMOKE DETECTOR WITHIN 1.5m OF THE. UPON ACTIVATION OF THE SMOKE DETECTOR A FIRE ALARM RELAY MODULE SHALL OPEN THE ASSOCIATED DAMPER CONTACTOR TO CAUSE THE DAMPER TO CLOSE.
  - IF ANY COMBINATION FIRE/SMOKE DAMPER CLOSES THE FIRE ALARM SYSTEM SHALL ALSO SHUT DOWN THE ROOFTOP MUA UNIT.
  - EXIT SIGNS ARE TO BE SUPPLIED FROM DEDICATED CIRCUIT FROM HOUSE PANEL ON THAT FLOOR. REFER TO PANEL SCHEDULE FOR CIRCUITING.
  - EMERGENCY LIGHTING SUPPLIED BY LED GENERAL LIGHTING FIXTURES WITH INTEGRAL BATTERY BACKUP. REFER TO LIGHTING DRAWINGS FOR MORE DETAILS.

NO.	DESCRIPTION	DATE	BY
0	ISSUED FOR TENDER	2024.08.29	MJM

**REVISIONS**

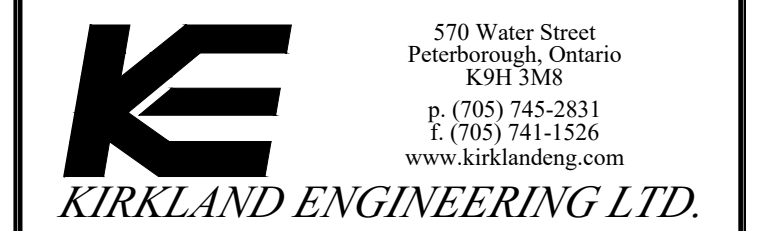
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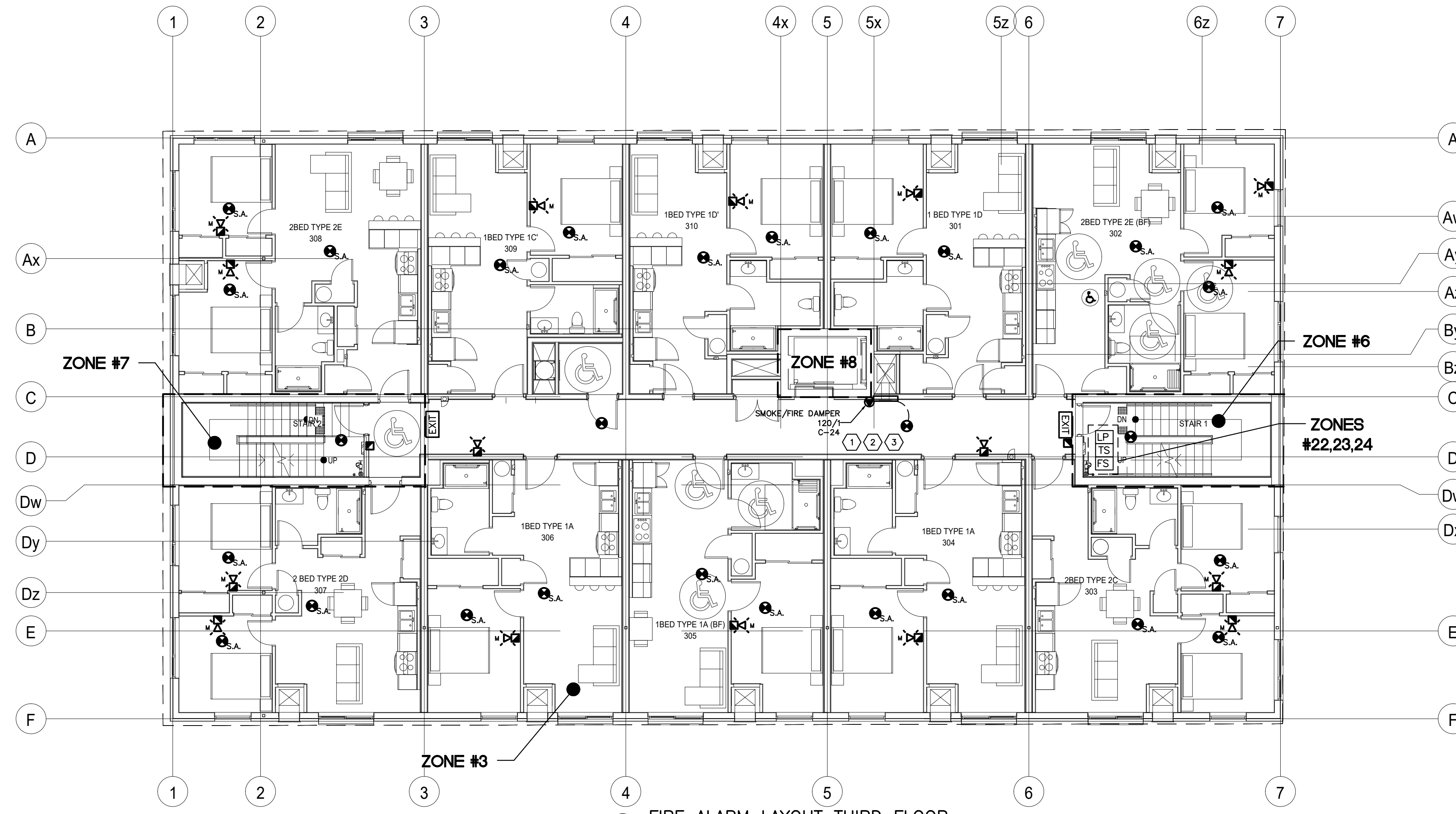
**PROJECT**  
COURTICE SENIOR DEVELOPMENT  
1697 HIGHWAY No 2 CLARINGTON, ON

**TITLE**  
FIRST AND SECOND FLOOR FIRE ALARM

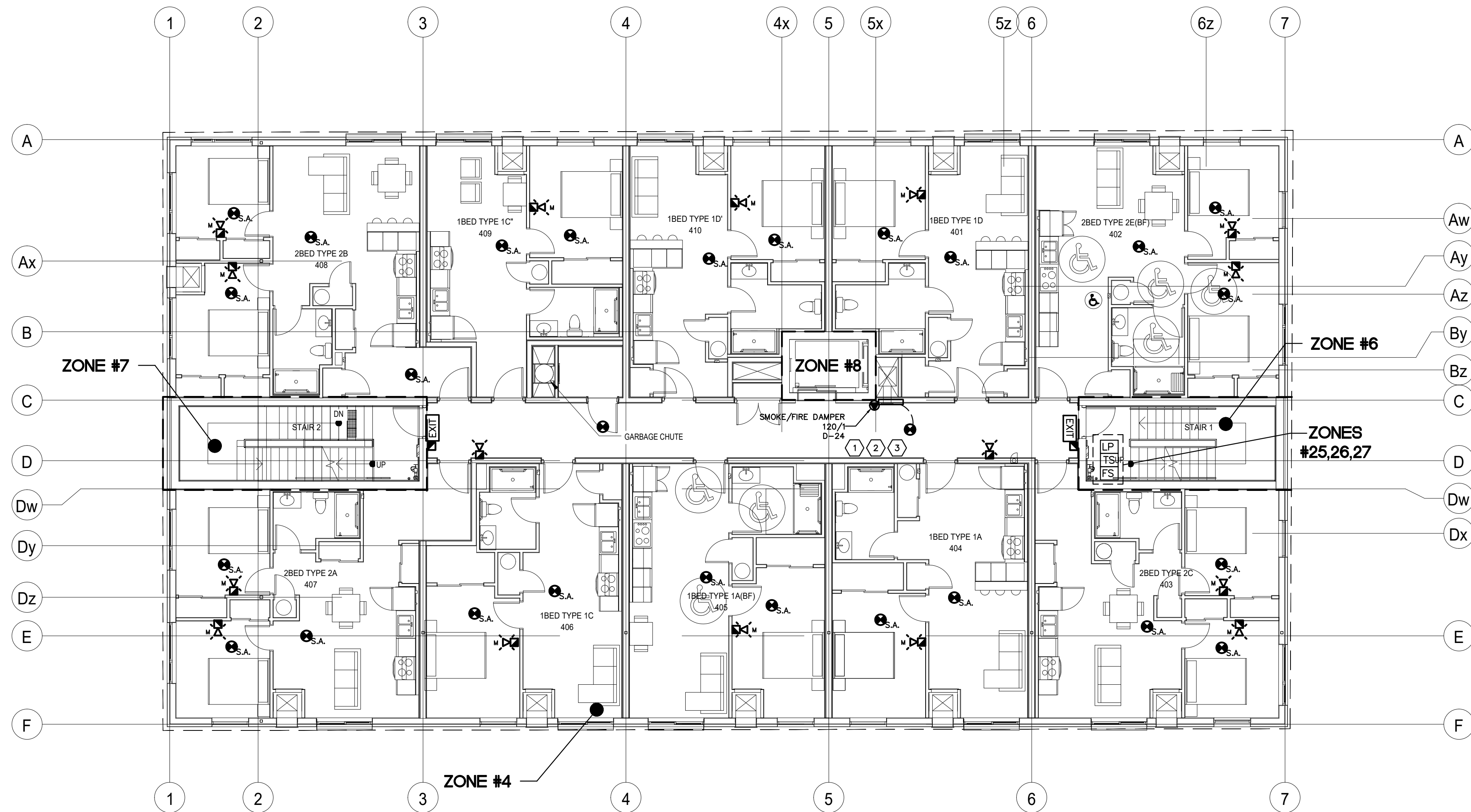
DESIGN	MJM	SCALE AS NOTED
DRAWN	AJM	DWG NO.
CHECKED	MJM	
APPROVED	MJM	
PROJECT	7393	

E13

FIRE ALARM LEGEND	
	FIRE ALARM HORN
	FIRE ALARM HORN/STROBE
	FIRE ALARM MINI HORN WITH SILENCE SWITCH
	FIRE ALARM STROBE
	MANUAL PULL STATION
	SMOKE DETECTOR
	120V SMOKE ALARM
	120V CARBON MONOXIDE ALARM
	DUCT TYPE SMOKE DETECTOR
	SPRINKLER FLOW SWITCH
	SPRINKLER TAMPER SWITCH
	SPRINKLER LOW PRESSURE
	FIRE ALARM CONTROL PANEL
	FIRE ALARM ANNUNCIATOR PANEL
	ADDRESSABLE MODULE



**1** FIRE ALARM LAYOUT THIRD FLOOR  
SCALE: 1:100



**2** FIRE ALARM LAYOUT FORTH FLOOR  
SCALE: 1:100

- NOTES:**
- PROVIDE 120V POWER TO COMBINATION FIRE/SMOKE DAMPER. PROVIDE EACH DAMPER WITH A CONTACTOR FOR CONTROL BY THE FIRE ALARM SYSTEM.
  - EACH COMBINATION FIRE/SMOKE DAMPER IS TO HAVE A SMOKE DETECTOR WITHIN 1.5m OF THE. UPON ACTIVATION OF THE SMOKE DETECTOR A FIRE ALARM RELAY MODULE SHALL OPEN THE ASSOCIATED DAMPER CONTACTOR TO CAUSE THE DAMPER TO CLOSE.
  - IF ANY COMBINATION FIRE/SMOKE DAMPER CLOSES THE FIRE ALARM SYSTEM SHALL ALSO SHUT DOWN THE ROOFTOP MUA UNIT.
  - EXIT SIGNS ARE TO BE SUPPLIED FROM DEDICATED CIRCUIT FROM HOUSE PANEL ON THAT FLOOR. REFER TO PANEL SCHEDULE FOR CIRCUITING.
  - EMERGENCY LIGHTING SUPPLIED BY LED GENERAL LIGHTING FIXTURES WITH INTEGRAL BATTERY BACKUP. REFER TO LIGHTING DRAWINGS FOR MORE DETAILS.

NO.	DESCRIPTION	DATE	BY
0	ISSUED FOR TENDER	2024.08.29	MJM

**REVISIONS**

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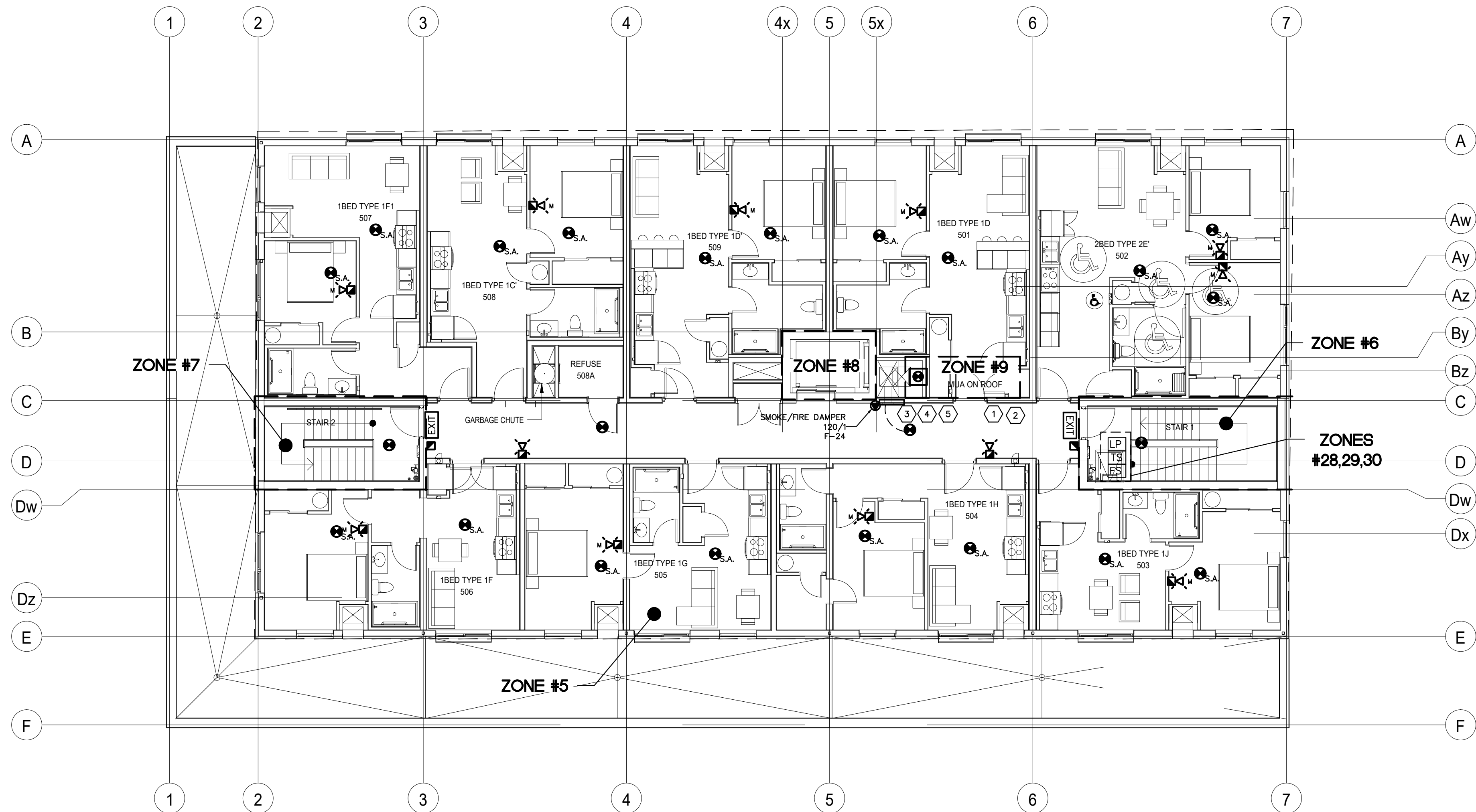
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**PROJECT**  
**COURTICE SENIOR DEVELOPMENT**  
1697 HIGHWAY No 2  
CLARINGTON, ON

**TITLE**  
**THIRD AND FORTH FLOOR FIRE ALARM**

DESIGN	MJM	SCALE	AS NOTED
DRAWN	AJM	DWG NO.	<b>E14</b>
CHECKED	MJM		
APPROVED	MJM		
PROJECT	7393		



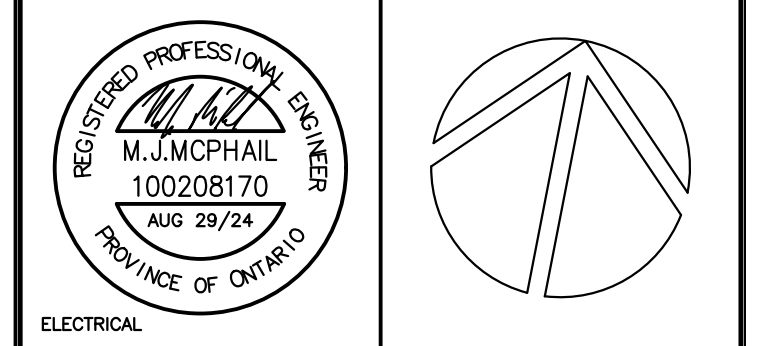
1  
E15  
FIRE ALARM LAYOUT FIFTH FLOOR  
SCALE: 1:100

- NOTES:
- 1 PROVIDE AND INSTALL A DUCT TYPE SMOKE DETECTOR IN THE SUPPLY OF MUA-1 AND PROVIDE AN ADDRESSABLE MODULE FOR CONNECTION TO THE FIRE ALARM PANEL.
  - 2 ROOFTOP MUA-1 TO BE SHUT DOWN ON SIGNAL FROM FIRE ALARM CONTROL PANEL IF DUCT TYPE SMOKE DETECTOR ACTIVATES OR IF ANY OF THE COMBINATION FIRE/SMOKE DAMPERS ARE TRIGGERED TO CLOSE.
  - 3 PROVIDE 120V POWER TO COMBINATION FIRE/SMOKE DAMPER. PROVIDE EACH DAMPER WITH A CONTACTOR FOR CONTROL BY THE FIRE ALARM SYSTEM.
  - 4 EACH COMBINATION FIRE/SMOKE DAMPER IS TO HAVE A SMOKE DETECTOR WITHIN 1.5m OF THE. UPON ACTIVATION OF THE SMOKE DETECTOR A FIRE ALARM RELAY MODULE SHALL OPEN THE ASSOCIATED DAMPER CONTACTOR TO CAUSE THE DAMPER TO CLOSE.
  - 5 IF ANY COMBINATION FIRE/SMOKE DAMPER CLOSURES THE FIRE ALARM SYSTEM SHALL ALSO SHUT DOWN THE ROOFTOP MUA UNIT.
  - 6 EXIT SIGNS ARE TO BE SUPPLIED FROM DEDICATED CIRCUIT FROM HOUSE PANEL ON THAT FLOOR. REFER TO PANEL SCHEDULE FOR CIRCUITING.
  - 7 EMERGENCY LIGHTING SUPPLIED BY LED GENERAL LIGHTING FIXTURES WITH INTEGRAL BATTERY BACKUP. REFER TO LIGHTING DRAWINGS FOR MORE DETAILS.

NO.	DESCRIPTION	DATE	BY
0	ISSUED FOR TENDER	2024.08.29	MJM

REVISIONS

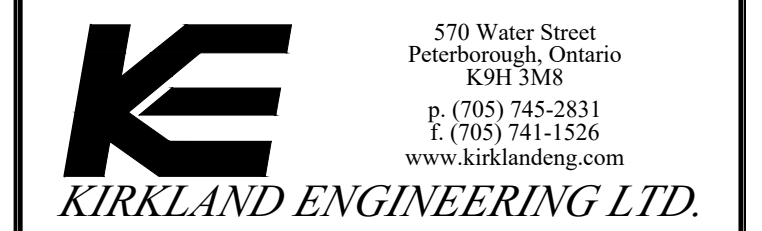
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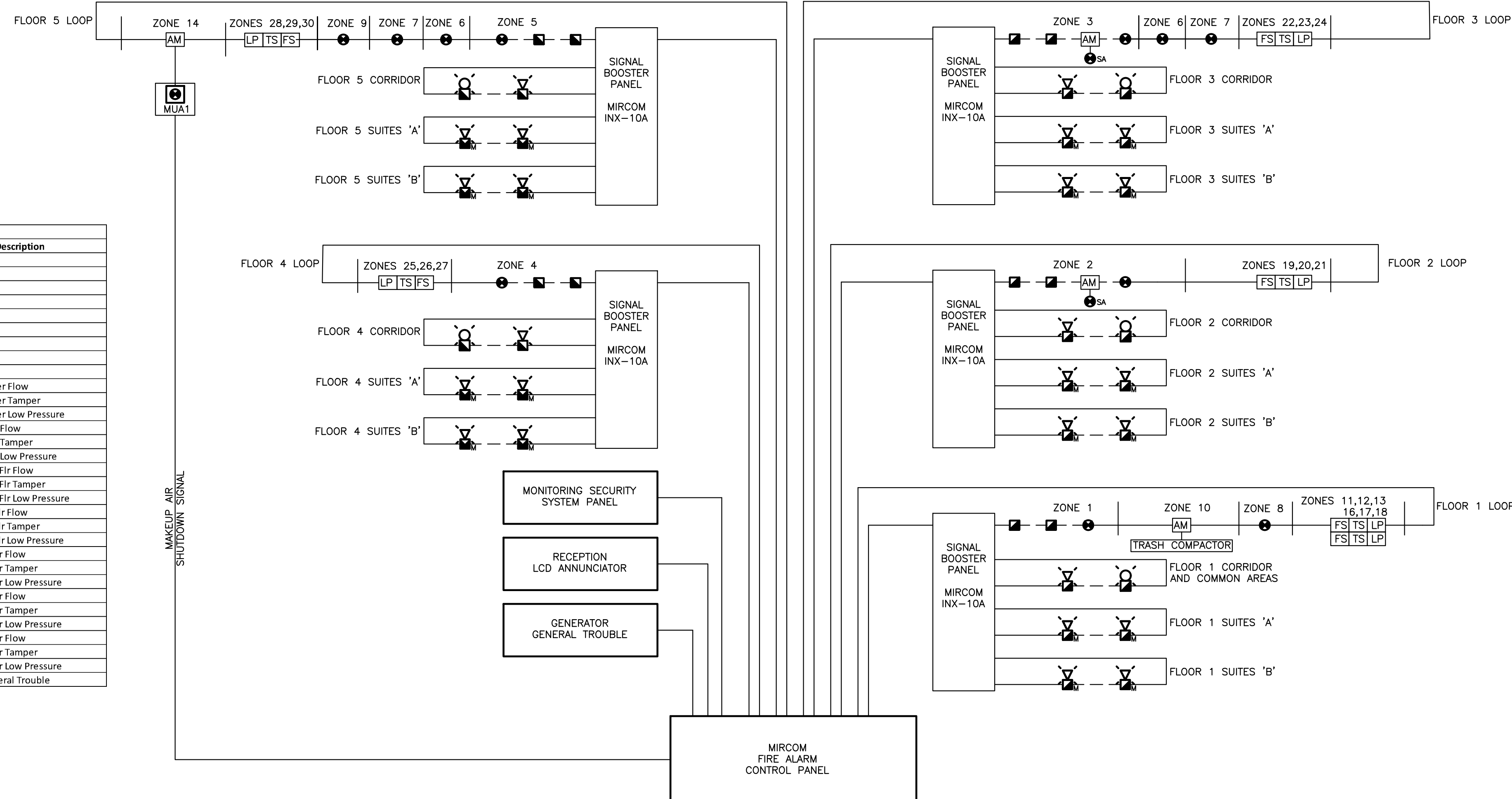


PROJECT  
**COURTICE SENIOR DEVELOPMENT**  
1697 HIGHWAY No 2  
CLARINGTON, ON

TITLE  
**FIFTH FLOOR FIRE ALARM**

DESIGN	MJM	SCALE AS NOTED
DRAWN	AJM	DWG NO.
CHECKED	MJM	<b>E15</b>
APPROVED	MJM	
PROJECT	7393	

2  
E15  
FIRE ALARM RISER  
SCALE: N.T.S.



- F/A RISER NOTES:
1. PROVIDE AND INSTALL FIRE ALARM FAULT ISOLATION MODULES WHEN ENTERING AND EXITING A FIRE ALARM ZONE ON A DATA COMMUNICATION LINK THAT SERVES FIRE ALARM DEVICES IN MORE THAN ONE ZONE IN ACCORDANCE WITH CAN/ULC-S524-06.
  2. PROVIDE SIGNAL BOOSTER PANELS AS REQUIRED.
  3. DASHED LINES ON RISER DIAGRAM INDICATE MORE DEVICES PRESENT THAN SHOWN. REFER TO FLOOR DRAWINGS FOR DEVICE COUNTS.
  4. SPRINKLER DEVICES SHOWN FOR REFERENCE. ACTUAL SPRINKLER ZONES AND MONITORING DEVICES AND LOCATION TO BE COORDINATED WITH SPRINKLER SYSTEM DESIGNER. INCREASE NUMBER OF ZONES AS REQUIRED TO ACCOMMODATE ACTUAL INSTALLATION. PROVIDE SEPARATE TROUBLE ZONE INPUT FOR EACH MONITORED DEVICE.
  5. ENSURE STROBES ARE SYNCHRONIZED THROUGHOUT FLOOR SPACES.
  6. PROVIDE CONNECTION FROM GENERATOR REMOTE ANNUNCIATOR PANEL TO FIRE ALARM SYSTEM FOR GENERAL TROUBLE SIGNAL.

FIRE ALARM LEGEND

[Symbol]	FIRE ALARM HORN
[Symbol]	FIRE ALARM HORN/STROBE
[Symbol]	FIRE ALARM MINI HORN WITH SILENCE SWITCH
[Symbol]	FIRE ALARM STROBE
[Symbol]	MANUAL PULL STATION
[Symbol]	SMOKE DETECTOR
[Symbol]	120V SMOKE ALARM
[Symbol]	120V CARBON MONOXIDE ALARM
[Symbol]	DUCT TYPE SMOKE DETECTOR
[Symbol]	SPRINKLER FLOW SWITCH
[Symbol]	SPRINKLER TAMPER SWITCH
[Symbol]	SPRINKLER LOW PRESSURE
[Symbol]	FIRE ALARM CONTROL PANEL
[Symbol]	FIRE ALARM ANNUNCIATOR PANEL
[Symbol]	ADDRESSABLE MODULE

ARM ZONE SCHEDULE

Zone	Type	Description
1	ALARM	Main Floor
2	ALARM	2nd Floor
3	ALARM	3rd Floor
4	ALARM	4th Floor
5	ALARM	5th Floor
6	ALARM	Stair 1
7	ALARM	Stair 2
8	ALARM	Elevator
9	ALARM	Rooftop MUA
10	ALARM	Sprinkler Master Flow
11	TROUBLE	Sprinkler Master Tamper
12	TROUBLE	Sprinkler Master Low Pressure
13	ALARM	Garbage Chute Flow
14	TROUBLE	Garbage Chute Tamper
15	TROUBLE	Garbage Chute Low Pressure
16	ALARM	Sprinkler Main Flr Flow
17	TROUBLE	Sprinkler Main Flr Tamper
18	TROUBLE	Sprinkler Main Flr Low Pressure
19	ALARM	Sprinkler 2nd Flr Flow
20	TROUBLE	Sprinkler 2nd Flr Tamper
21	TROUBLE	Sprinkler 2nd Flr Low Pressure
22	ALARM	Sprinkler 3rd Flr Flow
23	TROUBLE	Sprinkler 3rd Flr Tamper
24	TROUBLE	Sprinkler 3rd Flr Low Pressure
25	ALARM	Sprinkler 4th Flr Flow
26	TROUBLE	Sprinkler 4th Flr Tamper
27	TROUBLE	Sprinkler 4th Flr Low Pressure
28	ALARM	Sprinkler 5th Flr Flow
29	TROUBLE	Sprinkler 5th Flr Tamper
30	TROUBLE	Sprinkler 5th Flr Low Pressure
31	TROUBLE	Generator General Trouble

ELECTRICAL SYMBOLS LEGEND	
	DUPLEX RECEPTACLE
	COUNTER MOUNT
	GFI DUPLEX RECEPTACLE
	STOVE RECEPTACLE
	SPLIT DUPLEX RECEPTACLE
	DIRECT CONNECTION
	DISCONNECT SWITCH
	DRYER RECEPTACLE
	DATA
	PANEL BOARD
WP	WEATHER PROOF
	20A T-SLOT RECEPTACLE

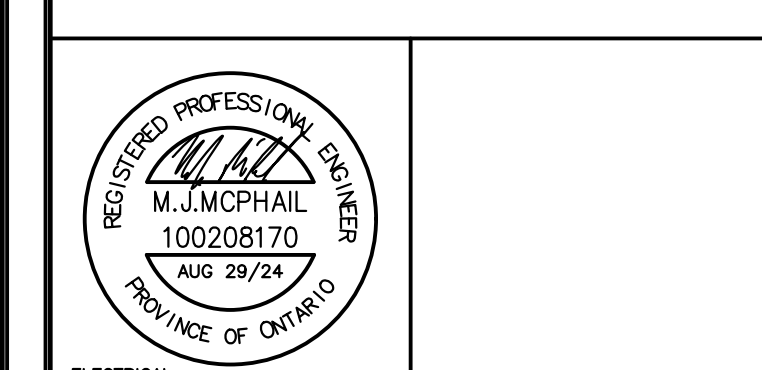
FIRE ALARM LEGEND	
	FIRE ALARM HORN
	FIRE ALARM HORN/STROBE
	IN SUITE MINI HORN/STROBE
	FIRE ALARM STROBE
	MANUAL PULL STATION
	SMOKE DETECTOR
	120V SMOKE ALARM
	120V CARBON MONOXIDE ALARM
	SPRINKLER FLOW SWITCH
	SPRINKLER TAMPER SWITCH
	SPRINKLER LOW PRESSURE
	FIRE ALARM CONTROL PANEL
	FIRE ALARM ANNUNCIATOR PANEL
	ADDRESSABLE MODULE

INTERIOR LIGHTING SCHEDULE			
SYMBOL	DESCRIPTION	MANUFACTURER	MODEL No.
	12" LED SURFACE MOUNT FIXTURE. 0-10V DIMMING, 120V, 24W, 3000K COLOUR TEMP, 80+ CRI, 1787 LUMENS	EGL0	205989A TRAGO 5
	2' LED SURFACE MOUNT UNDER CABINET FIXTURE. 120V, 13W, 3500K COLOUR TEMP, 80 CRI, 1600 LUMENS, WHITE FINISH	VISCOR	LTL24-LED835K016LUNV-F06
	4' LED SURFACE MOUNT UNDER CABINET FIXTURE. 120V, 26W, 3500K COLOUR TEMP, 80 CRI, 3000 LUMENS, WHITE FINISH	VISCOR	LTL48-LED835K030LUNV-F06
	LED BATHROOM VANITY. 0-10V DIMMING, 120V, 17.5W MAX WATTAGE, 3000K COLOUR TEMP, 1760 LUMENS	EGL0	205068A TORRETTA
	2'x4' LED FLAT PANEL TROFFER. 4640 LUMENS, 35 WATTS, 80+ CRI, 4000K COLOUR TEMPERATURE, 120V, WHITE, 0-10V DIMMING	C-LITE	C-TR-D-FP24-S58L-SCCT-UL-WH-2
	2'x4' LED FLAT PANEL TROFFER. 4640 LUMENS, 35 WATTS, 80+ CRI, 4000K COLOUR TEMPERATURE, 120V, WHITE, 0-10V DIMMING C/W INTEGRATED EMERGENCY BATTERY BACKUP	C-LITE	C-TR-D-FP24-S58L-SCCT-UL-WH-EB
	2'x2' LED FLAT PANEL TROFFER. APPROX 4150 LUMENS, 30 WATTS, 3500K COLOUR TEMPERATURE, 120V, WHITE	C-LITE	IC-TR-D-FP22-S37L-SCCT-UL-WH-2
	2'x2' LED FLAT PANEL TROFFER. APPROX 4150 LUMENS, 30 WATTS, 3500K COLOUR TEMPERATURE, 120V, WHITE. COMPLETE WITH INTEGRATED EMERGENCY BATTERY BACKUP	C-LITE	IC-TR-D-FP22-S37L-SCCT-UL-WH-EB
	48" LED STRIP LUMINAIRE, 80+ CRI, 0-10V DIMMING, 4000K COLOUR TEMP, 4400 LUMENS, 120V, 29 INPUT WATTS, ROUND FROSTED EXTRUDED ACRYLIC LENS	VISCOR	LCOM48-LEED840K044LUNV-P77
	48" LED STRIP LUMINAIRE, 80+ CRI, 0-10V DIMMING, 4000K COLOUR TEMP, 4400 LUMENS, 120V, 29 INPUT WATTS, ROUND FROSTED EXTRUDED ACRYLIC LENS C/W INTEGRATED EMERGENCY BATTERY BACKUP.	VISCOR	LCOM48-LEED840K044LUNV-B39-P77
	48" LED STAIRWELL SURFACE FIXTURE, 80+ CRI, WITH INTEGRAL OCCUPANCY SENSOR AND STEP DIMMING (50%,100%), 4000K COLOUR TEMP, 4600 LUMENS, 120V, 35 INPUT WATTS, FROSTED EXTRUDED ACRYLIC LENS	C-LITE	C-SW-A-S66L-SCCT-US-UC-WH
	OUTDOOR WALL MOUNTED FIXTURE, 80 CRI, 3000K COLOUR TEMP, 1650 LUMENS, 120V, 12 INPUT WATTS	CREE OR APPROVED EQUAL	C-WP-C-RDC-S3L-SCCT-DB
	LIGHT SWITCH		
	3-WAY LIGHT SWITCH		
	DIMMER SWITCH 0-10V		
	3-WAY SWITCH WITH DIMMING		
	OCCUPANCY SENSOR		

EMERGENCY LIGHTING & EXIT SCHEDULE			
SYMBOL	DESCRIPTION	MANUFACTURER	MODEL No.
	SELF POWERED RUNNING MAN EXIT SIGN, SINGLE OR DOUBLE FACE AS INDICATED, ARROWS AS INDICATED, LED LAMPS FOR 120VAC, CSA-C860-96 LISTED & CERTIFIED	LUMACELL OR APPROVED EQUAL	LA SERIES

REVISIONS			
NO.	DESCRIPTION	DATE	BY
0	ISSUED FOR TENDER	2024.08.29	MJM

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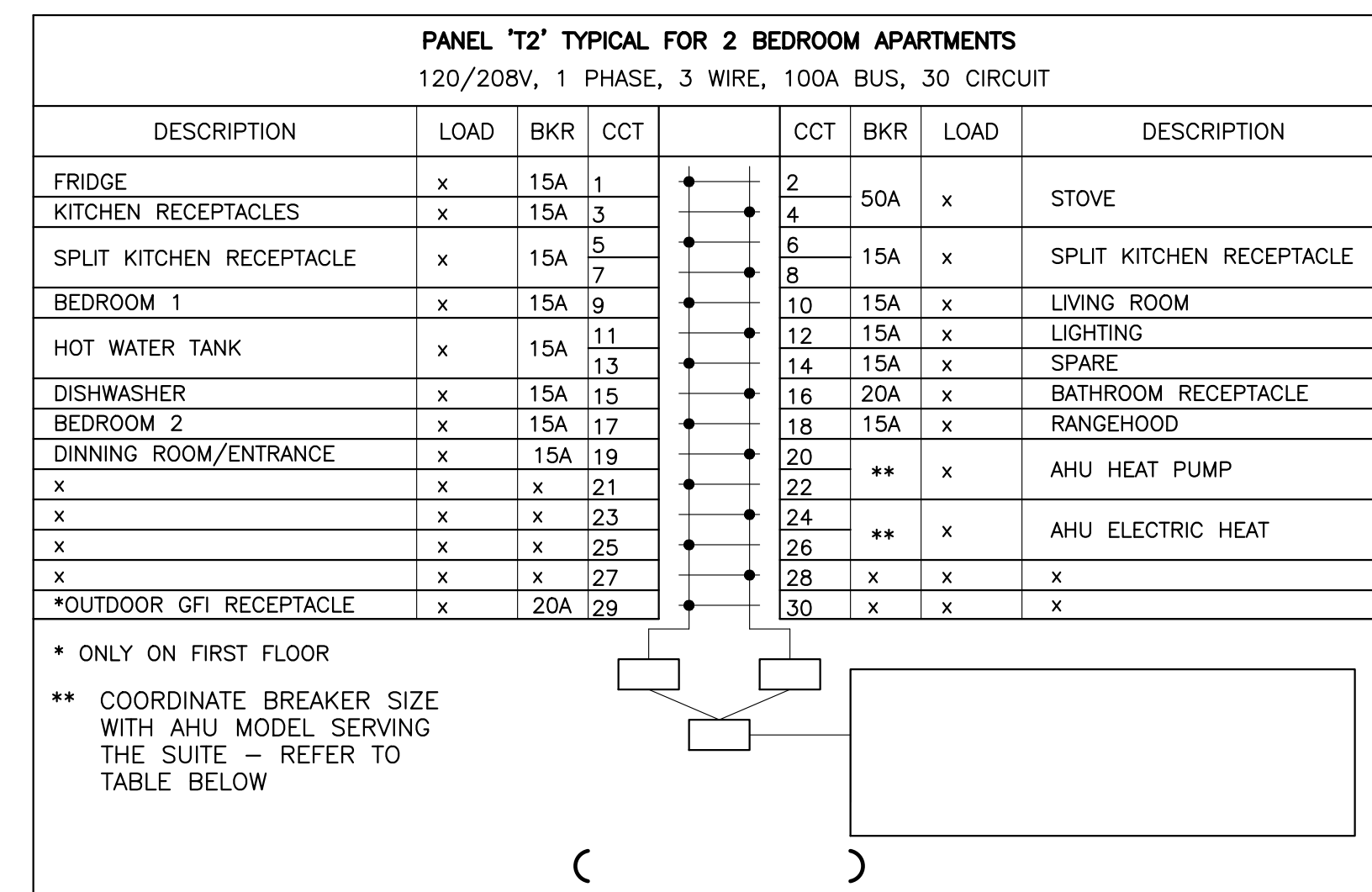
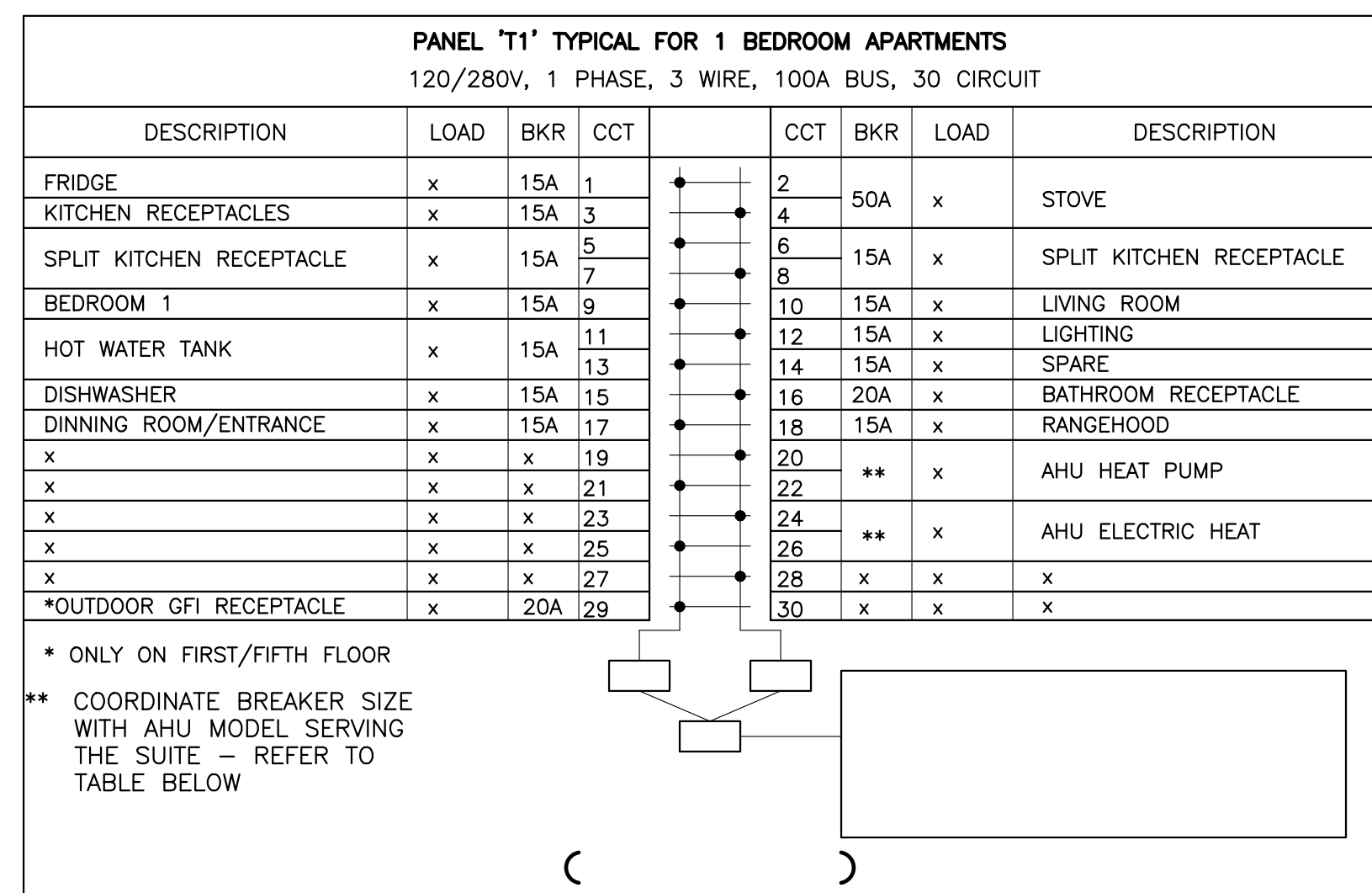
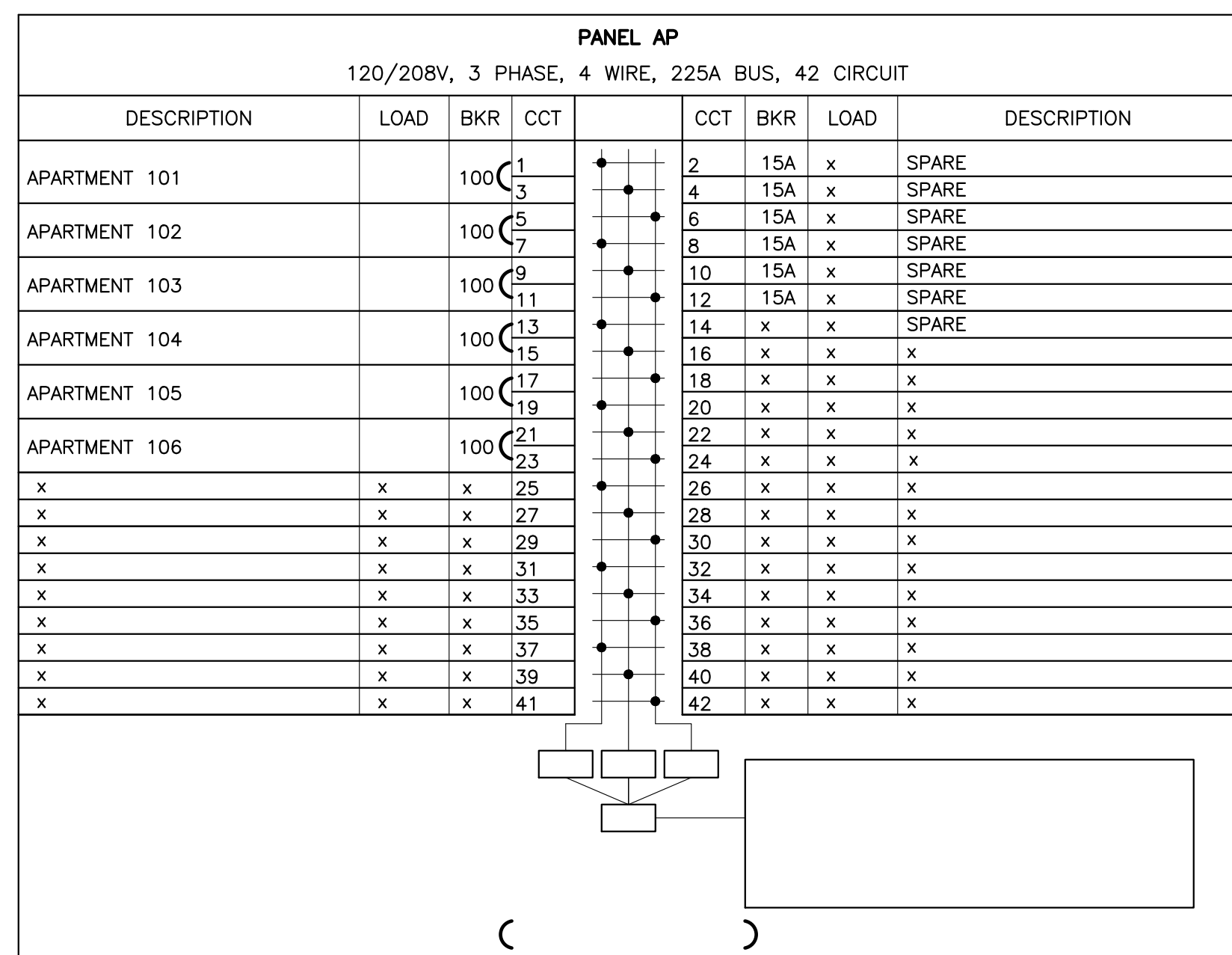
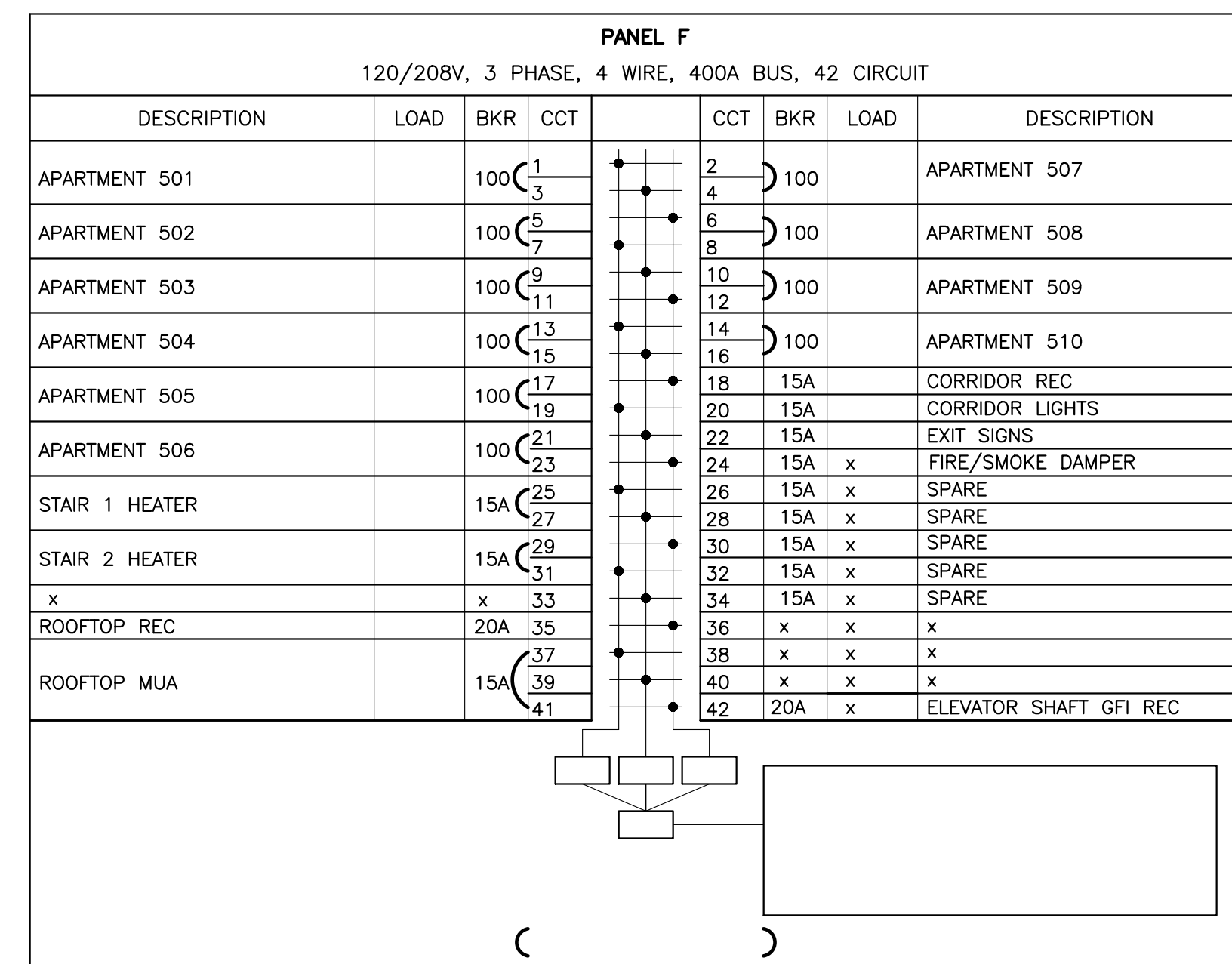
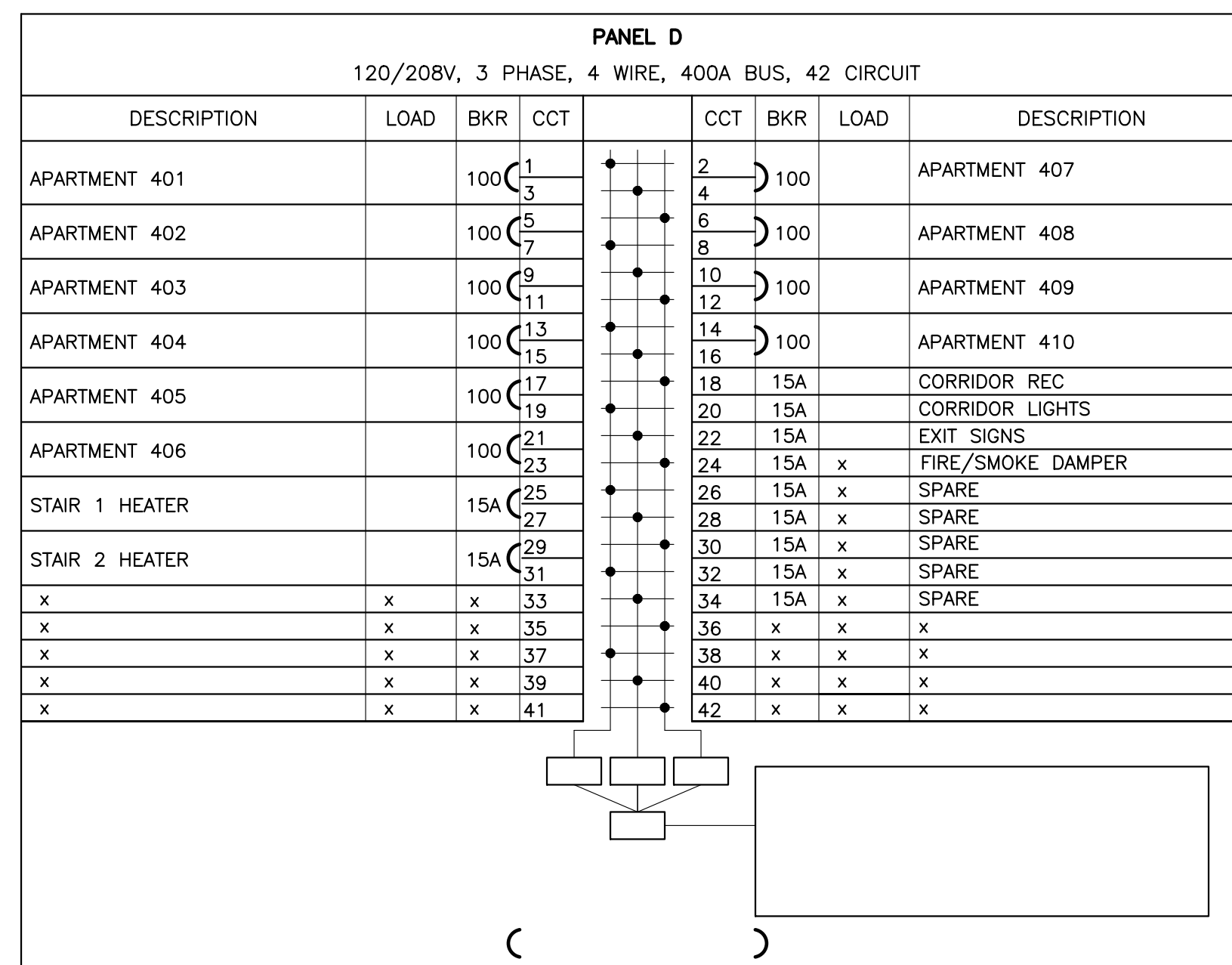
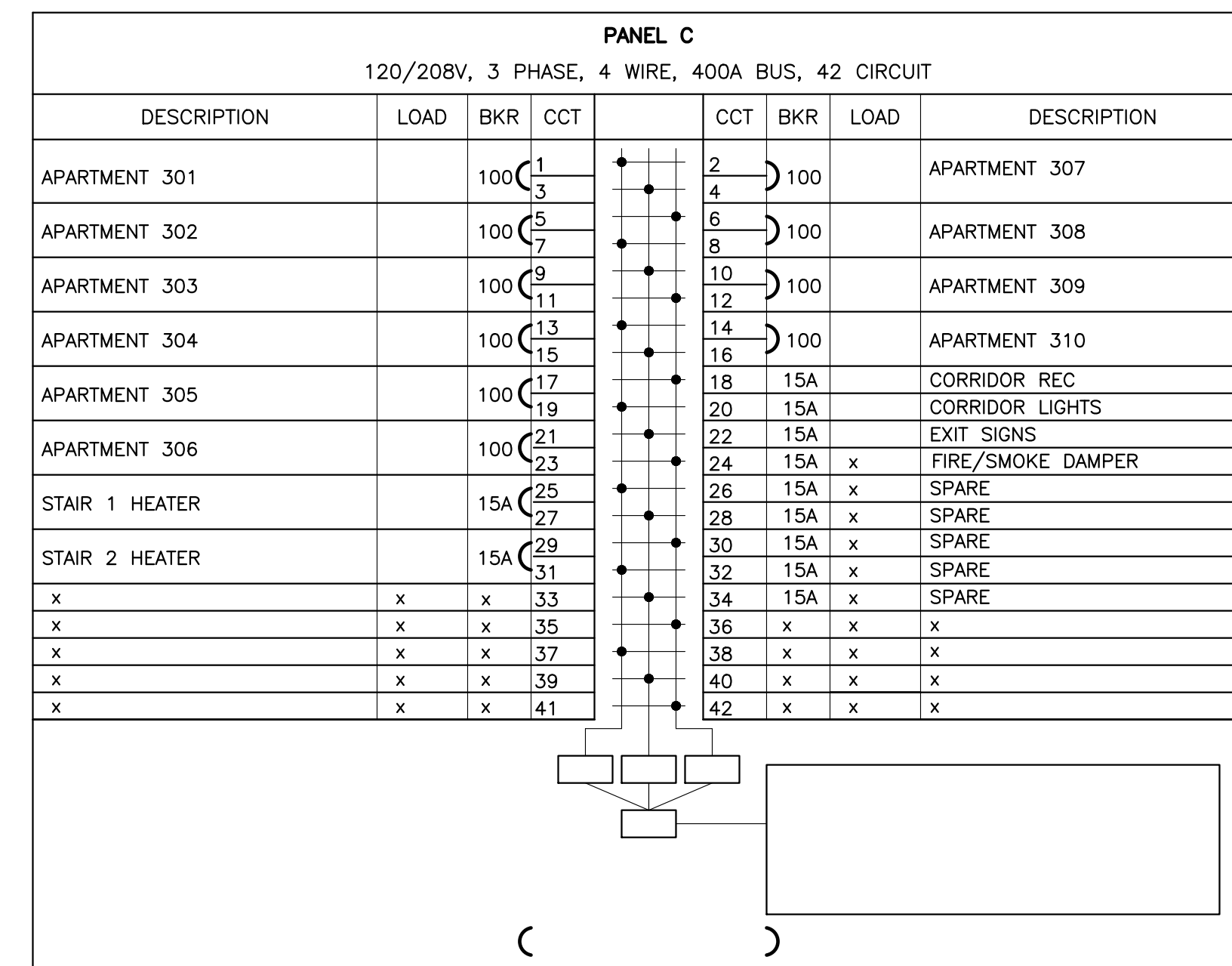
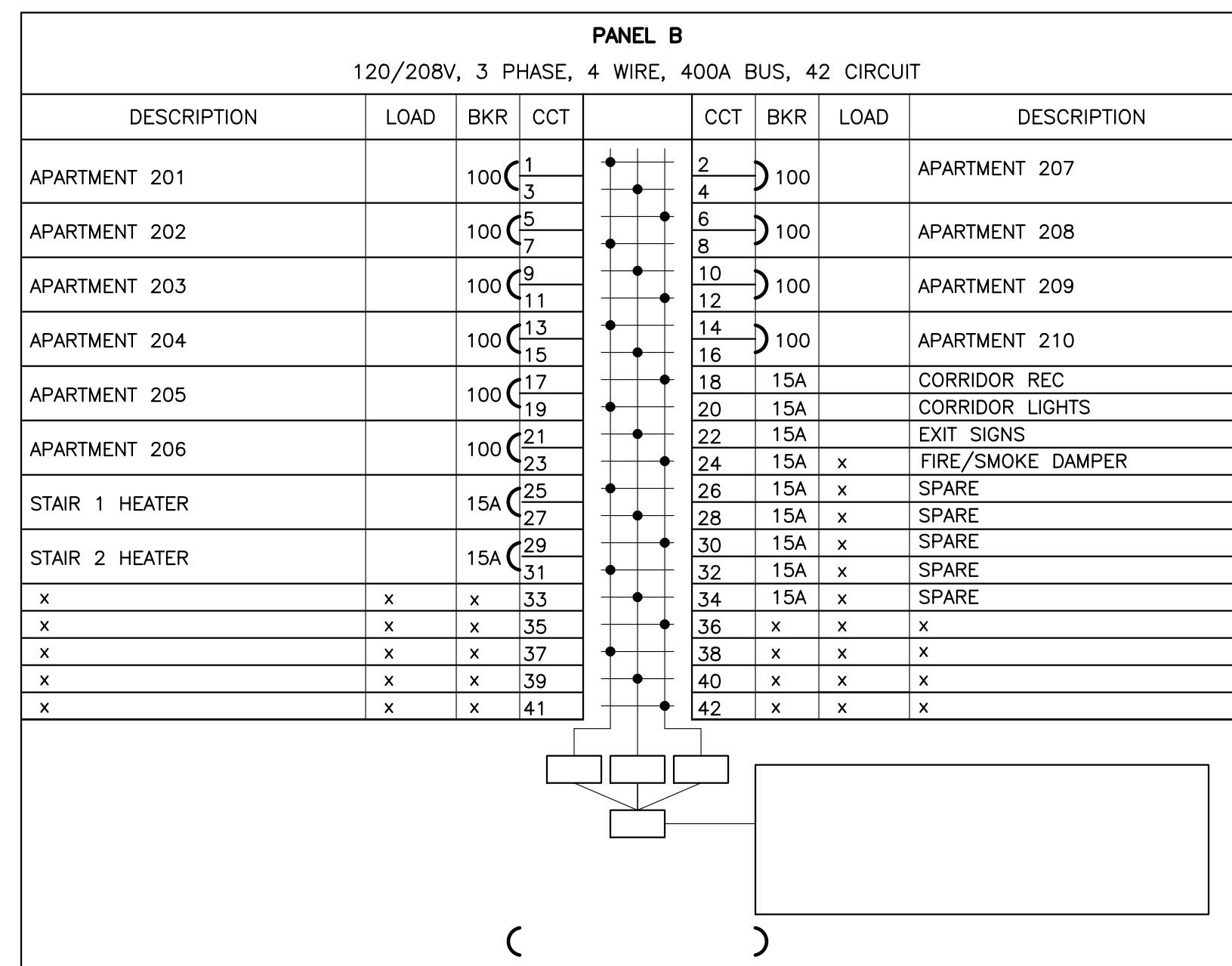
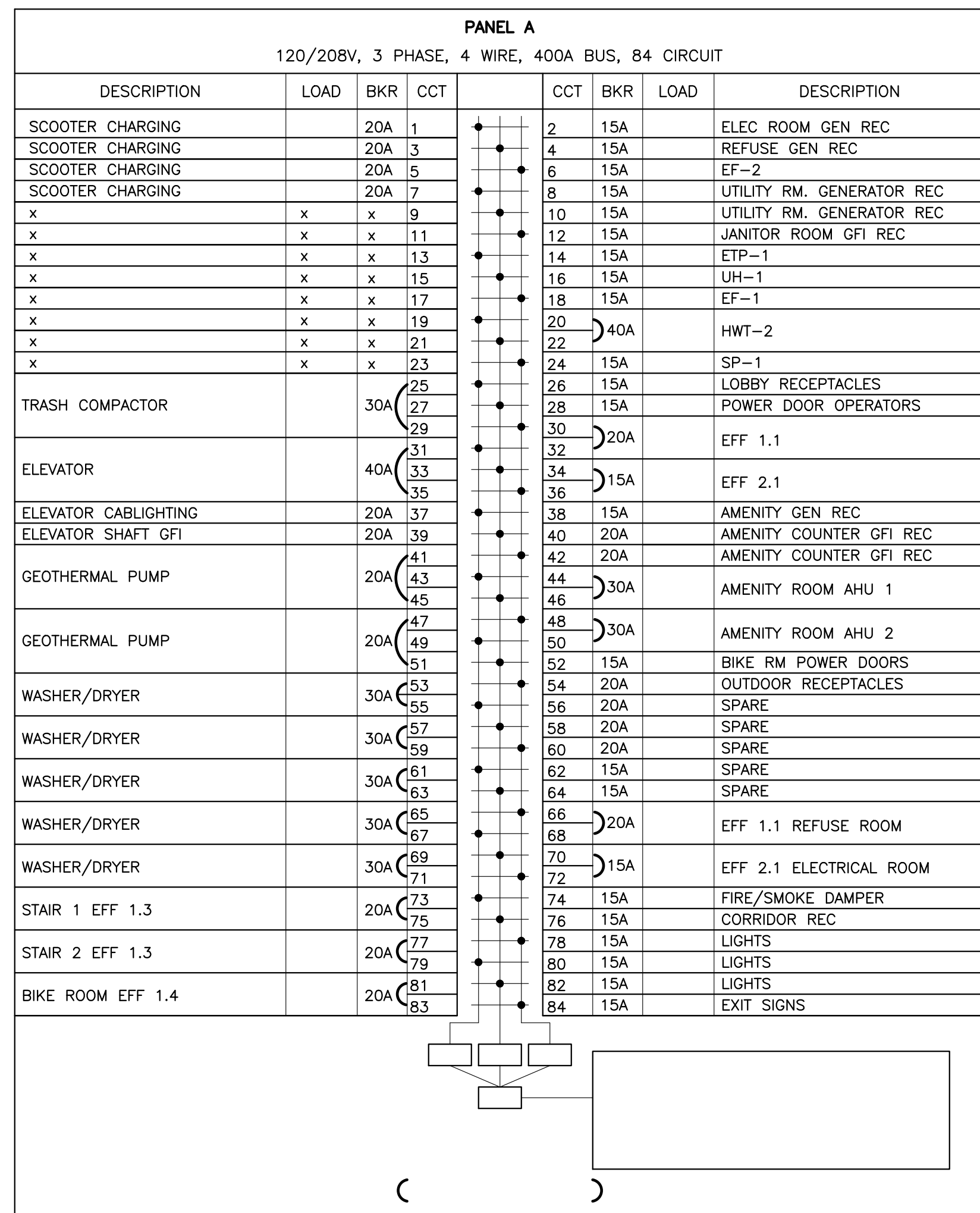


PROJECT  
**COURTICE SENIOR DEVELOPMENT**  
 1697 HIGHWAY No 2  
 CLARINGTON, ON

TITLE  
**LEGENDS**

DESIGN	MJM	SCALE	N.T.S.
DRAWN	AJM	DWG NO.	
CHECKED	MJM	<b>E16</b>	
APPROVED	MJM		
PROJECT	7393		





AHU IDENT.	BREAKER SIZE	
	HEAT PUMP	ELECTRIC HEAT
AHU-1.1	25A	30A
AHU-1.2	25A	40A
AHU-2.2	30A	40A
AHU-2.3	35A	60A

NO.	DESCRIPTION	DATE	BY
0	ISSUED FOR TENDER	2024.08.29	MJM

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**PROJECT**

**COURTICE SENIOR DEVELOPMENT**

1697 HIGHWAY No 2  
CLARINGTON, ON

TITLE			
PANEL BOARD SCHEDULES			
DESIGN	MJM	SCALE N.T.S.	
DRAWN	A		

## ELECTRICAL SPECIFICATIONS

### 1. GENERAL CONDITIONS

DO ALL WORK IN ACCORDANCE WITH ONTARIO ELECTRICAL SAFETY CODE, CURRENT EDITION, BASED UPON THE CANADIAN ELECTRICAL CODE, PART I, CSA STANDARD C22.1, AND ALL BULLETINS TO DATE.  
THE QUALITY OF THE MATERIALS AND WORKMANSHIP SHALL BE ACCEPTABLE TO THE ARCHITECT, OWNER AND ENGINEER.

### 2. SCOPE OF WORK

PROVIDE ALL MATERIALS EQUIPMENT AND LABOUR TO PROVIDE A COMPLETE OPERATING INSTALLATION AS DESIGNATED IN THIS SPECIFICATION AND AS INDICATED ON THE DRAWINGS EXCEPT WHERE OTHERWISE NOTED.  
THE SCOPE OF WORK INCLUDES, BUT IS NOT LIMITED TO, SUPPLY AND INSTALLATION OF THE FOLLOWING ITEMS:

- 2.1 MAIN SERVICE
- 2.2 POWER DISTRIBUTION.
- 2.3 INTERIOR LIGHTING AND CONTROLS
- 2.4 EMERGENCY LIGHTING AND EXIT SIGNAGE.
- 2.5 FEEDERS AND OVER CURRENT PROTECTION FOR MECHANICAL EQUIPMENT.
- 2.6 FIRE ALARM SYSTEM
- 2.7 BACKUP GENERATOR.

### 3. INSURANCE

MAINTAIN INSURANCE TO FULLY PROTECT THE OWNER, CONTRACTOR AND ENGINEER FROM ANY AND ALL CLAIMS UNDER THE WORKMEN'S COMPENSATION ACT. ALSO ALL INSURANCE AS NOTED WITHIN ARCHITECTURAL GENERAL CONDITIONS. POST PROJECT NOTIFICATION AT THE SITE IN ACCORDANCE WITH MINISTRY OF LABOUR REQUIREMENTS.

### 4. PERMITS, FEES AND INSPECTION

PAY ALL ELECTRICAL SAFETY AUTHORITY (ESA) FEES ASSOCIATED WITH PERMIT, INSPECTION AND EQUIPMENT APPROVAL.  
NOTIFY ENGINEER OF CHANGES REQUIRED BY ELECTRICAL SAFETY AUTHORITY PRIOR TO MAKING CHANGES.  
FURNISH CERTIFICATES OF ACCEPTANCE FROM ESA AND AUTHORITIES HAVING JURISDICTION OF COMPLETION OF WORK TO ENGINEER.

### 5. DRAWINGS

PREPARE WITHOUT EXTRA COST, ANY LARGE SCALE INTERERERENCE DRAWINGS WHICH MAY BE REQUIRED BY THE EXAMINING AUTHORITIES OR THE ENGINEER.  
PRIOR TO PROCEEDING WITH THE WORK; EXAMINE DRAWINGS BY OTHER TRADES INCLUDING ARCHITECTURAL AND MECHANICAL.

WHERE DISCREPANCIES ARE NOTED BETWEEN THE DRAWINGS AND/OR SPECIFICATIONS, CONTACT ENGINEER FOR RESOLUTION BEFORE STARTING ON THAT PART OF THE WORK.

### 6. SHOP DRAWINGS AND PRODUCT DATA

'SHOP DRAWINGS' MEANS DRAWINGS, DIAGRAMS, ILLUSTRATIONS, SCHEDULES, PERFORMANCE, CHARTS, BROCHURES, AND OTHER DATA WHICH ARE TO BE PROVIDED BY CONTRACTOR TO ILLUSTRATE DETAILS OF A PORTION OF THE WORK.  
INDICATE MATERIALS, METHODS OF CONSTRUCTION, AND ATTACHMENT OR ANCHORAGE, NECESSARY FOR COMPLETION OF WORK.  
ADJUSTMENTS MADE ON SHOP DRAWINGS BY OWNER OR ENGINEER ARE NOT INTENDED TO CHANGE CONTRACT PRICE.  
MAKE CHANGES IN SHOP DRAWINGS AS OWNER OR ENGINEER MAY REQUIRE. SUBMIT 6 COPIES OF 1 GOOD QUALITY DIGITAL COPY OF PRODUCT DATA SHEETS OR BROCHURES FOR LIGHTING FIXTURES, LIGHTING CONTROLS, EMERGENCY LIGHTINGS, EXIT SIGNS, POWER DISTRIBUTION EQUIPMENT AND FIRE ALARM COMPONENTS.  
PROVIDE 1 HARD COPY AND 1 DIGITAL COPY OF MAINTENANCE MANUALS COMPLETE WITH WARRANTY, CERTIFICATE OF INSPECTION BY ESA, FIRE ALARM VERIFICATION REPORT, AND COPY OF ALL PRODUCT LITERATURE AND MAINTENANCE INFORMATION.

### 7. AS BUILT DRAWINGS

PROVIDE TWO MARKED COPIES OF "AS-BUILT" DRAWINGS SHOWING ALL CHANGES TO THE ORIGINAL DESIGN AND SYSTEMS AS INSTALLED. ALL CHANGES SHALL BE MARKED CLEARLY AND NEATLY.

### 8. CUTTING AND PATCHING

ELECTRICAL CONTRACTOR SHALL PERFORM ALL CUTTING AND PATCHING REQUIRED FOR THE WORK OF THIS DIVISION. CUTTING AND DRILLING SHALL BE PERFORMED IN A MANNER SO AS TO CAUSE LITTLE DAMAGE AS POSSIBLE. ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE AND PAY FOR ANY DAMAGE CAUSED TO THE BUILDING BY WORK OF THIS DIVISION.

### 9. SUPPORTS AND HANGERS

PROVIDE STRUCTURAL SUPPORTS HANGERS BRACKETS AND INSERTS REQUIRED FOR INSTALLATION OF EQUIPMENT AND CONDUIT. PROVIDE CONDUIT FOR ALL SERVICES PENETRATING THE FLOOR SLAB. SEAL ALL PENETRATIONS THROUGH FIRE WALLS AND FLOOR SLABS WITH AN APPROVED NON-SHRINK, FIREPROOF AND WATERPROOF FIRESTOPPING MATERIAL APPROVED BY THE ARCHITECT.

### 10. EQUIPMENT AND MATERIAL

ALL MATERIALS USED THROUGHOUT SHALL BE NEW, C.S.A. APPROVED AND OF ONE MANUFACTURE FOR LIKE EQUIPMENT. OBTAIN AND PAY FOR SPECIAL ELECTRICAL SAFETY AUTHORITY INSPECTION OF SPECIFIED NON-C.S.A. ELECTRICAL EQUIPMENT.

### 11. CARE, OPERATION AND STARTUP

INSTRUCT OPERATING PERSONNEL IN THE OPERATION, CARE AND MAINTENANCE OF EQUIPMENT.

### 12. CO-ORDINATION

CO-ORDINATE WITH OTHER TRADES, INCLUDING MECHANICAL SYSTEMS, SO AS NOT TO INTERFERE WITH THE WORK OR SCHEDULE OF OTHER TRADES.

### 13. IDENTIFICATION

PROVIDE LAMACOID NAMEPLATES AND TYPED DIRECTORIES FOR ALL NEW PANELS.

### 14. WARRANTY

UPON COMPLETION OF THE WORK, PROVIDE A WRITTEN ONE YEAR GUARANTEE COVERING MATERIALS AND WORKMANSHIP. REPAIR OR REPLACE, WITHOUT COST TO THE OWNER, ANY DEFECTS IN WORKMANSHIP OR MATERIALS WHICH IN THE OPINION OF THE OWNER, ARE NOT DUE TO MISUSE OR NEGLIGENCE.

### 15. CONDUITS

1. RIGID GALVANIZED STEEL CONDUIT TO BE USED WHERE SUBJECT TO MECHANICAL DAMAGE.
2. ELECTRICAL METALLIC TUBING (EMT) WITH COUPLINGS TO BE USED EXCEPT WHERE EMBEDDED IN CONCRETE OR SUBJECT TO UNDUE MOISTURE OR MECHANICAL DAMAGE.
3. RIGID PVC CONDUIT WHERE EMBEDDED IN CONCRETE OR BELOW GRADE.
4. FOR UNDERGROUND CONDUITS, SLOPE CONDUITS TO PROVIDE DRAINAGE.
5. FLEXIBLE ALUMINUM CONDUIT WITH WEATHERPROOF COVERING TO BE USED WHERE SUBJECT TO VIBRATION OR STRAIN RELIEF.
6. INSTALL CONDUITS TO CONSERVE HEADROOM IN EXPOSED LOCATIONS AND CAUSE MINIMUM INTERFERENCE IN SPACES THROUGH WHICH THEY PASS.
7. CONCEAL CONDUITS EXCEPT IN MECHANICAL AND ELECTRICAL SERVICE ROOMS AND IN UNFINISHED AREAS.
8. MINIMUM CONDUIT SIZE FOR LIGHTING AND POWER CIRCUITS SHALL BE 1/2". BEND CONDUIT COLD. REPLACE IF KINKED OR FLATTENED MORE THAN 1/10TH OF ITS ORIGINAL DIAMETER.
9. MECHANICALLY BEND STEEL CONDUIT OVER 3/4" DIA.
10. FIELD THREADS ON RIGID CONDUIT MUST BE OF SUFFICIENT LENGTH TO DRAW CONDUITS UP TIGHT.
11. INSTALL FISH CORD IN EMPTY CONDUITS.
12. RUN 2-1" SPARE CONDUITS UP TO CEILING SPACE AND 2-1" SPARE CONDUITS DOWN TO CEILING SPACE FROM EACH FLUSH MOUNTED PANEL. TERMINATE THESE CONDUITS IN 6" x 6" x 4" JUNCTION BOXES IN CEILING SPACE OR IN CASE OF AN EXPOSED CONCRETE SLAB, TERMINATE EACH CONDUIT IN FLUSH CONCRETE SURFACE TYPE BOX.

13. REMOVE AND REPLACE BLOCKED CONDUIT SECTIONS.
14. DRY CONDUITS OUT BEFORE INSTALLING WIRE.
15. RUN CONDUITS PARALLEL OR PERPENDICULAR TO BUILDING LINES.
16. LOCATE CONDUITS BEHIND INFRARED OR GAS FIRED HEATERS WITH MINIMUM 5' CLEARANCE.
17. GROUP CONDUITS WHEREVER POSSIBLE ON SUSPENDED OR SURFACE CHANNELS.
18. DO NOT PASS CONDUITS THROUGH STRUCTURAL MEMBERS EXCEPT AS INDICATED.
19. DO NOT LOCATE CONDUITS LESS THAN 3" PARALLEL TO HOT WATER LINES WITH MINIMUM OF 1" AT CROSSOVERS.
20. FOR CONDUITS IN CAST-IN-PLACE CONCRETE, LOCATE TO SUIT REINFORCING STEEL. INSTALL IN CENTRE ONE THIRD OF SLAB.
21. PROTECT CONDUITS FROM DAMAGE WHERE THEY STUB OUT OF CONCRETE.
22. INSTALL SLEEVES WHERE CONDUITS PASS THROUGH SLAB OR WALL.
23. PROVIDE OVERSIZED SLEEVE FOR CONDUITS PASSING THROUGH WATERPROOF MEMBRANE, BEFORE MEMBRANE IS INSTALLED. USE COLD MASTIC BETWEEN SLEEVE AND CONDUIT.
24. DO NOT PLACE CONDUITS IN SLABS IN WHICH SLAB THICKNESS IS LESS THAN 4 TIMES CONDUIT DIAMETER.
25. FOR CONDUITS IN CAST-IN-PLACE CONCRETE, ENCASE CONDUITS COMPLETELY IN CONCRETE COVER AND ORGANIZE CONDUITS IN SLAB TO MINIMIZE CROSS-OVERS.
26. FOR CONDUITS IN CAST-IN-PLACE SLABS ON GRADE RUN CONDUITS 25mm AND LARGER BELOW SLAB AND ENCASED IN 75mm CONCRETE ENVELOPE. PROVIDE 50mm OF SAND OVER CONCRETE ENVELOPE BELOW FLOOR SLAB.

### 16. SPLITTERS, JUNCTION, PULL BOXES AND CABINETS

1. INSTALL SPLITTERS AND MOUNT PLUMB, TRUE AND SQUARE TO THE BUILDING LINES.
2. EXTEND SPLITTERS FULL LENGTH OF EQUIPMENT ARRANGEMENT EXCEPT WHERE INDICATED OTHERWISE.
3. INSTALL PULL BOXES IN INCONSPICUOUS BUT ACCESSIBLE LOCATIONS.
4. MOUNT CABINETS WITH NO OVERCURRENT DEVICE OPERATING HANDLE MORE THAN 1.7m ABOVE FINISHED FLOOR.
5. INSTALL PULL BOXES SO AS NOT TO EXCEED 30m OF CONDUIT RUN BETWEEN PULL BOXES.
6. SUPPORT PULL BOXES INDEPENDENTLY OF CONDUIT.
7. BOXES INSTALLED OUTDOORS SHALL BE WEATHERPROOF COMPLETE WITH GASKET.

### 17. INSTALLATION OF OUTLETS

1. THE DRAWINGS SHOW APPROXIMATE LOCATION OF OUTLETS, EXACT LOCATION SHALL BE COORDINATED ON THE SITE WITH OTHER TRADES, ARCHITECTURAL DRAWINGS, ETC. OUTLETS INACCURATELY LOCATED SHALL BE READJUSTED OR RELOCATED. THE CONTRACTOR'S EXPENSE.
- UNLESS OTHERWISE NOTED ON THE DRAWING LOCATE OUTLETS AS FOLLOWS:
  2. RECEPTACLES, TELEPHONE AND ALARM OUTLETS (18") 450mm ABOVE FINISHED FLOOR.
  3. OUTLETS OVER COUNTER (45") 1143mm ABOVE FLOOR OR AS DIRECTED BY OWNER OR ARCHITECT.
  4. OUTLETS IN MECHANICAL, ELECTRICAL AND TELEPHONE ROOMS (47") 1200mm ABOVE FLOOR.
  5. LIGHT SWITCHES MAXIMUM (47") 1200mm ABOVE FLOOR.
  6. RACEWAYS SHALL BE EMT UNLESS OTHERWISE NOTED.
  7. MANUAL PULL STATION (47") 1200mm ABOVE FLOOR.

### 18. WIRE AND CABLE

1. MINIMUM SIZE OF CONDUCTORS SHALL BE #12 AWG.
2. CONDUCTORS SHALL BE COPPER, SIZED AS INDICATED, WITH 600V INSULATION OF CROSS LINKED THERMOSETTING POLYETHYLENE MATERIAL RW90-XLPE.
3. SIZE OF WIRING FOR BRANCH CIRCUITS GREATER THAN 30m IN LENGTH SHALL BE #10 AWG UNLESS OTHERWISE INDICATED ON THE PLANS.
4. WIRES TO BE COLOURED AS FOLLOWS:

12V DC BLUE  
120V AC NEUTRAL WHITE  
120V AC SWITCHED BLACK OR RED  
120V AC LINE BLACK.

5. USE MATERIALS AND METHODS APPROVED BY THE ONTARIO ELECTRICAL SAFETY CODE FOR USE IN NON-COMBUSTIBLE CONSTRUCTION.
6. ARMoured CABLE TYPE AC90 (BX) WITH INTERLOCKING ARMOUR FABRICATED FROM ALUMINUM STRIP C/W COPPER INSULATED CONDUCTORS, SIZE AS INDICATED, TO BE USED IN CONCEALED WALL AND CEILING CAVITIES.

### 19. GROUNDING

1. INSTALL COMPLETE PERMANENT, CONTINUOUS GROUNDING SYSTEM INCLUDING, ELECTRODES, CONDUCTORS, CONNECTORS, ACCESSORIES AS INDICATED TO CONFORM TO REQUIREMENTS OF ESA, ENGINEER, AND LOCAL AUTHORITY HAVING JURISDICTION OVER THE INSTALLATION. WHERE EMT IS USED, RUN BOND WIRE IN CONDUIT.
2. INSTALL CONNECTORS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
3. PROTECT EXPOSED GROUNDING CONDUCTORS FROM MECHANICAL INJURY.
4. MAKE BURIED CONNECTIONS, AND CONNECTIONS TO ELECTRODES, USING COPPER CAD WELDING PROCESS CONNECTORS.
5. USE MECHANICAL CONNECTORS FOR GROUNDING CONNECTIONS TO EQUIPMENT PROVIDED WITH LUGS.
6. SOLDERED JOINTS NOT PERMITTED.
7. INSTALL BONDING WIRE FOR FLEXIBLE CONDUIT, CONNECTED AT BOTH ENDS TO GROUNDING BUSHING, SOLDERLESS LUG, CLAMP OR CUP WASHER AND SCREW.

### 20. DISCONNECT SWITCHES

1. FUSIBLE, AND NON-FUSIBLE, DISCONNECT SWITCH SWITCHES IN ENCLOSURE, SIZE AS INDICATED.
2. PROVISION FOR PADLOCKING IN OFF SWITCH POSITION BY THREE LOCKS.
3. MECHANICALLY INTERLOCKED DOOR TO PREVENT OPENING WHEN HANDLE IN ON POSITION.
4. FUSES: SIZE AS INDICATED. PROVIDE THREE SPARE FUSES OF EACH TYPE AND SIZE. INSTALLED ABOVE 600A AND SIX SPARE FUSES OF EACH TYPE AND SIZE INSTALLED UP TO AND INCLUDING 600A. PROVIDE SUITABLE SIZED CABINET TO STORE SPARE FUSES.
5. FUSEHOLDERS: SUITABLE WITHOUT ADAPTORS, FOR TYPE AND SIZE OF FUSE INDICATED.
6. QUICK-MAKE, QUICK-BREAK ACTION.
7. ON-OFF SWITCH POSITION INDICATION ON SWITCH ENCLOSURE COVER.
8. ENCLOSURES SHALL BE RATED EEMAC 1 EXCEPT FOR WEATHERPROOF ENCLOSURES WHICH SHALL BE EEMAC 3.

### 21. PANEL BOARDS

1. PANELBOARDS SHALL BE THE PRODUCT OF ONE MANUFACTURER. SIEMENS, CUTLER HAMMER AND SCHNEIDER ARE ACCEPTABLE.
2. INSTALL CIRCUIT BREAKERS IN PANELBOARDS BEFORE SHIPMENT.
3. SEQUENCE PHASE BUSSING WITH ODD NUMBER BREAKERS ON LEFT AND EVEN ON RIGHT, WITH EACH BREAKER IDENTIFIED BY PERMANENT NUMBER IDENTIFICATION AS TO CIRCUIT NUMBER AND PHASE.
4. PANELBOARDS: MAINS, NUMBER OF CIRCUITS, AND NUMBER AND SIZE OF BRANCH CIRCUIT BREAKERS AS INDICATED ON DRAWINGS.
5. TWO KEYS FOR EACH PANELBOARD AND KEY PANELBOARDS ALIKE.
6. ALUMINUM OR COPPER BUS WITH NEUTRAL OF SAME AMPERE RATING AS MAINS.
7. MAINS: SUITABLE FOR BOLT-ON BREAKERS.
8. TRIM WITH CONCEALED FRONT BOLTS AND HINGES.
9. TRIM AND DOOR FINISH: BAKED GREY ENAMEL.
10. TWO AND THREE POLE BREAKER OPERATION SHALL BE BY MEANS OF A COMMON TRIP AND A SINGLE HANDLE. A TIE HANDLE CONNECTING TWO OR THREE SINGLE POLE BREAKERS WILL NOT BE ACCEPTED.

### 22. ELECTRIC MOTORS EQUIPMENT AND CONTROLS

1. CONTROL WIRING AND CONDUIT IS SPECIFIED BY ELECTRICAL EXCEPT FOR CONDUIT, WIRING AND CONNECTIONS BELOW 50V WHICH ARE RELATED TO CONTROL SYSTEMS SPECIFIED BY MECHANICAL AND SHOWN ON MECHANICAL DRAWINGS.
2. ELECTRICAL SHALL CHECK ALL MOTOR CONNECTION FOR CORRECT PHASE ROTATION, WHERE APPLICABLE.

### 23. LIGHTING FIXTURES

1. PROVIDE LIGHT FIXTURES AS SHOWN ON LIGHTING SCHEDULE ON THE DRAWINGS. ENSURE THAT ALL EQUIPMENT IS EQUAL TO THE PRODUCTS SPECIFIED IN ALL RESPECTS.
2. LOCATE AND INSTALL LUMINAIRES AS INDICATED.
3. JUNCTION BOXES IN SUSPENDED CEILING SPACES SHALL BE ACCESSIBLE THROUGH THE FIXTURES OR BY REMOVABLE CEILING.
4. FOR SUSPENDED CEILING INSTALLATIONS SUPPORT LUMINAIRES INDEPENDENTLY OF CEILING BY AIRCRAFT CABLE
5. ALIGN LUMINAIRES MOUNTED INDIVIDUALLY PARALLEL OR PENDICULAR TO BUILDING GRID.

### 24. INSTALLATION OF OUTLETS

1. THE DRAWINGS SHOW APPROXIMATE LOCATION OF OUTLETS, EXACT LOCATION SHALL BE COORDINATED ON THE SITE WITH OTHER TRADES, ARCHITECTURAL DRAWINGS, ETC. OUTLETS INACCURATELY LOCATED SHALL BE READJUSTED OR RELOCATED AT THE CONTRACTOR'S EXPENSE. UNLESS OTHERWISE NOTED ON THE DRAWING LOCATE OUTLETS AS FOLLOWS:
  - 1.1 RECEPTACLES, TELEPHONE AND ALARM OUTLETS (12") 305mm ABOVE FINISHED FLOOR.
  - 1.2 OUTLETS OVER COUNTER (45") 1143mm ABOVE FLOOR OR CO-ORDINATION.
  - 1.3 OUTLETS IN MECHANICAL, ELECTRICAL AND TELEPHONE ROOMS (48") 1220mm ABOVE FLOOR.
  - 1.4 LIGHT SWITCHES NOT LESS THAN (35.4") 900mm AND NOT MORE THAN (43") 1100mm ABOVE FLOOR.
  2. RACEWAYS SHALL BE EMT UNLESS OTHERWISE NOTED.
  3. SUPPORT OUTLET BOXES, JUNCTION BOXES, CONDUIT AND THE LIKE.
  4. LABEL ALL OUTLETS WITH THE PANEL AND CIRCUIT NUMBER FROM WHICH IT IS FED

### 25. RECEPTACLES

1. WHITE DUPLEX RECEPTACLES CSA TYPE 5-15R, 125V, 20A, T-SLOT, U GROUND.
2. WHITE COVER PLATES.
3. IF RECEPTACLE IS SURFACE MOUNTED USE CAST BOX.

### 26. EQUIPMENT FOR EMERGENCY LIGHTING

1. SUPPLY VOLTAGE: 120V AC
2. OUTPUT VOLTAGE: 12V DC
3. OPERATIONS TIME: 60 MINUTES MINIMUM
4. CABINET: SUITABLE FOR DIRECT OR SHELF MOUNTING TO WALL C/W KNOCKOUTS FOR CONDUIT, REMOVABLE OR HINGED FRONT PANEL FOR EASY ACCESS TO BATTERIES.

### 27. TELEPHONE/COMPUTER RACEWAY SYSTEM

1. PROVIDE EMPTY CONDUIT SYSTEMS FOR TELEPHONE AND DATA AS SHOWN ON THE DRAWINGS.
2. WHERE CONDUITS NOT SHOWN ON DRAWINGS PROVIDE CONDUITS FROM OUTLET BOX TO ACCESSIBLE CEILING SPACE.
3. RACEWAYS SHALL BE EMT.
4. A MAXIMUM OF 2 LONG RADIUS 90 DEGREE BENDS SHALL BE PROVIDED BETWEEN PULL BOXES.
5. A WIRE SHALL BE PULLED AND LEFT IN EACH CONDUIT RUN TO FACILITATOR THE FUTURE PULLING OF WIRES.
6. PROVIDE NECESSARY BOXES AND ASSOCIATED COVER PLATES AS REQUIRED FOR THE ABOVE SYSTEMS.

### 28. THIRD PARTY TESTING

1. THE CONTRACTOR IS RESPONSIBLE TO PROVIDE THIRD PARTY TESTING OF THE LIGHTING SYSTEM IN ACCORDANCE WITH ASHRAE STANDARD 90.1-2010, SECTION 9.4.4 FUNCTIONAL TESTING. THE PARTY RESPONSIBLE FOR THE FUNCTIONAL TESTING SHALL NOT BE DIRECTLY INVOLVED IN EITHER THE DESIGN OR CONSTRUCTION OF THE PROJECT AND SHALL PROVIDE DOCUMENTATION CERTIFYING THAT THE INSTALLED LIGHTING CONTROLS MEET OR EXCEED ALL DOCUMENTED PERFORMANCE CRITERIA.
2. LIGHTING CONTROL DEVICES AND CONTROL SYSTEMS SHALL BE TESTED TO ENSURE THAT CONTROL HARDWARE AND SOFTWARE ARE CALIBRATED, ADJUSTED, PROGRAMMED AND IN PROPER WORKING CONDITION IN ACCORDANCE WITH THE CONSTRUCTION DOCUMENTS AND MANUFACTURER'S INSTALLATION INSTRUCTIONS.
3. WHEN SENSORS, TIME SWITCHES, PROGRAMMABLE SCHEDULE CONTROLS OR PHOTOSENSORS ARE INSTALLED, THE FOLLOWING PROCEDURES SHALL BE PERFORMED:
  4. CONFIRM THAT THE PLACEMENT, SENSITIVITY AND TIME-OUT ADJUSTMENTS FOR OCCUPANT SENSORS YIELD ACCEPTABLE PERFORMANCE, LIGHTS TURN OFF ONLY AFTER SPACE IS VACATED. WHERE AN AUTO-ON MODE HAS BEEN SELECTED, LIGHTS DO NOT TURN ON UNLESS SPACE IS OCCUPIED.
  5. CONFIRM THAT THE TIME SWITCHES AND PROGRAMMABLE SCHEDULE CONTROLS ARE PROGRAMMED CORRECTLY TO TURN THE LIGHTS OFF.
  6. WHERE DAYLIGHT HARVESTING CAPABILITY HAS BEEN INSTALLED, CONFIRM THAT PHOTOSENSOR CONTROLS REDUCE ELECTRIC LIGHT LEVELS BASED ON THE AMOUNT OF USABLE DAYLIGHT IN THE SPACE AS SPECIFIED.

### 29. FIRE ALARM

1. PROVIDE ALL MATERIAL EQUIPMENT AND LABOUR REQUIRED FOR A COMPLETE AND ADEQUATE INSTALLATION OF THE FIRE ALARM SYSTEM AS SHOWN ON THE DRAWINGS AND AS DESCRIBED HEREIN.
2. SHOP DRAWINGS FOR THE COMPLETE SYSTEM, INCLUDING LAYOUT OF EQUIPMENT, ZONING AND COMPLETE WIRING DIAGRAMS FOR CONNECTIONS AND DEVICES, AND METHODS OR OPERATION SHALL BE SUBMITTED.
3. ALL COMPONENTS OF THE SYSTEM, ITS INSTALLATION AND THE SYSTEM AS A WHOLE SHALL BE ULC LISTED AND LABELED AND SHALL MEET THE REQUIREMENTS OF ALL AUTHORITIES HAVING JURISDICTION OF THE APPLICATION. THE ENTIRE INSTALLATION SHALL BE CARRIED OUT IN ACCORDANCE WITH CAN. ULC S524 AND SHALL BE VERIFIED IN ACCORDANCE WITH CAN. ULC S537.
4. BREAKER FOR FIRE ALARM CONTROL PANEL AND BOOSTER PANELS TO BE LOCKABLE AND CLEARLY IDENTIFIED BY PAINTING IT RED.
5. PROVIDE SEPARATE CIRCUITS FROM CONTROL PANEL TO EACH ZONE OF INITIATING DEVICES OR IF A SINGLE LOOP ENSURE ISOLATION MODULES ARE INSTALLED AS REQUIRED BY CODE.
6. SINGLE STAGE OPERATION.
7. ALARM DEVICES TO OPERATE IN TEMPORAL CODE. CONFIRM WITH LOCAL AUTHORITY.
8. ZONE OF ALARM DEVICE TO BE INDICATED ON CONTROL PANEL.
9. POWER SUPPLY IS 120VAC, 60HZ INPUT, 24VDC OUTPUT FROM RECTIFIER TO OPERATE ALARM AND SIGNAL CIRCUITS WITH STANDBY POWER GELL CELL BATTERIES. MINIMUM EXPECTED LIFE OF FOUR YEARS, SIZED IN ACCORDANCE WITH OBC.
10. PROVIDE FIRE ALARM SYSTEM RISER DIAGRAM IN CONTROL PANEL.
11. ARRANGE AND PAY FOR ON-SITE LECTURE AND DEMONSTRATION BY FIRE ALARM EQUIPMENT MANUFACTURER TO TRAIN OPERATIONAL PERSONNEL IN USE AND MAINTENANCE OF FIRE ALARM SYSTEM.
12. COORDINATE WITH MANUFACTURER TO PROVIDE STROBE LIGHT SYNCHRONIZATION MODULES AS REQUIRED.
13. PROVIDE SUFFICIENT OUTPUT MODULES IN FIRE ALARM CONTROL PANEL.
14. PROVIDE OUTPUT POWER BOOSTERS AS REQUIRED. COORDINATE WITH MANUFACTURER.
15. ALL FIRE ALARM JUNCTION BOXES SHALL BE PAINTED RED.
16. WHERE FIRE PROTECTION AND LIFE SAFETY SYSTEMS, AND SYSTEMS WITH FIRE PROTECTION AND LIFE SAFETY FUNCTIONS, ARE INTEGRATED WITH EACH OTHER, THE SYSTEMS SHALL BE TESTED AS A WHOLE IN ACCORDANCE WITH CAN/ULC-S1001, "INTEGRATED SYSTEMS TESTING OF FIRE PROTECTION AND LIFE SAFETY SYSTEMS" TO VERIFY THAT THE SYSTEMS HAVE BEEN PROPERLY INTEGRATED. TESTING SHALL BE COMPLETED BY A PROFESSIONAL ENGINEER LICENSED IN THE PROVINCE OF ONTARIO AND CERTIFIED BY ULC FOR COMPLETING THIS TESTING.

### 30. BACKUP POWER GENERATOR

1. PROVIDE A 350 KW STANDBY POWER SYSTEM TO SUPPLY ELECTRICAL POWER AT 120/208 VOLTS, 60 HERTZ, 3 PHASE. THE GENERATOR SHALL CONSIST OF A NATURAL GAS ENGINE, A SYNCHRONOUS AC ALTERNATOR, AND SYSTEM CONTROLS WITH ALL NECESSARY ACCESSORIES FOR A COMPLETE OPERATING SYSTEM.
2. THE GENSET SHALL BE PACKAGED WITH A SOUND ATTENUATING WEATHER PROTECTIVE ENCLOSURE TO MEET MOE CURRENT REQUIREMENTS FOR EASR REGISTRATION.
3. THE ENCLOSURE SHALL BE MADE OF STEEL WITH A MINIMUM THICKNESS OF 14 GAUGE. THE ENCLOSURE IS TO HAVE HINGED, REMOVABLE DOORS TO ALLOW ACCESS TO THE ENGINE, ALTERNATOR AND CONTROL PANEL. THE HINGES SHALL ALLOW FOR DOOR FIT ADJUSTMENT. HINGES AND ALL EXPOSED FASTENERS WILL BE STAINLESS STEEL OR J55000. THE USE OF POP-RIVETS WEAKENS THE PAINT SYSTEM AND IS NOT ALLOWED ON EXTERNAL PAINTED SURFACES. EACH DOOR WILL HAVE LOCKABLE HARDWARE WITH IDENTICAL KEYS.
4. THE ENCLOSURE SHALL BE COATED WITH ELECTROSTATIC APPLIED POWDER PAINT, BAKED AND FINISHED TO MANUFACTURER'S SPECIFICATIONS. THE COLOR WILL BE MANUFACTURER'S STANDARD. THE SOUND ATTENUATED ENCLOSURE SHALL UTILIZE AN UPWARD DISCHARGING RADIATOR HOOD. THE ENCLOSURE SHALL BE COMPLETELY LINED WITH SOUND DEADENING MATERIAL. THIS MATERIAL MUST BE OF A SELF EXTINGUISHING DESIGN.
5. THE GENSET SILENCER SHALL BE MOUNTED INSIDE THE DISCHARGE HOOD, AND SHALL BE OF CRITICAL GRADE.
6. FUEL TYPE: NATURAL GAS
7. GENERATOR OUTPUT (STANDBY): 350KW @ 120/208V, 3ø, 0.8 POWER FACTOR.
8. ENGINE RPM: 1800
9. THE GENERATOR SET MUST CONFORM TO APPLICABLE OESC AND OBC REQUIREMENTS.
10. CONTRACTOR TO SUBMIT SHOP DRAWING FOR GENERATOR, GENERATOR EXHAUST EMISSION DATA AND TESTING SOUND LEVEL AT 7M INFORMATION MUST BE INCLUDED IN SHOP DRAWINGS IN ORDER TO VERIFY MOE COMPLIANCE.
11. CONTRACTOR RESPONSIBLE TO PROVIDE FULLY FUNCTIONAL BACKUP GENERATOR SYSTEM INCLUDING ALL WIRING, CONCRETE PAD, AND CONTROL WIRING FOR A COMPLETE SYSTEM.
12. GENERATOR TO HAVE A REMOTE STATUS/ALARM PANEL LOCATED IN THE ELECTRICAL ROOM AREA.
13. SUBMITTALS
  - 13.1. ENGINE GENERATOR SPECIFICATION SHEET
  - 13.2. CONTROLS SPECIFICATION SHEET(S)
  - 13.3. INSTALLATION / LAYOUT DIMENSIONAL DRAWING
  - 13.4. WIRING SCHEMATIC
  - 13.5. SOUND DATA
  - 13.6. EMISSION CERTIFICATION
  - 13.7. WARRANTY STATEMENT

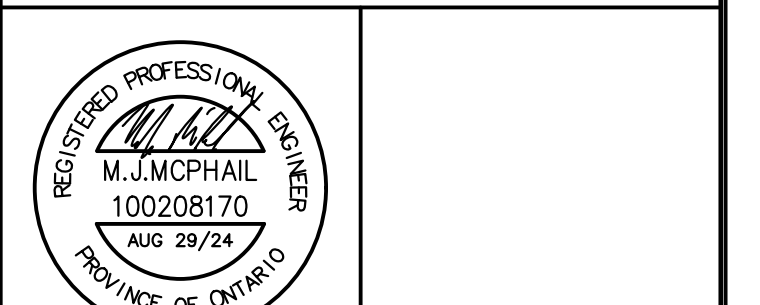
### 31. TRANSFER SWITCH

1. THE TRANSFER SWITCH SHALL BE AN AUTOMATIC TRANSFER SWITCH, SIZED ACCORDING TO AMPERAGE NOTED ON DRAWINGS. NO BYPASS REQUIRED.


0	ISSUED FOR TENDER	2024.08.29	MJM
NO.	DESCRIPTION	DATE	BY

#### REVISIONS

Kirkland Engineering Ltd BCIN: 28857



ELECTRICAL  
NOT TO BE USED FOR CONSTRUCTION UNLESS SIGNED BY THE ENGINEER.

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PROJECT  
**COURTICE SENIOR DEVELOPMENT**  
**1697 HIGHWAY No 2 CLARINGTON, ON**

TITLE <b>SPECIFICATIONS</b>	
DESIGN A/JM	SCALE N.T.S.
DRAWN A/JM	DWG NO.
CHECKED M/JM	<b>E18</b>
APPROVED M/JM	
PROJECT 7393	