ELECTRICAL DRAWING LIST
AIM-01

AIM KINGSTON FACILITY
FEBRUARY, 2023

No	DRAWING NUMBER	DRAWING NAME	REVISION
1	E-0000	ELECTRICAL COVER PAGE & DRAWING LIST	1
2	E-0001	ELECTRICAL SYMBOL LEGEND	1
3	E-9000	ELECTRICAL SPECIFICATIONS	1
4	EB-4000	ELECTRICAL POWER LAYOUT	1
5	EB-4001	ELECTRICAL ROOF PLAN	1
6	EC-4000	ELECTRICAL COMMUNICATION LAYOUT	1
7	EL-4000	ELECTRICAL LIGHTING LAYOUT	1
8	ER-4000	ELECTRICAL SITE PLAN	1
9	ES-8000	ELECTRICAL SCHEDULES & DETAILS & SINGLE LINE DIAGRAM	1

NOT FOR CONSTRUCTION

Key plan

Notes:

Rev.	Date	Drawn by	Revision	Checked by
2	2023-04-17	J.K.	ISSUED FOR BUILDING PERMIT	A.S.
1	2023-02-08	S.T.	ISSUED FOR TENDER	A.S.

Seals

2023-04-17
LICENSED PROFESSIONAL ENGINEER
A. SHAHID
100556845
PROVINCE OF ONTARIO

LAPORTE Engineering
100-89 Skyway Avenue
Toronto (ON) M9W 6R4
Canada
T. 416.675.6761
WWW.LAPORTECONSULTANTS.COM

Project
AIM KINGSTON FACILITY

Drawing
ELECTRICAL
COVER PAGE & DRAWING LIST

Designed by	A.SHAHID	Drawn by		Checked by	-
Date	2023-04-17	Scale	N.T.S.	Size	ARCH-D
Project #	AIM-01	Drawing #	E-0000	Revision	2

SINGLE LINE DIAGRAM

- MOTOR CIRCUIT PROTECTOR
- FUSED DISCONNECT
- DISCONNECT SWITCH
- RECLOSER
- FUSE
- COMBINATION MOTOR STARTER
- 50/51 GENERAL PROTECTION RELAY
- PROTECTION RELAY WITH ANSI NUMBER
- M METER 1
- M METER 2
- L LOAD
- CABLE
- E N TRANSFER SWITCH
- UNINTERRUPTIBLE POWER SUPPLY
- TRANSFORMER HIGH RESISTANCE GROUND
- TRANSFORMER SOLIDLY GROUND 1
- TRANSFORMER SOLIDLY GROUND 2
- G GENERATOR
- CAPACITOR
- TIE CIRCUIT BREAKER
- POWER FACTOR CORRECTION CAPACITOR
- WIND GENERATOR
- M INDUCTION MOTOR
- S SYNCHRONOUS MOTOR
- VARIABLE FREQUENCY DRIVE
- TRANSMISSION LINE
- UTILITY SUPPLY
- SCHEDULE
- MOTOR CONTROLLER
- PV SOLAR MODULE
- HIGH VOLTAGE CIRCUIT BREAKER
- CURRENT TRANSFORMER
- VOLTAGE TRANSFORMER
- WITHDRAWAL UNIT
- M MECHANICAL INTERLOCK
- E ELECTRICAL INTERLOCK
- OVERLOAD RELAY
- BATTERY

FIRE ALARM

- FA FIRE ALARM PANEL
- ANN FIRE ALARM ANNUNCIATOR PANEL
- F MANUAL PULL STATION
- SMOKE DETECTOR - IONIZATION
- D DUCT SMOKE DETECTOR
- CO CARBON MONOXIDE DETECTOR
- FA HEAT DETECTOR - FIXED
- RR HEAT DETECTOR - RATE OF RISE
- SPEAKER - CEILING MOUNTED
- SPEAKER - WALL MOUNTED
- BUZZER
- FIRE ALARM BELL
- H HORN - CEILING MOUNTED
- H HORN - WALL MOUNTED
- S STROBE - CEILING MOUNTED
- S STROBE - WALL MOUNTED
- HS HORN / STROBE - CEILING MOUNTED
- HS HORN / STROBE - WALL MOUNTED
- BBP BATTERY BOOSTER PANEL
- EOL END OF LINE RESISTOR
- ISO ISOLATOR
- A IN (OUT) n — ADDRESSABLE MODULE INPUT OR OUTPUT x n: NUMBER OF POINTS TO BE CONTROLLED
- T TAMPER SWITCH
- F FLOW SWITCH
- P PRESSURE SWITCH
- MM MONITOR MODULE
- CM CONTROL MODULE

EM. LIGHTING AND EXIT SIGNS

- BP-n — SINGLE EMERGENCY REMOTE HEAD ("n" INDICATES WIRING TO DESIGNATED EMERGENCY BATTERY PACK)
- BP-n — DOUBLE EMERGENCY REMOTE HEAD ("n" INDICATES WIRING TO DESIGNATED EMERGENCY BATTERY PACK)
- BATT BP-n — EMERGENCY BATTERY PACK ("n" INDICATES WIRING TO DESIGNATED EMERGENCY REMOTE HEAD)
- EMERGENCY BATTERY PACK c/w HEADS
- EXIT — EMERGENCY BATTERY PACK c/w HEADS & EXIT SIGN
- EXIT 4X — EXIT SIGN - CEILING MOUNTED 4X DENOTES NEMA 4X RATED AND NSF CERTIFIED.
- EXIT EXIT / EXIT EXIT / EXIT EXIT — EXIT SIGN - CEILING MOUNTED ARROWS INDICATE DIRECTION & PHASE
- EXIT 4X — EXIT SIGN - WALL MOUNTED 4X DENOTES NEMA 4X RATED AND NSF CERTIFIED.
- EXIT EXIT / EXIT EXIT / EXIT EXIT / EXIT EXIT / EXIT — EXIT SIGN - WALL MOUNTED ARROWS INDICATE DIRECTION & PHASE

COMMUNICATION

- n TELEPHONE OUTLET ("n" INDICATES NUMBER OF PORTS)
- n DATA OUTLET ("n" INDICATES NUMBER OF PORTS)
- n TELEPHONE AND DATA OUTLET ("n" INDICATES NUMBER OF PORTS)
- TELEPHONE AND DATA OUTLET - FLOOR MOUNTED
- WAP WIRELESS ACCESS POINT
- INTERCOM
- AMP AMPLIFIER

ACCESS CONTROL AND SECURITY

- ML ELECTROMAGNET (MAG LOCK)
- ELECTRIC DOOR STRIKE
- CARD READER
- 0 9 NUMERICAL KEYPAD
- C REQUEST TO EXIT PUSH BUTTON
- DC DOOR CONTACT
- SINGLE PUSH BUTTON TO OPEN DOOR
- REX REQUEST FOR EXIT MOTION
- FIXED SECURITY CAMERA SENSOR
- PTZ PAN TILT ZOOM SECURITY CAMERA
- BV GLASS BREAK DETECTOR
- MD IR INFRARED MOTION DETECTOR
- K KEY SWITCH

MECHANICAL

- T THERMOSTAT
- REL AUXILIARY RELAY
- KW ELECTRIC BASEBOARD HEATER

LIGHTNING PROTECTION

- O AIR TERMINAL
- TWO WAY CABLE SPLICE
- THREE WAY CABLE SPLICE
- FOUR WAY CABLE SPLICE
- DOWN CONDUCTOR
- LIGHTNING PROTECTION GROUND CONDUCTOR

GROUNDING

- GROUNDING
- ISOLATOR GROUNDING
- GROUNDING ROD
- TW GROUNDING ROD C/W TEST WELL
- "T" CONNECTION CADWELD
- GROUNDING BAR
- CABLE IN THE GROUND
- FREE WINDING OF GROUNDING CABLE FOR CONNECTION TO EQUIPMENT AND STRUCTURE

POWER

- DUPLEX RECEPTACLE
- TC OCCUPANCY/TIME BASED CONTROLLED RECEPTACLE
- DUPLEX RECEPTACLE WITH BREAK-OFF LINKS
- WP DUPLEX RECEPTACLE c/w WEATHERPROOF COVER
- GFI DUPLEX RECEPTACLE c/w GROUND FAULT INTERRUPTER
- XP DUPLEX RECEPTACLE EXPLOSION PROOF
- +XX DUPLEX RECEPTACLE NON-STANDARD HEIGHTS
- DUPLEX RECEPTACLE - FLOOR MOUNTED
- TWO DUPLEX RECEPTACLES IN DOUBLE GANG BOX
- TWO DUPLEX RECEPTACLES IN DOUBLE GANG BOX - FLOOR MOUNTED
- SPECIAL RECEPTACLE
- POWER CONNECTION
- MANUAL STARTER WITH PILOT LIGHT
- COMBINED MAGNETIC STARTER (FUSE OR BREAKER) WITH DISCONNECT SWITCH
- FUSED DISCONNECT SWITCH
- NON-FUSED DISCONNECT SWITCH
- VFD VARIABLE FREQUENCY DRIVE
- JB JUNCTION BOX
- G GENERATOR
- M MOTOR
- CP CONTROL PANEL - SURFACE MOUNTED
- CP CONTROL PANEL - RECESSED
- DISTRIBUTION PANEL - SURFACE MOUNTED
- DISTRIBUTION PANEL - RECESSED
- START/STOP STATION
- DOUBLE PUSH BUTTON (STOP/START)
- CLOCK
- DOUBLE SIDE CLOCK - SUSPENDED
- E EMERGENCY PUSH BUTTON STATION

GENERAL NOTATION

TAGS

MO	MODIFY
REL	RELOCATE
RMN	TO REMAIN
REM	REMOVE
FE	FUTURE EQUIPMENT
RE	RELOCATED EQUIPMENT
N	NEW EQUIPMENT
UP	UP
DN	DOWN
ABB.	ABBREVIATION
+n"	MOUNTING HEIGHT ("n" INDICATES DIMENSION ABOVE FINISHED FLOOR)
4X	NEMA 4X RATED
A	REVISION
!	NOTE ON DRAWING

EQUIPMENT TAGS

- EQPT XX — EQUIPMENT TAG
- TP XXX — TIE-POINT
- EE-AA-II — EQUIPMENT NUMBER
- XXX-XX-XX — COMPONENT NUMBER
- X — REFERENCE NUMBER

LIGHTING AND SWITCHING

- 2' x 2' LUMINAIRE FIXTURE - SURFACE
- 2' x 2' LUMINAIRE FIXTURE - RECESSED
- 2' x 2' LUMINAIRE FIXTURE - ON EMERGENCY
- 2' x 4' LUMINAIRE FIXTURE - SURFACE
- 2' x 4' LUMINAIRE FIXTURE - RECESSED
- 2' x 4' LUMINAIRE FIXTURE - ON EMERGENCY
- 1' x 4' LUMINAIRE FIXTURE - SURFACE
- 1' x 4' LUMINAIRE FIXTURE - RECESSED
- 1' x 4' LUMINAIRE FIXTURE - ON EMERGENCY
- 1' x 4' LUMINAIRE FIXTURE - WALL MOUNTED
- DOWNLIGHT - CEILING MOUNTED
- DOWNLIGHT - RECESSED
- DOWNLIGHT - ON EMERGENCY
- LUMINAIRE - WALL MOUNTED
- LUMINAIRE - WALL MOUNTED ON EMERGENCY
- TRACK LIGHTING (REFER TO LUMINAIRE SCHEDULE FOR HEAD COUNTS AND TRACK LENGTH)
- $ SINGLE POLE SWITCH
- $3 THREE-WAY SWITCH
- $4 FOUR-WAY SWITCH
- $TC TIME-CLOCK SWITCH
- $D WIRELESS ON/OFF DIMMER WALL SWITCH
- $D DIMMER SWITCH
- $OC OCCUPANCY SENSOR SWITCH
- LOW VOLTAGE SINGLE POLE SWITCH
- 3 LOW VOLTAGE THREE-WAY SWITCH
- 4 LOW VOLTAGE FOUR-WAY SWITCH
- TC LOW VOLTAGE TIME-CLOCK SWITCH
- D LOW VOLTAGE DIMMER SWITCH
- OC LOW VOLTAGE OCCUPANCY SENSOR SWITCH
- OC PIR CEILING MOUNTED PASSIVE INFRARED OCCUPANCY SENSOR
- OC US CEILING MOUNTED ULTRASONIC OCCUPANCY SENSOR
- OC DT CEILING MOUNTED DUAL TECH OCCUPANCY SENSOR
- OC CEILING MOUNTED PDT WIRELESS OCCUPANCY SENSOR
- DL CEILING MOUNTED DAYLIGHT SENSOR

GENERAL NOTES

GENERAL NOTES

1. ALL SYMBOLS ARE NOT NECESSARILY USED IN THIS PROJECT.
2. THE VARIOUS SYMBOLS ARE GROUPED TOGETHER BY SPECIALITY TO FACILITATE THE USE. THE USE OF A SYMBOL IS NOT LIMITED TO INDICATED SPECIALITY BECAUSE THE LEGENDS FORMS A WHOLE WITH THE DRAWINGS AND SPECIFICATIONS. THE MEANING OF A SYMBOL ALWAYS REMAINS THE SAME FROM ONE SPECIALITY TO THE OTHER, UNLESS INDICATED OTHERWISE ON PLANS AND/OR SPECIFICATIONS.

Key plan

Notes:

Rev.	Date	Drawn by	Revision	Checked by
2	2023-04-17	J.K.	ISSUED FOR BUILDING PERMIT	A.S.
1	2023-02-08	S.T.	ISSUED FOR TENDER	A.S.

Seals

2023-04-17
LICENSED PROFESSIONAL ENGINEER
A. SHAHID
100556845
PROVINCE OF ONTARIO

LAPORTE Engineering
100-89 Skyway Avenue
Toronto (ON) M9W 6R4
Canada
T. 416.675.6761
WWW.LAPORTECONSULTANTS.COM

Project

AIM KINGSTON FACILITY

Drawing

ELECTRICAL SYMBOL LEGEND

Designed by	A.SHAHID	Drawn by	S.TEYMOURI	Checked by	–
Date	2023-04-17	Scale	N.T.S.	Size	ARCH-D
Project #	AIM-01	Drawing #	E-0001	Revision	2

AIM-01-924-E-0001-ElectricalLegend-R0A.2.dwg
PLOT DATE: 17-Apr-2023

1.0 GENERAL

WORK INCLUDED

1. PROVIDE ALL LABOUR, MATERIALS, EQUIPMENT, SERVICES AND SUPERVISION REQUIRED TO PROVIDE A COMPLETE ELECTRICAL SYSTEM AS SHOWN ON THE DRAWINGS AND WITHIN THESE SPECIFICATIONS.
2. WORK INCLUDES, BUT IS NOT LIMITED TO THE FOLLOWING GENERAL ITEMS:
A) SUPPLY AND INSTALLATION OF ELECTRICAL EQUIPMENT INCLUDING DISTRIBUTION TRANSFORMERS, DISTRIBUTION PANELS, GENERAL AND EMERGENCY LIGHTING EQUIPMENT, SMALL POWER EQUIPMENT, AND HVAC EQUIPMENT WIRING.
B) SUPPLY AND INSTALLATION OF ALL NEW FEEDER BREAKERS,CABLE, AND CONDUIT SYSTEMS.

WORK NOT INCLUDED

1. THE FOLLOWING WORK HAS OR WILL BE COMPLETED BY OTHERS:
A) SUPPLY AND INSTALL OF OWNER'S EQUIPMENT.
B) SUPPLY AND INSTALL OF MECHANICAL EQUIPMENT.

CONTRACT DRAWINGS AND SPECIFICATIONS

1. THE ELECTRICAL DRAWINGS DO NOT SHOW STRUCTURAL DETAILS AND ARE INTENDED TO SHOW THE GENERAL LAYOUT OF THE FACILITY. CO-ORDINATE WITH OTHER TRADES AND THEIR DRAWINGS TO ENSURE A PROPER INSTALLATION.
2. ENSURE CODE CLEARANCES.

SHOP DRAWINGS

1. PROVIDE ONE (1) DIGITAL (PDF) COPY OF SHOP DRAWINGS FOR ALL MAJOR EQUIPMENT.
2. SHOP DRAWINGS SHALL INCLUDE CATALOGUE INFORMATION, MANUFACTURER'S BULLETINS, WIRING DIAGRAMS, DIMENSIONAL DATA AND OPERATING DESCRIPTIONS FOR THE SPECIFIED EQUIPMENT.
3. THIS CONTRACTOR SHALL CHECK THESE SHOP DRAWINGS BEFORE SUBMISSION TO THE ENGINEER. THE ENGINEER SHALL ENSURE THE SHOP DRAWINGS ARE COMPLETE AND MEET ALL THE REQUIREMENTS OF THESE SPECIFICATIONS AND THE DRAWINGS.
4. THE ENGINEER SHALL REVIEW THESE SHOP DRAWINGS. ACCEPTANCE OF THESE SHOP DRAWINGS DOES NOT RELIEVE THE CONTRACTOR FROM THEIR REQUIREMENT TO PROVIDE THE SPECIFIED EQUIPMENT IN ACCORDANCE TO THESE SPECIFICATIONS AND THE DRAWINGS.

AS-BUILT DRAWINGS

1. MAINTAIN ONE SET OF DRAWINGS ON THE JOBSITE FOR THE RECORDING OF ANY FIELD CHANGES SUCH AS CONDUIT ROUTING, CIRCUIT CHANGES ETC. AS-BUILT MARKUPS SHALL BE COMPLETED DAILY. THESE AS-BUILT DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER UPON COMPLETION OF THE WORK.
2. AS-BUILT MARKUPS SHALL BE OF THE SAME STANDARD AS THE CONTRACT DRAWINGS. MARKUPS SHALL BE DETAILED ENOUGH TO ENSURE THE OWNER HAS AN ACCURATE DOCUMENTATION OF THE INSTALLATION.
3. HAVE THESE MARKUPS AVAILABLE TO THE ENGINEER FOR INSPECTION WHENEVER THEY VISIT THE JOBSITE.
4. AT THE COMPLETION OF THE WORK, THE CONTRACTOR SHALL SUBMIT THESE MARKUPS TO THE ENGINEER FOR APPROVAL.
5. MAKE ANY FURTHER CHANGES AS DIRECTED BY THE ENGINEER.
6. CO-ORDINATE THESE MARKUPS WITH THE ENGINEER.

MAINTENANCE AND OPERATING MANUALS, SPARE PARTS LIST

1. COLLECT AND MAINTAIN 3 COPIES OF EQUIPMENT SHOP DRAWINGS AND OTHER RELATED INFORMATION AND COMPILE IT INTO A BOUND MANUAL.
2. INCLUDE THE SHOP DRAWINGS, EQUIPMENT INFORMATION, SPARE PARTS LISTS AND A LIST OF SALES OUTLETS WHERE THE OWNER COULD PURCHASE SPARE PARTS FOR MAINTENANCE.
3. CO-ORDINATE THE MANUAL WITH THE ENGINEER AND RECEIVE THEIR APPROVAL BEFORE SUBMITTING TO THE OWNER.

GUARANTEE

1. THIS CONTRACTOR SHALL GUARANTEE THEIR WORK, EQUIPMENT AND MATERIALS SUPPLIED FOR A PERIOD OF ONE FULL YEAR AFTER FINAL COMPLETION. THEY SHALL REPAIR, REPLACE OR OTHERWISE MAKE GOOD ANY PART OR ALL OF THE ELECTRICAL INSTALLATION SHOULD ANY FAILURE, MALFUNCTION OR DEFICIENCIES BECOME KNOWN DURING THE GUARANTEED PERIOD. THIS WORK SHALL BE COMPLETED AT NO COST TO THE OWNER.
2. CO-ORDINATE EQUIPMENT WARRANTEES AND INCLUDE THESE INTO THE MAINTENANCE AND OPERATING MANUALS.

SITE INSPECTION

1. THE CONTRACTOR SHALL EXAMINE THE CONSTRUCTION SITE PRIOR TO SUBMITTING THEIR TENDER AND BECOME FAMILIAR WITH ALL THE WORK. BASE TENDER ON THE JOBSITE CONDITIONS.
2. ADVISE THE ENGINEER OF ANY POTENTIAL PROBLEMS OBSERVED DURING THEIR JOBSITE VISIT.

PERMITS, LICENSES AND FEES

1. SUBMIT THE DRAWINGS AND THESE SPECIFICATIONS TO ALL INSPECTION AUTHORITIES FOR THEIR REVIEW AND APPROVAL.
2. APPLY AND PAY FOR ALL ASSOCIATED WORK AND PERMITS, LICENSES AND FEES.
3. SUBMIT THE FINAL INSPECTION CERTIFICATE TO THE ENGINEER AND THE OWNER UPON COMPLETION OF THE WORK.

CODES

1. COMPLETE THE WORK IN ACCORDANCE WITH THE LATEST ISSUE OF THE CANADIAN ELECTRICAL CODE ADOPTED BY THE AUTHORITY HAVING JURISDICTION AND ANY OTHER LOCAL OR REGIONAL INSPECTION AUTHORITY HAVING JURISDICTION.
2. COMPLETE THE WORK IN ACCORDANCE WITH THE WORKPLACE SAFETY AND INSURANCE BOARD ONTARIO REQUIREMENTS.

SAFETY

1. THIS CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFETY OF ALL PERSONNEL WORKING AROUND THE ELECTRICAL EQUIPMENT.
2. ESTABLISH "LOCK-OUT" PROCEDURES AND ENFORCE THESE PROCEDURES.
3. PROVIDE ALL REQUIRED TRAINING TO MAINTAIN A SAFE WORK PLACE.
4. THE WORKPLACE SHALL BE KEPT NEAT AND TIDY DURING CONSTRUCTION. CLEAN UP TOOLS AND WORK RELATED DEBRIS DAILY.

MAKING GOOD

1. DURING THE CONSTRUCTION, MAKE GOOD ANY SURFACE OR PENETRATIONS CREATED AS A RESULT OF THE WORK. PROVIDE ALL EXCAVATION, BACKFILLING, CUTTING, PATCHING, SEALING OF HOLES ETC..
2. CO-ORDINATE THIS WORK WITH THE GENERAL CONTRACTOR.

EQUIPMENT IDENTIFICATION

1. ALL FIELD COMPONENTS AND EQUIPMENT SHALL BE PROVIDED WITH CLEAR AND EASY TO READ LABELING. THIS LABELING SHALL BE LAMICOID LABELS USING MINIMUM 3MM WHITE LETTERS ON A BLACK BACKGROUND.
2. DYMO TAPE TYPE LABELING WILL NOT BE ACCEPTED.
3. SUBMIT A LIST OF LABELING TO THE ENGINEER FOR APPROVAL.

CONDUIT AND CABLE IDENTIFICATION

1. ALL CONDUITS AND CABLES SHALL BE CLEARLY IDENTIFIED WITH A NUMBERING SYSTEM AS SHOWN ON THE DRAWINGS OR A NUMBERING SYSTEM AS APPROVED BY THE ENGINEER.
2. LABELING SHALL BE INSTALLED AT EACH CONNECTION POINT AND MID-POINT OF LONG RUNS. CO-ORDINATE WITH THE ENGINEER.
3. REVIEW LABELING WITH THE ENGINEER BEFORE INSTALLATION.

TESTING AND TEST REPORTS

1. ALL EQUIPMENT AND WIRING SHALL BE TESTED AND CALIBRATED TO ENSURE ITS PROPER OPERATION.
2. THIS CONTRACTOR SHALL ENSURE ALL EQUIPMENT AND WIRING OPERATES IN ACCORDANCE WITH THE INTENT OF THE DRAWINGS AND THESE SPECIFICATIONS.
3. THIS CONTRACTOR SHALL TEST AND CALIBRATE EQUIPMENT IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
4. THIS CONTRACTOR SHALL PROVIDE ALL REQUIRED TEST EQUIPMENT TO COMPLETE THIS TESTING.
5. CO-ORDINATE THE TESTING WITH THE ENGINEER BEFORE THIS TESTING AND PROVIDE AT LEAST 48 HOURS NOTICE SO THE ENGINEER CAN BE PRESENT.
6. IF CORRECTIONS NEED TO BE COMPLETED, THIS CONTRACTOR SHALL PROVIDE ALL CORRECTIONS AT NO EXTRA COST.
7. PROVIDE A COMPLETE TESTING REPORT FOR ALL TESTING.

START-UP AND COMMISSIONING

1. THIS CONTRACTOR SHALL BE RESPONSIBLE FOR THE CO-ORDINATION OF THE START-UP OF ALL EQUIPMENT AND SYSTEMS.
2. CO-ORDINATE THE START-UP WITH THE ENGINEER AND FOLLOW THEIR INSTRUCTIONS WHERE REQUIRED.
3. THIS CONTRACTOR SHALL BE RESPONSIBLE FOR COMMISSIONING AND PROVIDING OPERATING INSTRUCTIONS/DEMONSTRATION TO THE ENGINEER AND THE OWNER.
4. CO-ORDINATE THIS WITH BOTH THE ENGINEER AND THE OWNER.

PROTECTION OF WORK

1. THIS CONTRACTOR SHALL BE RESPONSIBLE FOR ANY BUILDING OR EQUIPMENT DAMAGE DURING THE CONSTRUCTION. THIS INCLUDES ELECTRICAL EQUIPMENT SUPPLIED BY THE OWNER AND INSTALLED BY THIS CONTRACTOR.
2. THIS CONTRACTOR IS RESPONSIBLE FOR INSPECTING ALL EQUIPMENT INCLUDING EXISTING OWNER'S EQUIPMENT TO IDENTIFY ANY PRE-EXISTING DAMAGE PRIOR TO TAKING OVER THE EQUIPMENT. BRING TO THE ATTENTION OF THE OWNER AND OBTAIN A WRITTEN RECORD OF ALL PRE-EXISTING DAMAGE ON EQUIPMENT.
3. REPAIR OR REPLACE ANY DAMAGE TO CABLING, WIRING OR CONDUIT .
4. REPAINT ANY NEW EQUIPMENT SURFACE TO ORIGINAL EQUIPMENT FINISH.
5. REVIEW THE REPAIRS OR REPLACEMENT WITH THE ENGINEER FOR NEW EQUIPMENT AND ACQUIRE THEIR APPROVAL.
6. REVIEW THE REPAIRS OR REPLACEMENT WITH THE OWNER FOR EXISTING EQUIPMENT AND ACQUIRE THEIR APPROVAL.

CO-ORDINATION

1. THIS CONTRACTOR SHALL CO-ORDINATE WITH THE OWNER AND THE ENGINEER FOR ALL SERVICES UNDER THEIR AUTHORITY.
2. REVIEW INSTALLATION WITH THE OWNER AND THE ENGINEER BEFORE ANY WORK IS STARTED.
3. CO-ORDINATE WITH ALL OTHER TRADES TO ENSURE A PROPER INSTALLATION.

WORKMANSHIP

1. WORK SHALL BE COMPLETED IN ACCORDANCE WITH WELL-ESTABLISHED PRACTICE AND BY TRADESMEN ACCREDITED AND SKILLED IN THE PERFORMANCE OF THE ELECTRICAL WORK OUTLINED IN THESE DOCUMENTS.
2. THE ENGINEER SHALL DETERMINE ACCEPTABLE WORKMANSHIP. THE ENGINEER MAY STILL REJECT WORK APPROVED BY ANY ELECTRICAL INSPECTIONS.

INSPECTION AND REVIEW OF THE WORK

1. DURING CONSTRUCTION, THE ENGINEER AND OWNER WILL BE COMPLETING FIELD REVIEW OF THE ELECTRICAL WORK. THE ELECTRICAL AND BUILDING INSPECTORS WILL BE PERFORMING INSPECTIONS ON THE ELECTRICAL WORK.
2. PROVIDE AT LEAST ONE (1) WEEKS' NOTICE FOR ROUGH-IN INSPECTIONS.
3. PROVIDE AT LEAST ONE (1) WEEKS' NOTICE FOR FINAL INSPECTION AND FIELD REVIEW.

FIRE-STOPPING

1. ALL WORK PERFORMED BY THIS CONTRACTOR SHALL BE PERFORMED IN A WAY WHICH IS IN ACCORDANCE WITH PROVINCIAL, FIRE AND LOCAL REGULATIONS. CONDUITS AND DUCTS PASSING THROUGH FIRE-RATED WALLS SHALL BE FIRE STOPPED AND SMOKE SEALED IN ACCORDANCE WITH:
A) CAN 4-S115-M85 "STANDARD METHOD OF FIRE TESTS OF FIRESTOP SYSTEMS."
B) CONFORM TO CAN 4-S101.
C) COMPLY WITH MANUFACTURE'S RECOMMENDATIONS FOR HANDLING, STORAGE AND PROTECTION DURING INSTALLATION.
2. FIRE SEALANT: INTERSECTIONS OF FIRE RESISTANCE RATED MASONRY AND GYPSUM BOARD PARTITIONS: COMPLY AND SWAY JOINTS IN FIRE-RESISTANCE RATED MASONRY AND GYPSUM BOARD PARTITIONS AND WALLS: PENETRATIONS THROUGH FIRE-RESISTANCE RATED MASONRY, CONCRETE AND GYPSUM BOARD PARTITIONS AND WALLS.
A) HILTI (CANADA LTD.) FIRESTOP SYSTEM.
B) 3M (CANADA LTD.) FIRESTOP SYSTEM.
C) OR APPROVED EQUIVALENT.
3. INSTALLATION:
A) INSTALL FIRE STOPPING AND SMOKE SEAL MATERIAL AND COMPONENTS IN ACCORDANCE WITH ULC CERTIFICATION AND MANUFACTURER'S INSTRUCTIONS.
B) SEAL HOLES OR VOIDS MADE BY THROUGH PENETRATIONS, POKE-THROUGH TERMINATION DEVICES, AND UNPENETRATED OPENINGS OR JOINTS TO ENSURE CONTINUITY AND INTEGRITY OF FIRE SEPARATION ARE MAINTAINED.

PROJECT CLOSE OUT

THE FOLLOWING DOCUMENTS TO BE SUBMITTED AT LEAST 1 WEEK PRIOR TO REQUESTING FOR OCCUPANCY SCHEDULE C-B.

1. COPY OF ALL ELECTRICAL INSPECTION REPORTS.
2. WRITTEN CONFIRMATION THAT ALL LIFE SAFETY ITEMS ON LAST FIELD REPORT HAVE BEEN ADDRESSED.

THE FOLLOWING DOCUMENTS TO BE SUBMITTED AT LEAST 1 WEEK PRIOR TO REQUESTING FOR SUBSTANTIAL COMPLETION.

1. CONTRACTOR AS-BUILTS.
2. O & M MANUALS
3. DEFICIENCY LIST WITH VALUE OF ITEMS.

2.0 BASIC MATERIALS

WIRING METHODS

1. WIRING SHALL BE SURFACE IN EITHER CONDUIT OR CABLE AS OUTLINED ON THE DRAWINGS.
2. THE ROUTING OF SURFACE WIRING SHALL BE CO-ORDINATED ON SITE. CO-ORDINATE ROUTING WITH THE ENGINEER.
3. CABLING SHALL BE WITHIN CABLE TRAY AS OUTLINED ON THE DRAWINGS. OR AS NOTED ON THE DRAWINGS.
4. PROVIDE A SEPARATE GROUND CONDUCTOR IN ALL NON-METALLIC CONDUITS.

CONDUIT

1. UTILIZE EMT CONDUITS 10FT ABOVE FINISHED FLOOR (AFF). UTILIZE RIGID STEEL CONDUITS 10FT AFF AND BELOW.
2. USE APPROVED PVC CONDUIT OR DUCT (DB2) WHERE THE INSTALLATION IS DIRECT BURIED OR ENCASED IN CONCRETE.
3. EMT CONDUIT MAY ONLY BE USED IN INTERIOR AREAS WHERE MECHANICAL DAMAGE IS NOT EXPECTED.
4. PROVIDE FLEXIBLE WATERTIGHT (PVC JACKETED) ARMOURED TECK CABLE SHALL BE USED FOR ALL EXTERIOR WIRING. AND FOR FINAL CONNECTIONS TO ALL MOTOR OR MOTOR TYPE LOADS. CONNECTORS SHALL BE T & B TYPE.
5. EMT CONNECTORS SHALL BE BRUSHED STEEL.
6. RIGID GALVANIZED STEEL CONDUIT CONNECTORS SHALL BE APPROVED GALVANIZED STEEL.

WIRE

1. PROVIDE STRANDED COPPER CONDUCTOR UNLESS OTHERWISE NOTED.
2. PROVIDE SOLID COPPER CONDUCTOR FOR ALL LIGHTING AND RECEPTACLE CIRCUITS.
3. PROVIDE EXTRA FLEXIBLE SWITCHBOARD COPPER WIRE #16 AWG FOR ALL CONTROL PANEL WIRING.
4. PROVIDE MINIMUM #12 AWG FOR ALL LIGHTING, HEATING AND RECEPTACLE CIRCUITS.
5. PROVIDE RW90 X-LINK POLYETHYLENE INSULATED COPPER WIRE UNLESS OTHERWISE NOTED.
6. PROVIDE 300 VOLT INSULATED WIRE FOR ALL 120/208 VOLT CIRCUITS.
7. PROVIDE 600 VOLT #10 AWG INSULATED WIRE FOR ALL 347/600 VOLT CIRCUITS.
8. PROVIDE 1000 VOLT INSULATED WIRE FOR WIRE SIZED #6 AWG AND LARGER.

TECK CABLE

1. TECK CABLE SHALL BE ALUMINUM ARMOUR WITH COPPER CONDUCTORS WITH X-LINK INSULATION ALONG WITH AN OVERALL PVC WATERTIGHT JACKET. PROVIDE 600 VOLT INSULATION RATED FOR #10 AWG WIRE AND SMALLER AND 1000 VOLT INSULATION RATING FOR #6 AWG AND LARGER.
2. PROVIDE APPROPRIATELY SIZED PVC DUCT FOR TECK CABLING WHEN ROUTING THROUGH BUILDING WALLS. SEAL WITH DUCT SEAL.

3.0 WIRING DEVICES

PULL OR JUNCTION BOXES

1. PROVIDE CSA APPROVED, PRESSED STEEL, HOT DIPPED GALVANIZED C/W GROUND LUGS, SCREW-ON COVERS AND SIZED IN ACCORDANCE WITH THE CANADIAN ELECTRICAL CODE.
2. PROVIDE CAST FS TYPE BOXES FOR RIGID GALVANIZED STEEL CONDUIT INSTALLATIONS. INCLUDE GASKETTED COVERPLATES.
3. ALL EXTERIOR DEVICES SHALL BE TOTALLY WEATHER PROOF AND SHALL HAVE STAINLESS STEEL FASTENINGS.

OUTLETS AND SWITCH BOXES

1. SIZE BOXES TO ACCOMMODATE THE NUMBER OF CONDUCTORS AND CONNECTIONS.
2. CO-ORDINATE LOCATION AND MOUNTING HEIGHT OF ALL OUTLETS.
3. ALL EXTERIOR DEVICES SHALL BE TOTALLY WEATHER PROOF AND SHALL HAVE STAINLESS STEEL FASTENINGS.

RECEPTACLES

1. DUPLEX RECEPTACLES SHALL BE SPECIFICATION GRADE AND WITH THE CSA CONFIGURATION AS SHOWN ON THE DRAWINGS. COLOUR TO BE WHITE.
2. IN WASHDOWN PROCESS AREAS, RECEPTACLES SHALL HAVE A GROUND FAULT INTERRUPTER (GFI) AND WEATHERPROOF (WP) WHILE-IN-USE COVER.
3. ACCEPTABLE MANUFACTURER SHALL BE LEVITON, HUBBELL OR ACCEPTED EQUAL.

LIGHT SWITCHES

1. LIGHT SWITCHES AS SHOWN ON THE DRAWINGS SHALL BE SPECIFICATION GRADE, 120 VOLT 20AMP RATED. COLOUR TO BE WHITE.
2. ACCEPTABLE MANUFACTURER SHALL BE LEVITON, HUBBELL OR ACCEPTED EQUAL.

WIRING CONNECTORS

1. USE INSULATED TWIST ON TYPE FOR #10 AWG AND SMALLER. T & B TYPE OR ACCEPTED EQUAL.
2. USE BOLTED TYPE FOR # 8 AWG AND LARGER. T & B TYPE OR ACCEPTED EQUAL.

COVERPLATES

1. ALL EXTERIOR DEVICES SHALL BE TOTALLY WEATHER PROOF AND SHALL HAVE STAINLESS STEEL FASTENINGS.
2. ACCEPTED MANUFACTURER SHALL BE LEVITON, HUBBELL OR ACCEPTED EQUAL.

4.0 SAFETY DISCONNECT SWITCH

GENERAL

1. PROVIDE INDUSTRIAL TYPE DISCONNECT SWITCHES AS SHOWN ON THE DRAWINGS.
2. PROVIDE INDUSTRIAL ENCLOSURES.
3. ALL EXTERIOR DEVICES SHALL BE TOTALLY WEATHER PROOF AND SHALL HAVE STAINLESS STEEL FASTENINGS.
4. ACCEPTABLE MANUFACTURERS SHALL BE CUTLER-HAMMER, ALLEN BRADLEY, OR SQUARE D.

MANUAL STARTERS

1. PROVIDE MANUAL MOTOR STARTERS WITH 2 POLES AND SIZED TO ACCOMMODATE DUTY. PROVIDE INDUSTRIAL ENCLOSURES.
2. ALL EXTERIOR DEVICES SHALL BE TOTALLY WEATHER PROOF AND SHALL HAVE STAINLESS STEEL FASTENINGS.

MAGNETIC MOTOR STARTERS

1. MAGNETIC MOTOR STARTERS SHALL BE A COMBINATION CIRCUIT BREAKER TYPE, FULL VOLTAGE, NON-REVERSING, SINGLE OR TWO SPEED AS REQUIRED.
2. ALL EXTERIOR DEVICES SHALL BE TOTALLY WEATHER PROOF AND SHALL HAVE STAINLESS STEEL FASTENINGS.

MOUNTING

1. MOUNTING SHALL BE SURFACE IN AN INDUSTRIAL ENCLOSURE.
2. LOCATE AS CLOSE AS POSSIBLE TO THE EQUIPMENT AND PROVIDE FLEXIBLE WIRING AS OUTLINED ELSEWHERE IN THESE SPECIFICATIONS.
3. CO-ORDINATE LOCATIONS AND MOUNTING ARRANGEMENTS WITH THE ENGINEER.

5.0 POWER FOR MISCELLANEOUS EQUIPMENT

GENERAL

1. THIS CONTRACTOR SHALL PROVIDE THE REQUIRED POWER WIRING AND CONNECTIONS TO EQUIPMENT AS SHOWN ON THE DRAWINGS.
2. PROVIDE MOTOR STARTERS OR SAFETY DISCONNECT SWITCHES AS REQUIRED.
3. CO-ORDINATE WITH THE DRAWINGS AND SPECIFICATIONS OF OTHER DIVISIONS TO ENSURE ALL IS COVERED.

6.0 GROUNDING

GENERAL

1. GROUND ALL EQUIPMENT IN ACCORDANCE WITH THE CANADIAN ELECTRICAL CODE.
2. PROVIDE TWO GROUND RODS (OR AN EQUIVALENT GROUNDING PLATE) AND A COPPER GROUND BUS LOCATED AT THE NEW 480V DISTRIBUTION. CONNECT WITH A #6 GROUND WIRE FROM EACH OF THE GROUND RODS TO THE GROUND BUS.
3. GROUND OR BOND ALL METALLIC BUILDING ACCESSORIES SUCH AS HANDRAILS, GUARD RAILS, METAL OR STEEL BUILDING STRUCTURES, CABLE TRAY, WATER PIPING ETC. IN ACCORDANCE WITH THE CANADIAN ELECTRICAL CODE.

WIRING AND CONNECTIONS

1. MINIMUM WIRE SIZE SHALL BE #6 AWG, BARE STRANDED COPPER CABLE. PROTECT AGAINST MECHANICAL DAMAGE WITH EITHER RIGID CONDUIT OR PVC AS APPLICABLE.
2. PROVIDE "BURNDY" TYPE COMPRESSION CONNECTORS FOR WIRE TO WIRE AND WIRE TO GROUND ROD.
3. PROVIDE COPPERWELD GROUND RODS, 19MM DIAMETER X 3M LONG.

7.0 LIGHTING

GENERAL

1. PROVIDE THE LIGHTING EQUIPMENT AS SHOWN ON THE DRAWINGS. INCLUDE ALL HOUSINGS, LAMPS, DRIVERS, LENSES, MOUNTING HARDWARE AND WIRING CONNECTIONS.
2. THE LUMINAIRE SCHEDULE AND ACCEPTABLE MANUFACTURERS ARE SHOWN ON DRAWINGS AND IN THIS SPECIFICATION. ALTERNATE MANUFACTURERS NEED TO BE ACCEPTED BY THE ENGINEER.

LIGHTING CONTROL

1. LIGHTING CONTROLS REMAIN 'AS IS' FOR MOST PRODUCTION AND STORAGE AREAS WHERE EXISTING LIGHTING IS TO REMAIN FUNCTIONING. MANUAL CONTROLS TO BE ADAPTED FOR AFFECTED PRODUCTION AREA FOR SAFETY REASON.
2. LIGHTING CONTROL COMPONENTS & DEVICES SHALL BE OF APPROVED BRAND. ACUITY, HUBBEL & LUTRON ARE ACCEPTABLE MANUFACTURERS. OTHER SPECIFICATION GRADE BRANDS ARE ACCEPTABLE UPON ENGINEER'S APPROVAL.
3. UPON INSTALLATION OF LIGHTING CONTROLS, ELECTRICAL CONTRACTOR TO PROVIDE A COMMISSIONING REPORT FROM A THIRD PARTY TO THE ENGINEER, CONFIRMING ALL LIGHTING. CONTROL HAVE BEEN CALIBRATED, ADJUSTED & PROGRAMMED AS STATED BY THE APPLICABLE ENERGY CODE FOR THIS PROJECT.

EMERGENCY LIGHTING:

1. 12 VOLT EMERGENCY BATTERY OPERATED LIGHTING PRODUCT WITH TWO 4 WATT MR-16 LED HEADS UNLESS OTHERWISE NOTED. REMOTE TWIN HEADS SHALL BE OF THE SAME SERIES. PROCESS AREAS SHALL BE NEMA 4X RATED.
2. ACCEPTED MANUFACTURER: READY-LITE LDX SERIES FOR NON-WASHDOWN AREAS AND TUF-NM FOR WASHDOWN AREAS.
3. THE EMERGENCY BATTERY PACK TO BE WIRED TO THE UNCONTROLLED CIRCUIT FOR THE LOCAL AREA LIGHTING.

EXIT SIGNS

1. LED EXIT SIGN FOR EITHER WALL OR CEILING MOUNTING ARRANGEMENTS. REFER TO THE DRAWINGS.
ACCEPTED MANUFACTURE: READY-LITE 'RA' SERIES 120 VOLT PICTOGRAM EXIT SIGN FOR NON-WASHDOWN AREAS AND 'RN' SERIES FOR WASHDOWN AREAS. EXIT SIGNS TO BE WIRED TO A 120 VOLT DEDICATED CIRCUIT WHICH IS FOR EXIT SIGNS ONLY.

COMBINATION EXIT LIGHT

1. COMBINATION EXIT SIGN FOR EITHER WALL OR CEILING MOUNTED ARRANGEMENT REFER TO THE DRAWING.
ACCEPTABLE MANUFACTURE: READY-LITE 'RAC' SERIES 120 VOLT PICTOGRAPHIC EXIT SIGN WITH TWO C/W 2-12 VOLT LED HEADS AS INDICATED IN SCHEDULE FOR NON-WASHDOWN AREAS AND 'RNC' SERIES FOR WASHDOWN AREAS, UNLESS OTHERWISE STATED.

8.0 DATA

GENERAL

1. PROVIDE THE CABLES, RACEWAYS AND DEVICES REQUIRED TO PROVIDE A COMPLETE SYSTEM AS SHOWN ON THE DRAWINGS. CO-ORDINATE WITH THE ENGINEER AND THE OWNER.

9.0 TELEPHONE

GENERAL

1. PROVIDE AN EMPTY CONDUIT SYSTEM AS SHOWN ON THE DRAWINGS. CO-ORDINATE WITH THE ENGINEER AND THE OWNER.

10.0 SECURITY

GENERAL

1. PROVIDE THE CABLES, RACEWAYS AND DEVICES REQUIRED TO PROVIDE A COMPLETE SYSTEM AS SHOWN ON THE DRAWINGS. CO-ORDINATE WITH THE ENGINEER AND THE OWNER.

11.0 MECHANICAL/HVAC

GENERAL

1. ALL MECHANICAL/HVAC EQUIPMENT SUPPLIED AND INSTALLED BY THE MECHANICAL CONTRACTOR.
2. THIS CONTRACTOR SHALL PROVIDE ALL WIRING AND CONNECTIONS TO ALL MECHANICAL SUPPLIED EQUIPMENT.
3. THIS CONTRACTOR SHALL PROVIDE ALL MOTOR STARTERS FOR ALL MECHANICAL EQUIPMENT. REFER TO THE DETAILS ON THE MECHANICAL DIVISION DRAWINGS AND THE "MOTOR STARTER" SECTION OF THIS SPECIFICATION.
4. PROVIDE SAFETY DISCONNECT SWITCHES AT ALL MOTOR LOCATIONS AS REQUIRED BY THE CANADIAN ELECTRICAL CODE. REFER TO SAFETY DISCONNECT SWITCHES SECTION WITHIN THESE SPECIFICATIONS.
5. CO-ORDINATE FULLY WITH THE MECHANICAL ENGINEER AND THE MECHANICAL CONTRACTOR AND PROVIDE ALL REQUIRED COMPONENTS.

Key plan

Notes:

Rev.	Date	Drawn by	Revision	Checked by
2	2023-04-17	J.K.	ISSUED FOR BUILDING PERMIT	A.S.
1	2023-02-08	S.T.	ISSUED FOR TENDER	A.S.

Seals

2023-04-17
LICENSED PROFESSIONAL ENGINEER
A. SHAHID
100556845
PROVINCE OF ONTARIO

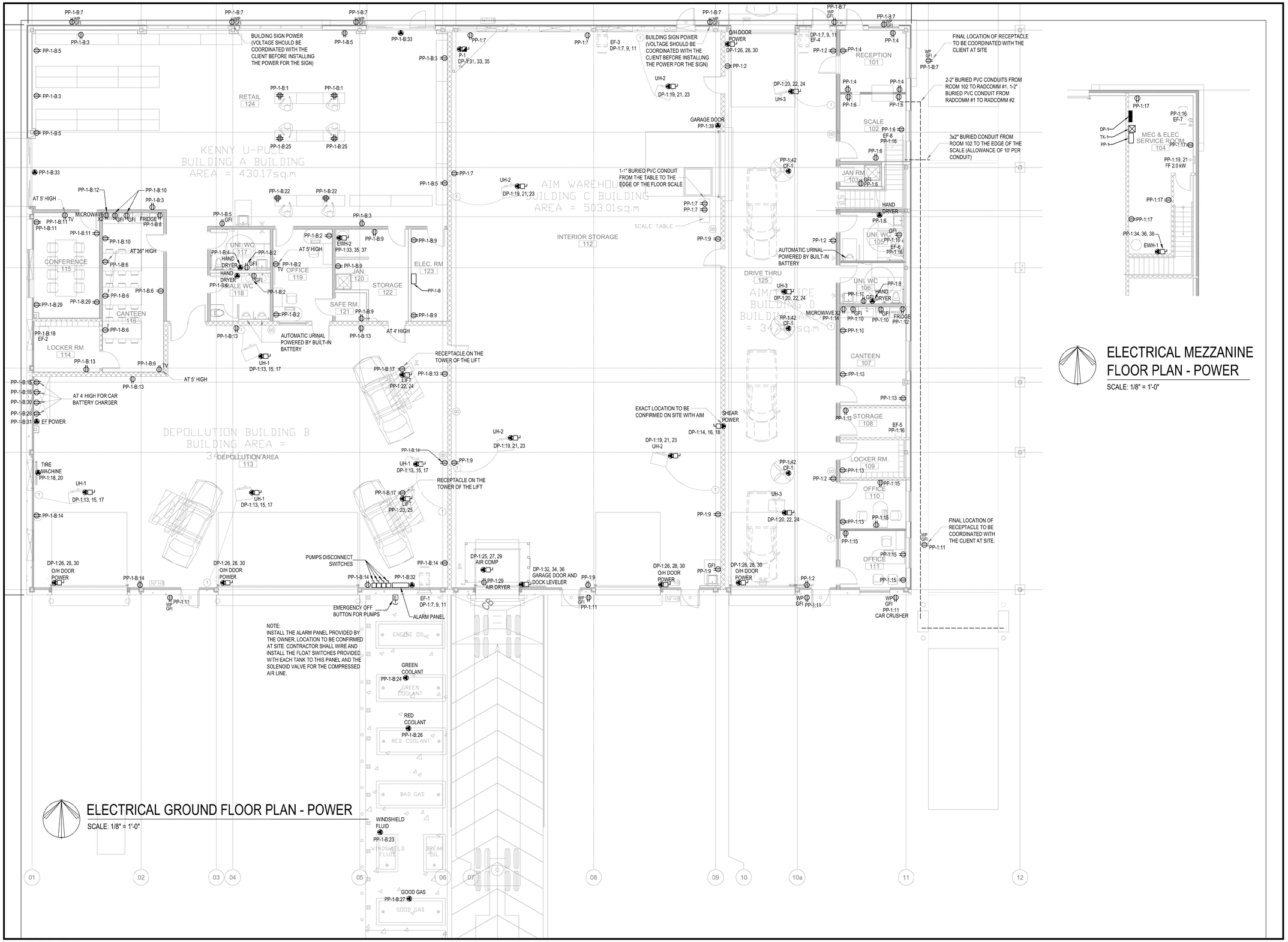
LAPORTE Engineering
100-89 Skyway Avenue
Toronto (ON) M9W 6R4
Canada
T. 416.675.6761
WWW.LAPORTECONSULTANTS.COM

Project
AIM KINGSTON FACILITY

Drawing
ELECTRICAL SPECIFICATIONS

Designed by	A.SHAHID	Drawn by		Checked by	
Date	2023-04-17	Scale	N.T.S.	Size	ARCH-D
Project #	AIM-01	Drawing #	E-9000	Revision	2

AIM-01-924-E-9000-ElectricalSpecs-R0A.dwg
PLOT DATE: 17-Apr-2023



ELECTRICAL GROUND FLOOR PLAN - POWER

SCALE: 1/8" = 1'-0"

ELECTRICAL MEZZANINE FLOOR PLAN - POWER

SCALE: 1/8" = 1'-0"

Key plan

Notes:

Rev.	Date	Drawn by	Revision	Checked by
2	2023-04-17	J.K.	ISSUED FOR BUILDING PERMIT	A.S.
1	2023-02-08	S.T.	ISSUED FOR TENDER	A.S.

Seals

2023-04-17

LICENSED PROFESSIONAL ENGINEER
A. SHAHID
100556845
PROVINCE OF ONTARIO

LAPORTE Engineering
100-89 Skyway Avenue
Toronto (ON) M9W 6R4
Canada
T. 416.675.6761
WWW.LAPORTECONSULTANTS.COM

Project

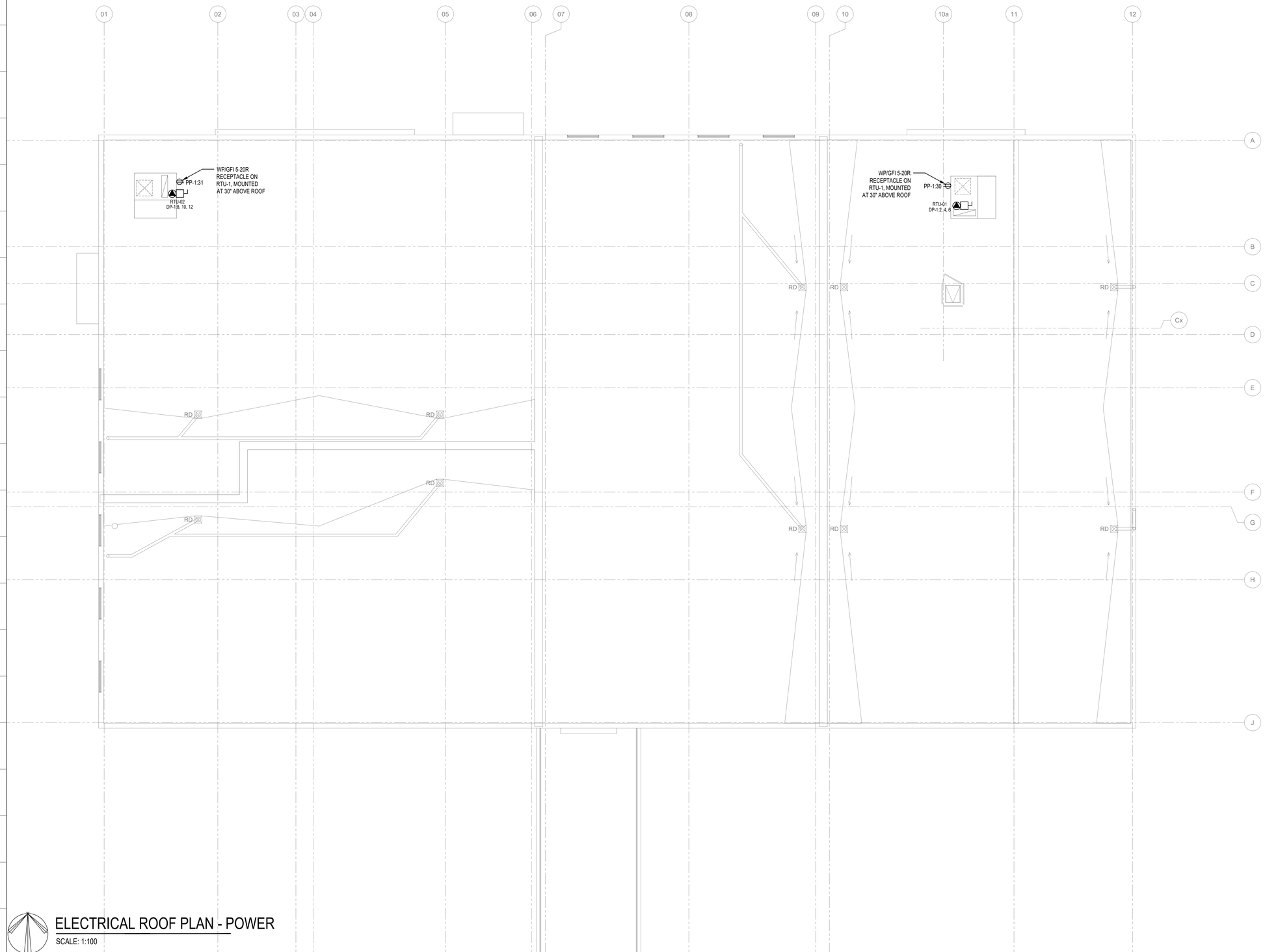
AIM KINGSTON FACILITY

Drawing

ELECTRICAL
POWER LAYOUT

Designed by	A.SHAHID	Drawn by	H.JAIN	Checked by	
Date	2023-04-17	Scale	AS NOTED	Size	ARCH-D
Project #	AIM-01	Drawing #	EB-4000	Revision	2

AIM-01-924-EB-4000-Power-R0A.5.dwg
PLOT DATE: 17-Apr-2023



ELECTRICAL ROOF PLAN - POWER

SCALE: 1:100

NOT FOR CONSTRUCTION

AIM-01-923-EB-4100-PowerLayout-Roof-R0A.dwg
PLOT DATE: 17-Apr-2023

Key plan

Notes:

Rev.	Date	Drawn by	Revision	Checked by
3	2023-04-17	J.K.	ISSUED FOR BUILDING PERMIT	A.S.
2	2023-03-28	S.T.	ISSUED FOR TENEDER ADDENDUM #4	A.S.
1	2023-02-08	S.T.	ISSUED FOR TENDER	A.S.

Seals

2023-04-17
LICENSED PROFESSIONAL ENGINEER
A. SHAHID
100556845
PROVINCE OF ONTARIO

LAPORTE Engineering
100-89 Skyway Avenue
Toronto (ON) M9W 6R4
Canada
T. 416.675.6761
WWW.LAPORTECONSULTANTS.COM

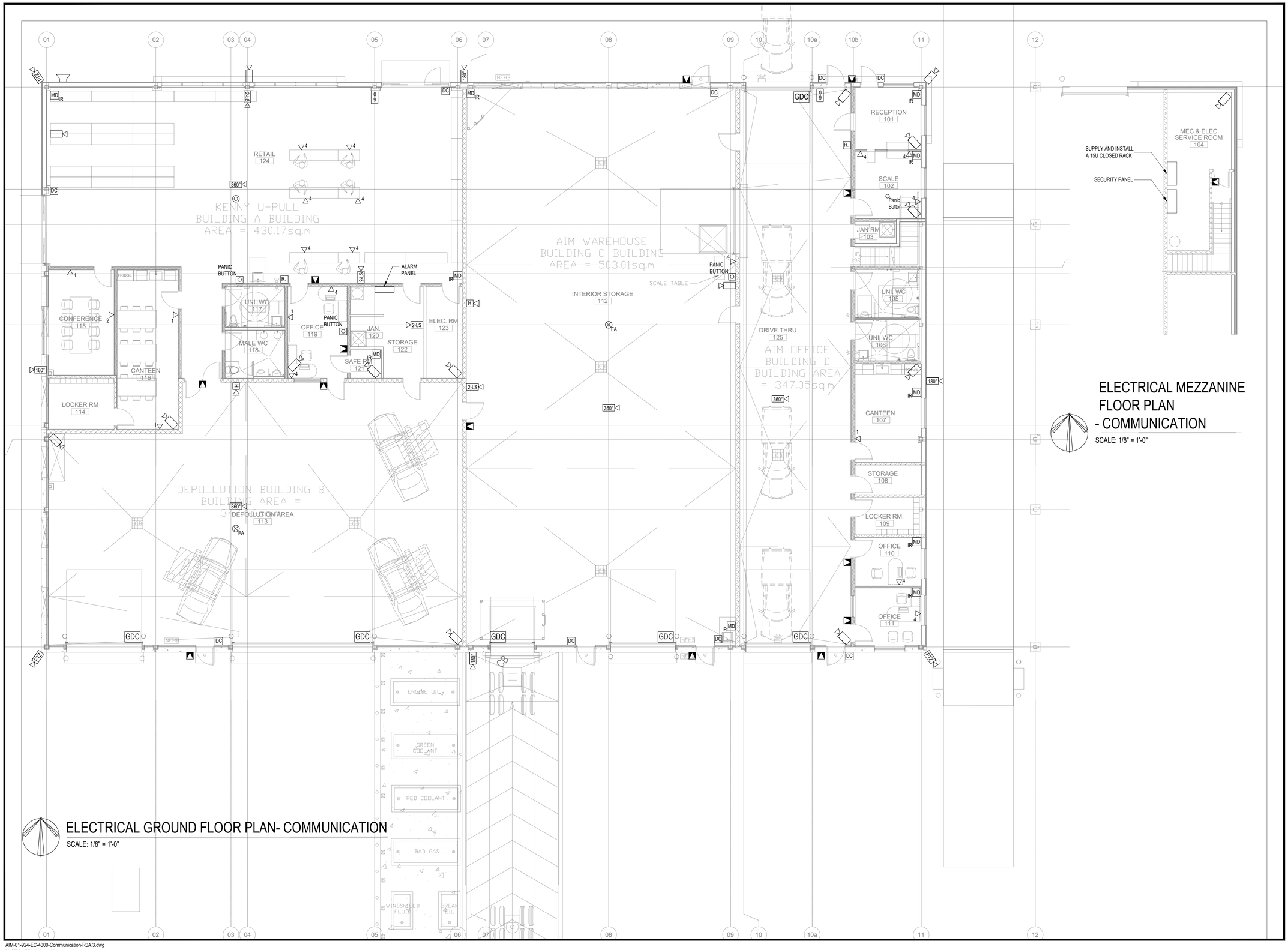
Project

AIM KINGSTON FACILITY

Drawing

ELECTRICAL
LAYOUT
ROOF

Designed by	A.Bulbul	Drawn by	A.Bulbul	Checked by	M.Zaky
Date	2023-04-17	Scale	1:100	Size	ARCH-D
Project #	AIM-01	Drawing #	EB-4100	Revision	3



ELECTRICAL MEZZANINE FLOOR PLAN - COMMUNICATION

SCALE: 1/8" = 1'-0"

ELECTRICAL GROUND FLOOR PLAN- COMMUNICATION

SCALE: 1/8" = 1'-0"

AIM-01-924-EC-4000-Communication-R0A.3.dwg
PLOT DATE: 17-Apr-2023

Key plan

Notes:

1. ALL SECURITY DEVICES (CARD READERS, CAMERAS, ETC.) ARE SUPPLIED AND INSTALLED BY THE CLIENT.
2. THE CONTRACTOR SHALL BERING A CAT6 CABLE FROM THE IT/ELEC ROOM (RM 104) TO EACH OF THE CAMERAS. THE CABLES SHALL BE INSTALLED IN CONDUIT WITH INSTALLED ON WALLS AND CAN BE FREE AIR WHEN SECURED TO THE BOTTOM OF JOISTS.
3. SEE INSTALLATION DETAILS ON DRAWING E-6000 FOR ACCESS CARD READER ROUGH-IN AND INSTALLATION REQUIREMENTS.
4. FOR OTHER DEVICES (KEY PAD, MOTION DETECTOR, DOOR AND GARAGE DOOR CONTACT HEAT DETECTOR), CONTRACTOR SHALL INSTALL A JACKETED CABLE FROM THE SECURITY PANEL TO THE EQUIPMENT.

Rev.	Date	Drawn by	Revision	Checked by
2	2023-04-17	J.K.	ISSUED FOR BUILDING PERMIT	A.S.
1	2023-02-08	S.T.	ISSUED FOR TENDER	A.S.

Seals

2023-04-17
LICENSED PROFESSIONAL ENGINEER
A. SHAHID
100056845
PROVINCE OF ONTARIO

LAPORTE Engineering
100-89 Skyway Avenue
Toronto (ON) M9W 6R4
Canada
T. 416.675.6761
WWW.LAPORTECONSULTANTS.COM

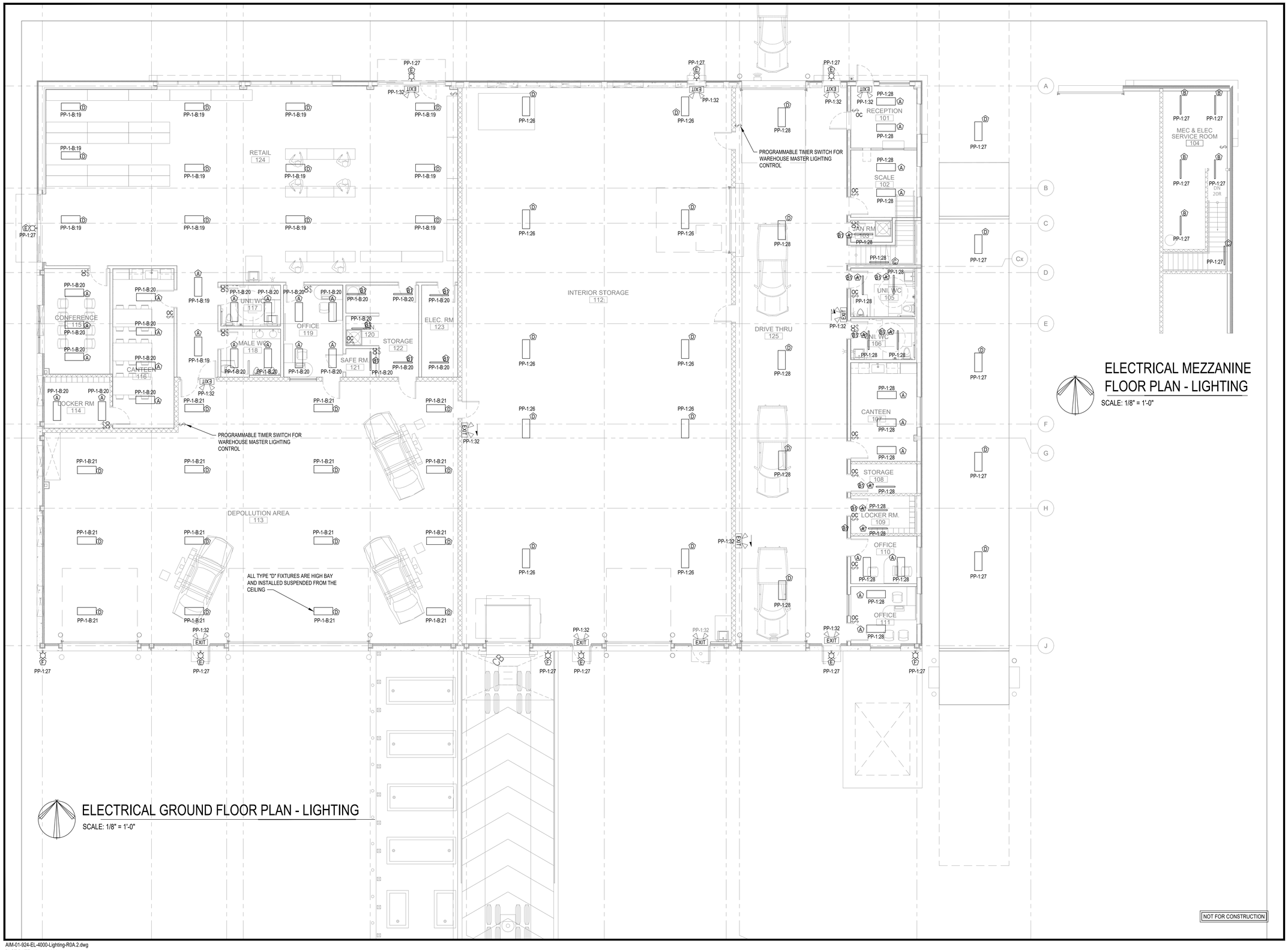
Project

AIM KINGSTON FACILITY

Drawing

ELECTRICAL
COMMUNICATION LAYOUT

Designed by	A.SHAHID	Drawn by		Checked by	
Date	2023-04-17	Scale	N.T.S.	Size	ARCH-D
Project #	AIM-01	Drawing #	EC-4000	Revision	2



ELECTRICAL MEZZANINE FLOOR PLAN - LIGHTING

SCALE: 1/8" = 1'-0"

ELECTRICAL GROUND FLOOR PLAN - LIGHTING

SCALE: 1/8" = 1'-0"

NOT FOR CONSTRUCTION

AIM-01-924-EL-4000-Lighting-R0A.2.dwg
PLOT DATE: 17-Apr-2023

Key plan

Notes:

Rev.	Date	Drawn by	Revision	Checked by
2	2023-04-17	J.K.	ISSUED FOR BUILDING PERMIT	A.S.
1	2023-02-08	S.T.	ISSUED FOR TENDER	A.S.

Seals

2023-04-17
LICENSED PROFESSIONAL ENGINEER
A. SHAHID
100596845
PROVINCE OF ONTARIO

LAPORTE Engineering
100-89 Skyway Avenue
Toronto (ON) M9W 6R4
Canada
T. 416.675.6761
WWW.LAPORTECONSULTANTS.COM

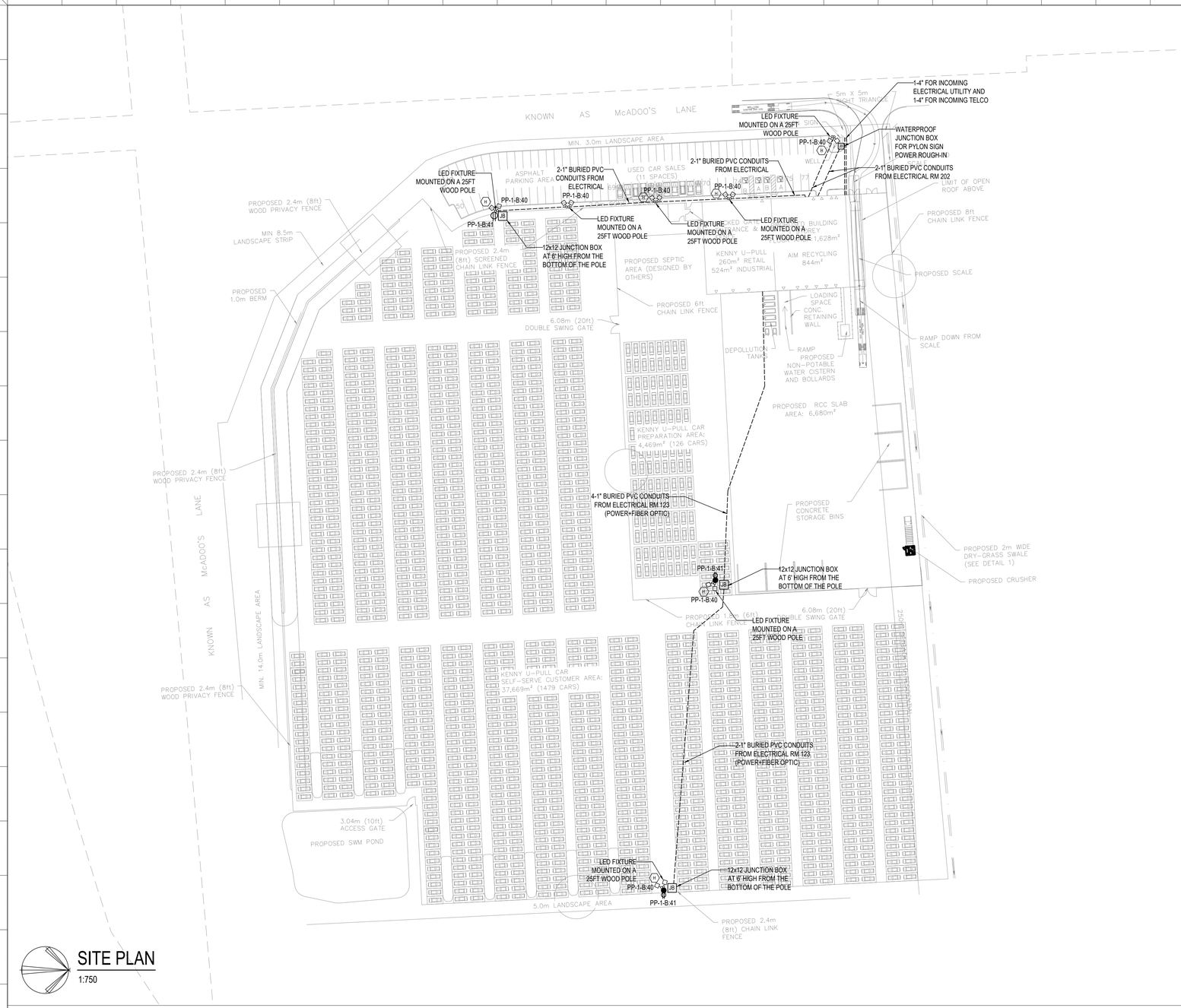
Project

AIM KINGSTON FACILITY

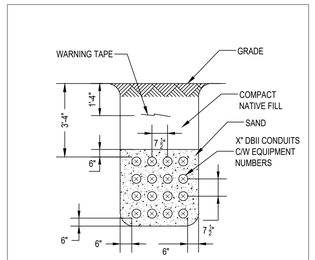
Drawing

ELECTRICAL
LIGHTING PLAN

Designed by	A.SHAHID	Drawn by	H.JAIN	Checked by	A. SHAHID
Date	2022-04-17	Scale	N.T.S.	Size	ARCH-D
Project #	AIM-01	Drawing #	EL-4000	Revision	2



SITE PLAN
1:750



TYPICAL SECTIONS
N.T.S.

Key plan

Notes:

Rev.	Date	Drawn by	Revision	Checked by
2	2023-04-17	J.K.	ISSUED FOR BUILDING PERMIT	A.S.
1	2023-02-08	S.T.	ISSUED FOR TENDER	A.S.

Seals

2023-04-17
LICENSED PROFESSIONAL ENGINEER
A. SHAHID
100056845
PROVINCE OF ONTARIO

LAPORTE Engineering
100-89 Skyway Avenue
Toronto (ON) M9W 6R4
Canada
T. 416.675.6761
WWW.LAPORTECONSULTANTS.COM

Project
AIM KINGSTON FACILITY

Drawing
ELECTRICAL SITE PLAN

Designed by	J.WANG	Drawn by	J.WANG	Checked by	A.SHAHID
Date	2023-04-17	Scale	N.T.S.	Size	ARCH-D
Project #	AIM-01	Drawing #	ER-4000	Revision	2

AIM-01-924-ER-4000 SitePlan-R01.2.dwg
PLOT DATE: 17-Apr-2023

LUMINAIRE SCHEDULE

TYPE	DESCRIPTION	MANUFACTURER	CAT. #	WATTS	VOLTAGE	LUMENS	COLOR TEMPERATURE	CONTROLS	MOUNTING HEIGHT	NOTES
A	BACKLITE LED 2'X4' PANEL LIGHT	MVP LIGHTING	RGD-BLP5/24/MW/MK/120-347/D	45-40-36W	120-347V	5625-5000-4500	35-40-50K		SURFACE CEILING	PROVIDE SURFACE MOUNT KIT
B	LED STRIP LIGHT	MVP LIGHTING	DL-EC/4FS/MW/MK/120-347V/D	30-25-18W	120-347V	4050-3250-2340	35-40-50K		SUSPENDED, +9' AFF	
B1	LED STRIP LIGHT	MVP LIGHTING	DL-EC/4FS/MW/MK/120-347V/D	30-25-18W	120-347V	4050-3250-2340	35-40-50K		SURFACE CEILING	
C	LED STAIRWELL LIGHT	MVP LIGHTING	DL-EC/4FL/MW/MK/120-347V/D/S	45-38-34W	120-347V	6075-4940-4420	35-40-50K		SURFACE WALL, +8' AFF OR ABOVE LANDING	BUILT-IN MENTION SENSOR
D	LED LINEAR HIGH BAY LIGHT	MVP LIGHTING	SSL-LHB3/130W/40/120-347V/AS/D	85W	120-347V	11475	4000K		SUSPENDED, +18' 6" AFF	DIMMABLE SMART SENSOR
E	EVOLVE LED WALL PACK	MVP LIGHTING	EWLS02017AF740N1FMBLCKH	50-250W	120-277V	1700	4000K	MOTION SENSOR	SURFACE WALL, +10' AFG	
F	EVOLVE LED WALL PACK	MVP LIGHTING	EWAS010D3AW740N1FMBLCKH	77W	120-277V	10200	4000K	MOTION SENSOR	SURFACE WALL, +10' AFG	
H	LED AREA LIGHT	MVP LIGHTING	SSL-AL2/T3/100W/40/120-347V/DB/D/SCR	100W	120-347V	14000	4000		ROUND POLE MOUNTING	

NOTES:

1. ALL LIGHT FIXTURE TO BE AS SPECIFIED OR APPROVED EQUAL.

MECHANICAL EQUIPMENT SCHEDULE

EQUIP. TAG	DESCRIPTION	LOAD	MCA	MOCP	V	PH	MIN. WIRE SIZE	FED FROM	DISCONNECT			STARTER				CONTROL DEVICE				REMARK
									SUPPLIED	INSTALLED	WIRED	TYPE	SUPPLIED	INSTALLED	WIRED	TYPE	SUPPLIED	INSTALLED	WIRED	
RTU-1	ROOF TOP UNIT		32	35	575	3	#8 RW90	DP-1	M	M	E	VFD	M	M	M	T	M	E	E	LINE VOLTAGE T-STAT
RTU-2	ROOF TOP UNIT		59	60	575	3	#6 RW90	DP-1	M	M	E	VFD	M	M	M	T	M	E	E	LINE VOLTAGE T-STAT
UH-01	UNIT HEATER	7.6 KW			600	3	#12 RW90	DP-1	E	E	E					T	M	E	E	LINE VOLTAGE T-STAT
UH-02	UNIT HEATER	7.6 KW			600	3	#10 RW90	DP-1	E	E	E					T	M	E	E	LINE VOLTAGE T-STAT
UH-03	UNIT HEATER	10 KW			600	3	#10 RW90	DP-1	E	E	E					T	M	E	E	LINE VOLTAGE T-STAT
EF-01	EXHAUST FAN	1491 W			575	3	#10 RW90	DP-1	M	M	E	VFD	M	M	E	IL	M	M	M	INTERLOCK WITH CO DETECTOR
EF-02	EXHAUST FAN	121 W			115	1	#12 RW90	PP-1-B	M	E	E									
EF-03	EXHAUST FAN	1491 W			575	3	#12 RW90	DP-1	M	E	E					T	M	E	E	REVERSE ACTING T-STAT
EF-04	EXHAUST FAN	1491 W			575	3	#12 RW90	DP-1	M	M	E	VFD	M	M	E	IL	M	M	M	INTERLOCK WITH CO DETECTOR
EF-05	EXHAUST FAN	135 W			115	1	#12 RW90	PP-1	M	E	E									
EF-06	EXHAUST FAN	117 W			115	1	#12 RW90	PP-1	M	E	E									
EF-07	EXHAUST FAN	14 W			115	1	#12 RW90	PP-1	M	E	E									
EF-08	EXHAUST FAN	14 W			115	1	#12 RW90	PP-1-B	M	E	E									
EF-09	EXHAUST FAN	52 W			115	1	#12 RW90	PP-1	M	E	E									
EF-10	EXHAUST FAN	117 W			115	1	#12 RW90	PP-1	M	E	E									
FF	FORCE FLOW HEATER	2 KW			208	1	#12 RW90	PP-1												
EWH-01 & 2	DOMESTIC WATER HEATER	9 KW			208	3	#10 RW90	PP-1												
AIR COMP	AIR COMPRESSOR	25 HP			575	3	#12 RW90	DP-1	E	E	E		M	M	M		M	M	M	
	AIR DRYER				115	1	#12 RW90	PP-1	E	E	E									
CF-1	CEILING FAN	90W			120	1	#12 RW90	PP-1	E	E	E									
P-1	DOMESTIC WATER PUMP	2 HP			575	3	#12 RW90	DP-1	E	E	E	MAG	M	M	E					

REFERENCE NOTES:

1. ALL LINE VOLTAGE CONTROL WIRING BY ELECTRICAL CONTRACTOR, AND ALL LOW VOLTAGE CONTROL WIRING BY MECHANICAL CONTRACTOR.
2. CONTRACTOR IS TO CONFIRM WITH SPRINKLER CONTRACTOR FOR ACTUAL QUANTITY AND LOCATION OF FLOW SWITCHES AND TAMPER SWITCHES.

STARTER TYPE:

VFD: VARIABLE FREQUENCY DRIVE
MAG: MAGNETIC STARTER c/w AUX. CONTACTS
HOA: HAND/OFF/AUTO MAGNETIC STARTER c/w AUX. CONTACTS

CONTROL TYPE:

S: WALL SWITCH
T: THERMOSTAT
H: HUMIDISTAT
F: FLOAT SWITCH
VS: VARIABLE SPEED SWITCH
TC: TIMECLOCK
PS: PRESSURE SWITCH
OS: OCCUPANCY SENSOR
IL: INTERLOCKED OTHER EQUIPMENT
BMS: BUILDING MANAGEMENT SYSTEM
SEN: OTHER TYPE SENSOR AS NOTED

Key plan

Notes:

Rev.	Date	Drawn by	Revision	Checked by
2	2023-04-17	J.K.	ISSUED FOR BUILDING PERMIT	A.S.
1	2023-02-08	S.T.	ISSUED FOR TENDER	A.S.

Seals

2023-04-17
LICENSED PROFESSIONAL ENGINEER
A. SHAHID
100056846
PROVINCE OF ONTARIO

LAPORTE

LAPORTE Engineering
100-89 Skyway Avenue
Toronto (ON) M9W 6R4
Canada

T. 416.675.6761
WWW.LAPORTECONSULTANTS.COM

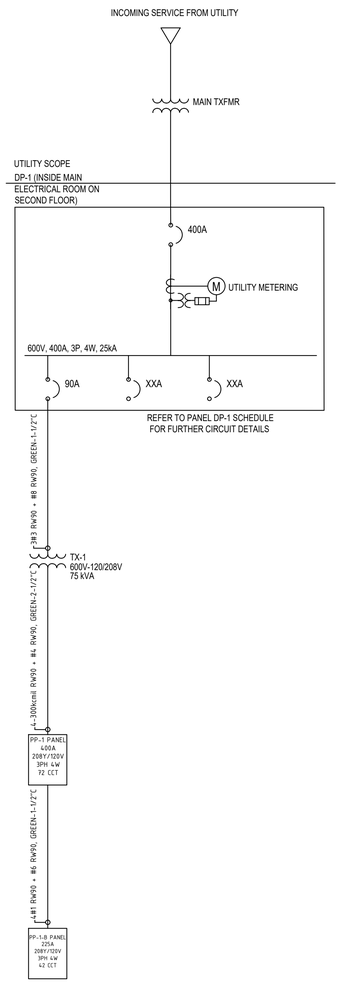
Project

AIM KINGSTON FACILITY

Drawing

ELECTRICAL SCHEDULES

Designed by	A.SHAHID	Drawn by		Checked by	
Date	2023-04-17	Scale	N.T.S.	Size	ARCH-D
Project #	AIM-01	Drawing #	ES-8000	Revision	2



PANEL PP-1

LOCATION: ELECTRICAL ROOM — SURFACE MOUNTED, NEMA TYPE 2
FED FROM: DP-1 — 208/120V, 3PH, 4W, 400AMP
MAIN LUG ONLY — AIC RATING: 14KA

DESCRIPTION	BREAKER	CCT#	PH	CCT#	BREAKER	DESCRIPTION
PANEL PP-1-B	125	1	A	2	15	RECEPTACLE - DRIVE THRU 125
		3	B	4	15	RECEPTACLE - RECEPTION 101
		5	C	6	15	RECEPTACLE - 102, 103
RECEPTACLE - INTERIOR STORAGE 112	15	7	A	8	20	HAND DRYER - 105, 106
RECEPTACLE - INTERIOR STORAGE 112	15	9	B	10	15	RECEPTACLE - 105, 106, 107
RECEPTACLE - EXTERIOR	15	11	C	12	20	FRIDGE RECEPTACLE - CANTEEN 107
RECEPTACLE - 107, 108, 109, 110	15	13	A	14	20	MICROWAVE RECEPTACLE - CANTEEN 107
RECEPTACLE - 110, 111	15	15	B	16	15	(5) EF, 102, 105, 108, 201, ROOF(EF-9)
RECEPTACLE - M&E MEZZ. 201	15	17	C	18	20	RECEPTACLE - TIRE MACHINE 113
FORCE FLOW HEATER	15	19	A	20		
		21	B	22	20	LIFT - DEPOLLUTION AREA 113
LIFT - DEPOLLUTION AREA 113	20	23	C	24		
		25	A	26	15	LIGHTING - INTERIOR 112
LIGHTING - INTERIOR	15	27	B	28	15	LIGHTING - INTERIOR
RECEPTACLE - AIR DRYER	15	29	C	30	20	RECEPTACLE - RTU1
RECEPTACLE - RTU2	20	31	A	32	15	EXIT LIGHTINGS
DOMESTIC WATER HEATER, EWH-02	35	33	B	34	35	DOMESTIC WATER HEATER, EWH-01
		35	C	36		
		37	A	38		
GARAGE DOOR	15	39	B	40	20	OUTDOOR POLE LIGHTINGS
OUTDOOR POLE RECEPTACLE	15	41	C	42	15	CEILING FANS - DRIVE THRU 125
		43	A	44		
		45	B	46		
		47	C	48		
		49	A	50		
		51	B	52		
		53	C	54		
		55	A	56		
		57	B	58		
		56	C	60		

PANEL DP-1

LOCATION: ELECTRICAL ROOM — SURFACE MOUNTED, NEMA TYPE 2
FED FROM: UTILITY — 600/347V, 3Ø, 4W, 250A
MAIN CB — AIC RATING: 18KA

DESCRIPTION	BREAKER	CCT#	PH	CCT#	BREAKER	DESCRIPTION
PANEL 'PP-1' VIA 75kVA TRANSFORMER	90	1	A	2	35	RTU-1
		3	B	4		
		5	C	6		
EF-1, EF-3, EF-4	15	7	A	8	60	RTU-2
		9	B	10		
		11	C	12		
(4) UH-1	40	13	A	14	15	SHEAR
		15	B	16		
		17	C	18		
(4) UH-2	40	19	A	20	40	(3) UH-3
		21	B	22		
		23	C	24		
AIR COMP	30	25	A	26	20	(5) O/H DOORS
		27	B	28		
		29	C	30		
P-1 (PUMP)	15	31	A	32	20	GARAGE DOOR AND DOCK LEVELER
		33	B	34		
		35	C	36		
		37	A	38		
		39	B	40		
		41	C	42		

NOTES:

PANEL PP-1-B

LOCATION: WAREHOUSE — SURFACE MOUNTED, NEMA TYPE 2
FED FROM: PP-1 — 208/120V, 3Ø, 4W, 225A
MAIN LUG ONLY — AIC RATING: 14KA

DESCRIPTION	BREAKER	CCT#	PH	CCT#	BREAKER	DESCRIPTION
DESK RECEPTACLE - RETAIL 124	15	1	A	2	15	RECEPTACLE - 117, 118, 119
RECEPTACLE - RETAIL 124	15	3	B	4	20	HAND DRYER
RECEPTACLE - RETAIL 124	15	5	C	6	15	RECEPTACLE - CANTEEN 116
RECEPTACLE - EXTERIOR	15	7	A	8	20	FRIDGE RECEPTACLE - CANTEEN 116
RECEPTACLE - 120, 121, 122, 123	15	9	B	10	20	RECEPTACLE - CANTEEN 116
RECEPTACLE - CONFERENCE 115	15	11	C	12	20	MICROWAVE RECEPTACLE - CANTEEN 116
RECEPTACLE - 113, 114	15	13	A	14	15	RECEPTACLE - DEPOLLUTION AREA 113
RECEPTACLE - CAR BATTERY CHAR. 113	20	15	B	16	20	RECEPTACLE - CAR BATTERY CHAR. 113
RECEPTACLE - TOWER OF THE LIFT 113	15	17	C	18	15	EF-2 114
LIGHTING - INTERIOR 124	15	19	A	20	15	LIGHTING - INTERIOR
LIGHTING - INTERIOR 113	15	21	B	22	15	DESK RECEPTACLE - RETAIL 124
CONTROL PANEL - TANK	15	23	C	24	15	CONTROL PANEL - TANK
DESK RECEPTACLE - RETAIL 124	15	25	A	26	15	CONTROL PANEL - TANK
CONTROL PANEL - TANK	15	27	B	28	20	RECEPTACLE - CAR BATTERY CHAR. 113
RECEPTACLE - CONFERENCE 115	15	29	C	30	20	RECEPTACLE - CAR BATTERY CHAR. 113
EF POWER	15	31	A	32	15	ALARM PANEL
SLIDING DOORS	15	33	B	34		
		35	C	36		
		37	A	38		
		39	B	40		
		41	C	42		
		43	A	44		
		45	B	46		
		47	C	48		
		49	A	50		
		51	B	52		
		53	C	54		
		55	A	56		
		57	B	58		
		59	C	60		
		61	A	62		
		63	B	64		
		65	C	66		
		67	A	68		
		69	B	70		
		71	C	72		
		73	A	74		
		75	B	76		
		77	C	78		
		79	A	80		
		81	B	82		
		83	C	84		

NOTES:

ELECTRICAL LOAD CALCULATION

LOAD DESCRIPTION	LOAD kW
BASE BUILDING	40
MECHANICAL	150
OWNER EQUIPMENT	80
TOTAL LOAD	270
FULL LOAD AMPS	270kW / (0.9PF * 600V*1.732) = 288A
MINIMUM SERVICE SIZE	288A * 125% = 360A
A NEW 600V, 400A 3PH SERVICE SHALL BE PROVIDED	

Key plan

Notes:

Rev.	Date	Drawn by	Revision	Checked by
2	2023-04-17	J.K.	ISSUED FOR BUILDING PERMIT	A.S.
1	2023-02-08	S.T.	ISSUED FOR TENDER	A.S.

Seals

2023-04-17
LICENSED PROFESSIONAL ENGINEER
A. SHAHID
100556845
PROVINCE OF ONTARIO

LAPORTE Engineering
100-89 Skyway Avenue
Toronto (ON) M9W 6R4
Canada
T. 416.675.6761
WWW.LAPORTECONSULTANTS.COM

Project
AIM KINGSTON FACILITY

Drawing
ELECTRICAL SCHEDULES

Designed by	A.SHAHID	Drawn by		Checked by	
Date	2023-04-17	Scale	N.T.S.	Size	ARCH-D
Project #	AIM-01	Drawing #	ES-8001	Revision	2