			LEGEND (	OF ELECTRICAL SYM	BOLS		
	LIGHTING		MECHANICAL		COMMUNICATION SYSTEMS		FIRE ALARM
Ø RECE LUMII	CESSED LED / INCANDESCENT / COMPACT FLUORESCENT INNAIRE	<b>O</b>	MOTOR	$\Box$	VOICE OUTLET	<b>€</b> <sup>A</sup>	SMOKE ALARM
	RFACE LED / INCANDESCENT / COMPACT FLUORESCENT INNAIRE	$\otimes$	THREE-PHASE MOTOR	$\Box$	DATA OUTLET	₩ <sup>AC</sup>	SMOKE ALARM/CARBON MONOXIDE ALARM
	LL LED / INCANDESCENT / COMPACT FLUORESCENT INNAIRE		MOTOR C/W DISCONNECT SWITCH	$\nabla$	COMBINATION VOICE/DATA OUTLET	AC	SMOKE ALARM/CARBON MONOXIDE ALARM C/W STROBE
	) / INCANDESCENT / COMPACT FLUORESCENT WALL SHER	нÓ	MOTOR C/W MANUAL STARTER	$\Box$	TELEVISION OUTLET	•	SMOKE DETECTOR
RECE	JESSED LED / INCANDESCENT / COMPACT FLUORESCENT		UNFUSED DISCONNECT SWITCH	$\Box$	COMBINATION VOICE/TELEVISION OUTLET	•	SMOKE DETECTOR IN CEILING PLENUM
SURF	RFACE LED / INCANDESCENT / COMPACT FLUORESCENT INNAIRE ON EMERGENCY POWER	-	FUSED DISCONNECT SWITCH		FLOOR MOUNTED VOICE OUTLET		SMOKE DETECTOR UNDER FLOOR
WALL	LLL LED / INCANDESCENT / COMPACT FLUORESCENT INVAIRE ON EMERGENCY POWER		COMBINATION MAGNETIC STARTER/DISCONNECT SWITCH		FLOOR MOUNTED DATA OUTLET	RR	RATE OF RISE HEAT DETECTOR
	CESSED FLUORESCENT LUMINAIRE		MAGNETIC STARTER		FLOOR MOUNTED COMBINATION VOICE/DATA OUTLET	200	FIXED HIGH TEMPERATURE 200°F HEAT DETECTOR (88°C)
SURF	RFACE FLUORESCENT LUMINAIRE	S	FAN SPEED CONTROLLER		FLOOR MOUNTED TELEVISION OUTLET	135	FIXED HIGH TEMPERATURE 135°F HEAT DETECTOR (58°C)
WALL	LL FLUORESCENT LUMINAIRE	0	THERMOSTAT		CEILING MOUNTED DATA OUTLET	<b>—</b>	DUCT SMOKE DETECTOR - 'SA' DENOTES SUPPLY AIR, 'RA' DENOTES RETURN AIR
WALL	LL FLUORESCENT LUMINAIRE ON EMERGENCY POWER	(SE)	SENSOR		CEILING MOUNTED TELEVISION OUTLET	[R]	DUCT SMOKE DETECTOR C/W SHUTDOWN RELAY
FLUC	IORESCENT STRIP LUMINAIRE	XXX	MOTOR IDENTIFICATION TAG (REFER TO MECHANICAL SCHEDULE)	M	MICROPHONE OUTLET	PS	FIRE ALARM PULL STATION
FLUC	IORESCENT STRIP LUMINAIRE	××××××××××××	BASEBOARD HEATER	P	PA SPEAKER - CEILING MOUNTED	IFŜ)	SPRINKLER FLOW SWITCH
RECE	CESSED FLUORESCENT LUMINAIRE ON EMERGENCY POWER		POWER	P	PA SPEAKER - WALL MOUNTED	TŜ	SPRINKLER TAMPER SWITCH
SURF	RFACE FLUORESCENT LUMINAIRE ON EMERGENCY POWER	Ф	SINGLE/SPECIAL PURPOSE RECEPTACLE	V	VOLUME CONTROLLER	PŜ	SPRINKLER PRESSURE SWITCH
7 🖨	CK LIGHTING CW LIGHTING HEADS AS SHOWN	<u>ф</u>	DUPLEX RECEPTACLE		CHIME	ISŴ)	SPRINKLER SUPERVISED VALVE
` '	LE MOUNTED LUMINAIRE	Ö	ISOLATED GROUND RECEPTACLE	0	CLOCK - CEILING MOUNTED		END OF LINE RESISTOR
	HTING BOLLARD	<b>b</b>	GROUND FAULT RECEPTACLE		CLOCK - WALL MOUNTED	FO	FIRE ALARM BELL
	HTING LUMINAIRE TYPE TAG	<del></del>	SPLIT/SWITCHED CIRCUIT RECEPTACLE		PAC-POLE PAC-POLE	F	FIRE ALARM COMBINATION BELL AND STROBE
\\(\sigma\)	T LIGHT - CEILING (CW ARROWS AS INDICATED)	Ф	20A T-SLOT RECEPTACLE	<u> </u>	WATER DETECTOR	F	FIRE ALARM HORN
XX	T LIGHT - WALL (C/W ARROWS AS INDICATED)	<b>—</b>	FOURPLEX RECEPTACLE		GROUND BAR	F4	FIRE ALARM COMBINATION HORN AND STROBE
T.	ERGENCY POWER BATTERY PACK		ISOLATED GROUND FOURPLEX RECEPTACLE		BACKBOARD		FIRE ALARM MINI HORN/STROBE WITH SILENCE BUTTON
4 D	ERGENCY POWER BATTERY PACK C/W LIGHTING HEADS	<b>→</b>	COMPUTER DUPLEX RECEPTACLE (FED W/ DEDICATED NEUTRAL)				FIRE ALARM MINI HORN WITH SILENCE BUTTON
186	ERGENCY POWER BATTERY PACK C/W R. HEADS & EXIT LIGHT	<b>→</b>	COMPUTER FOURPLEX RECEPTACLE (FED W/ DEDICATED NEUTRAL)		SECURITY SYSTEMS	F	FIRE ALARM STROBE
	GLE REMOTE EMERGENCY LIGHTING HEAD - CEILING MOUNT		FLOOR MOUNTED RECEPTACLE		SECURITY HORN		FIRE ALARM MINI SPEAKER WITH SILENCE BUTTON
	UBLE REMOTE EMERGENCY LIGHTING HEAD - CEILING MOUNT	<u></u>	FLOOR MOUNTED ISOLATED GROUND RECEPTACLE	<b>.</b>	PUSH BUTTON	F	FIRE ALARM SPEAKER - CEILING MOUNTED
	GLE REMOTE EMERGENCY LIGHTING HEAD - WALL MOUNT		FLOOR MOUNTED FOURPLEX ISOLATED GROUND RECEPTACLE	[DH]	MAGNETIC DOOR HOLD OPEN	F	FIRE ALARM COMBINATION SPEAKER/STROBE - CEILING MOUNTED
	UBLE REMOTE EMERGENCY LIGHTING HEAD - WALL MOUNT	<u>₩</u>	FLOOR MOUNTED COMPUTER DUPLEX RECEPTACLE	[ML]	MAGNETIC LOCK	H.F	FIRE ALARM SPEAKER - WALL MOUNTED
	ITCH - SINGLE, TWO, AND THREE GANG	—————————————————————————————————————	W/DEDICATED NEUTRAL  CEILING MOUNTED SINGLE/SPECIAL PURPOSE RECEPTACLE	[ES]	ELECTRIC STRIKE	+(F)	FIRE ALARM COMBINATION SPEAKER/STROBE - WALL MOUNTED
2	OLE SWITCH		CEILING MOUNTED DIPLEZ RECEPTACLE	[DP]	DOOR POSITION SWITCH	F	FIRE PHONE
3	ITCH - 3 WAY		CEILING MOUNTED JUNCTION/SLAB BOX	(REX.)	REQUEST TO EXIT SENSOR	IM	ISOLATION MODULE
_	ITCH - LOW VOLTAGE		FLOOR MOUNTED JUNCTION/SLAB BOX	(MS)	SECURITY MOTION SENSOR	(M)	SUITE AUDIBLE ISOLATOR
	ITCH - KEY SWITCH				CARD READER	CM	CONTROL MODULE
м	ITCH - MANUAL STARTER		WALL MOUNTED JUNCTION BOX	CR V	2-WAY VOICE/PANIC	MM	MONITORING MODULE
	ITCH - DIMMER SWITCH		ELECTRICAL PANELBOARD - SURFACE MOUNTED  ELECTRICAL PANELBOARD - RECESSED		INTERCOM	[MIN]	
<del>-</del>							GENERAL CONDUCTOR OF DEPUMPAL OF STUDIES
<u> </u>	ITCH - OCCUPANCY SENSOR SWITCH		CONTACTOR		SECURITY STROBE  CCTV CAMERA		CONDUIT CONCEALED IN WALL OR CEILING  CONDUIT CONCEALED IN SLAB OR RUIN LINDERGROUND
	ITCH CW PILOT LIGHT - SINGLE GANG  ITCH - TIMER SWITCH		CAR PLUG POST	<u> </u>	CCTV CAMERA  GLASS BREAKAGE SENSOR		CONDUIT CONCEALED IN SLAB OR RUN UNDERGROUND  CONDUIT UP
	OTO ELECTRIC CELL		TIME CLOCK SINGLE PHASE DIRECT CONNECTION		GLASS BREAKAGE SENSOR  KEYPAD		
			SINGLE PHASE DIRECT CONNECTION  THERE PHASE DIRECT CONNECTION	K FIN			CONDUIT DOWN
	CUPANCY SENSOR - CEILING MOUNTED	0	THREE PHASE DIRECT CONNECTION		INTERCOM		CONDUIT STUB
	/LIGHT HARVESTING LIGHT SENSOR	0-60	DROP CORD	[RM]	RELAY MODULE		CONDUIT CONTINUATION  DENOTE WEATHERDROOF DEVICE
	/ OFF ROOM CONTROLLER					WP	DENOTES WEATHERPROOF DEVICE
	DV DIMMING CONTROLLER					NL .	DENOTES UNSWITCHED LUMINAIRE (NIGHT LIGHT)
(PP) LIGHT	HTING CONTROL POWER PACK					R	DENOTES DEVICE TO REMOVE OR RELOCATE
						RL	DENOTES RELOCATED DEVICE
						•	DENOTES FURNITURE MOUNTED DEVICE
						E	DENOTES EXISTING TO REMAIN
						(NO.)	CO./NO. DETECTOR IN PARKING AREA

### **ELECTRICAL ABBREVIATIONS LIST**

1 POLE (2P, 3P, 4P, ETC.) HEAT RECOVERY VENTILATION ABOVE COUNTER OR AIR CONDITIONE HEATING HEATER ABOVE CEILING AUTOMATIC DOOR OPENER HEATING, VENTILATING AND ARC FAULT CIRCUIT INTERRUPTE AIR HANDLING UNIT HYDRONIC WATER PUMP ALTERNATE LOCATE OR LOCATION MAXIMUM AMERICAN WIRE GAUGE MECHANICAL CONTRACTOR MICROWAVE CIRCUIT BREAKER CIRCUIT MAIN CIRCUIT BREAKER MOTOR CONTROL CENTER CEILING CONNECTION CONSTRUCTION MAIN DISTRIBUTION PANE MECHANICAL CONTRACTOR CONTRACTOR
CIRCULATING PUMP
CENTER MANUFACTURER MISCELLANEOUS COPPER COMPLETE WITH MAIN LUGS ONLY EMPTY CONDUIT MOUNTED DISCONNECT COORDINATED IN MILLWORK DOWN DAMPER DISHWASHER NATIONAL ELECTRICAL MANUFACTURER'S ASSOCIATION NOT IN CONTRACT NIGHT LIGHT DRAWING NOT TO SCALE ELECTRICAL CONTRACTOR ELECTRIC, ELECTRICAL OVERHEAD OVERLOADS EMERGENCY ELECTRICAL METALLIC TUBING PULL BOX OR PUSHBUTTON DELTA PAIR/PRINTER FIRE ALARM
FIRE ALARM CONTROL PANEL POLYVINYL CHLORIDE (CONDUIT)
POWER FAN COIL UNIT FIXTURE FLOOR QUANTITY RELOCATE(D) RECEPTACLE REQUIRED FLUORESCEN REFRIGERATOR FREEZER GAUGE RIGID METAL CONDUIT ROOF TOP UNIT SURFACE CONDUIT SECONDARY GENERAL CONTRACTOR GROUND SERVICE ENTRANCE RATEI

SPECIFICATION SPEAKER SPARE SURFACE RACEWAY STOP/START PUSHBUTTONS STATION STANDARD SUMP PUMP SURF SW SURFACE MOUNTED SWITCH SWITCHBOARD SYMMETRICAL TEUDATA TELEPHONE/DATA TERMINAL TAMPER RESISTAN THERMOSTAT UNDER COUNTER VERTICAL VOLUME WATT WATER HEATER

WEATHERPROC WASHER ANGLE

#### **GENERAL NOTES:**

THE GENERAL NOTES AS DESCRIBED HEREIN, APPLY TO ALL DRAWINGS IN THIS PACKAGE WHERE APPLICABLE: PENETRATIONS IN WALLS OR SEPERATIONS, REQUIRING PROTECTED OPENINGS SHALL BE FIRESTOPPED WITH AN APPROVED MATERIAL.

EXPOSED WIRING SHALL NOT BE PERMITTED. WIRING SHALL BE RECESSED IN WALL, OR WHERE WALLS ARE NOT ACCESSIBLE DUE TO WALL CONSTRUCTION (CONCRETE BLOCK, CONCRETE, BRICK, ETC), PROVIDE CONDUIT AS REQUIRED TO REFER TO ARCHITECTURAL FLOOR PLANS, ELEVATIONS AND DETAILS, INCLUDING

MILLWORK DETAILS AND SHOP DRAWINGS FOR COORDINATION OF ELECTRICAL DEVICE LOCATIONS. METHOD OF INSTALLATION & MOUNTING HEIGHTS. ARCHITECTURAL FLOOR PLANS, ELEVATIONS AND DETAILS TAKE PRECEDENCE OVER LOCATIONS SHOWN ON ELECTRICAL DRAWINGS.

UNLESS NOTED OTHERWISE, THE CIRCUITING INDICATED ON THE DRAWINGS IS REPRESENTATIONAL ONLY. CONFIRM CIRCUITING REQUIREMENTS ON SITE. CIRCUIT NUMBERS AT DEVICES CORRESPOND TO PANELBOARD BREAKERS (SEE PANELBOARD SCHEDULE). BRANCH CIRCUITS SHALL BE SIZED ACCORDING TO THE CIRCUIT BREAKER RÁTING AND VOLTAGE DROP REQUIREMENTS, UNLESS INDICATED OTHERWISE ON THE ELECTRICAL EQUIPMENT SCHEDULE

CONDUIT AND WIRE SHALL NOT BE INSTALLED BELOW FLOOR SLAB UNLESS INDICATED ON PLAN BY DASHED CONDUIT/LINE. EMPTY CONDUIT SHALL BE C/W PULL WIRE AND PLASTIC BUSHINGS

L RACEWAY WITHIN THE STRUCTURE ABOVE THE FLOOR SLAB SHALL BE

MINIMUM CONDUIT SIZE SHALL BE 21mm (3/4") UNLESS NOTED OTHERWISE

METAL. RACEWAY BELOW THE FLOOR SLAB AND UNDERGROUND RACEWAY OUTSIDE THE STRUCTURE SHALL BE PVC.

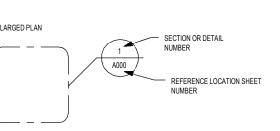
ALL RECESSED LIGHTING FIXTURES IN LAY-IN CEILINGS SHALL BE INSTALLED WITH 6' LONG FLEXIBLE METAL CONDUIT. WHERE CONNECTED TO A 20A. BRANCH CIRCUIT SUPPLYING AN INDIVIDUAL RECEPTACLE (SIMPLEX OR DUPLEX), THE RECEPTACLE SHALL BE RATED AT 20A

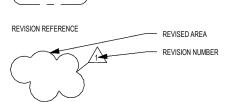
DATA OUTLETS, FIRE ALARM DEVICES SHALL CONSIST OF A BACK BOX WITH CONDUIT STUBBED ABOVE THE ACCESSIBLE CEILING, SEE STUB UP DETAIL VERIFY SIZE OF BACK BOX REQUIRED WITH DEVICE TO BE INSTALLED. LOCATE BACK BOXES 6" FROM ADJACENT POWER RECEPTACLE INTENDED

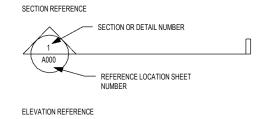
REFER TO ARCHITECTURAL DRAWINGS AND SPECIFICATIONS FOR PHASES OF DEMOLITION AND CONSTRUCTION. COORDINATE WITH GENERAL CONSTRUCTION.

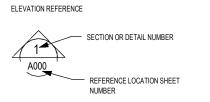
### DRAWING REFERENCE SYMBOLS:

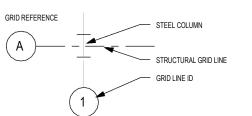
DETAIL REFERENCE - SECTION OR DETAIL NUMBER ENLARGED PLAN











#### **ELECTRICAL - GENERAL NOTES:** 26 00 00 GENERAL ELECTRICAL

### THE ELECTRICAL SPECIFICATION FORMS PART OF THE CONTRACT DOCUMENTS AND IS TO BE READ, INTERPRETED AND COORDINATED WITH ALL OTHER PARTS THE WORD "PROVIDE" SHALL BE TAKEN TO MEAN SUPPLY, INSTALL, TEST AND

REGULATORY REQUIREMENTS: COMPLY WITH ALL REQUIREMENTS OF THE CURRENT BUILDING CODE AND OF THE ONTARIO ELECTRICAL SAFETY CODE (CURRENT EDITION) INCLUDING ALL APPLICABLE AMENDMENTS OR RULES REGULATING THE INSTALLATION OF ELECTRICAL EQUIPMENT. IN NO INSTANCES, HOWEVER, SHALL THE STANDARDS ESTABLISHED BY CONTRACT DOCUMENTS BE REDUCED BY ANY OF THESE CODES OR REGULATIONS.

WHERE REQUIRED BY REGULATIONS, BEFORE STARTING WORK SUBMIT THE APPROPRIATE QUANTITY OF PLANS AND SPECIFICATIONS TO THE ELECTRICAL INSPECTION DEPARTMENT AND OBTAIN ALL NECESSARY PERMITS. INCLUDE ALL COSTS OF PLAN APPROVALS AND ALL PERMIT FEES IN THIS TENDER.

ARRANGE FOR INSPECTION (AS WELL AS ATTENDANCE DURING VERIFICATION) OF THE WORK BY ALL APPLICABLE AUTHORITIES HAVING JURISDICTION. INCLUDE ALL INSPECTION COSTS IN THE TENDER PRICE. UPON COMPLETION OF AND BEFORE FINAL PAYMENT WILL BE MADE, PRESENT TO THE CONSULTANT A CERTIFICATE OF UNCONDITIONAL APPROVAL FOR ALL ELECTRICAL WORK FROM THE ELECTRICAL INSPECTION DEPARTMENT AND OTHER AUTHORITIES HAVING JURISDICTION.

RESPONSIBILITY SUPPLY ALL LABOUR, MATERIALS, EQUIPMENT, TOOLS AND INCIDENTALS NECESSARY TO PROVIDE A COMPLETE ELECTRICAL INSTALLATION AS INDICATED ON THE DRAWINGS AND AS SET OUT IN THESE SPECIFICATIONS. COORDINATE ALL ELECTRICAL WORK WITH THE WORK OF OTHER TRADES AND PROVIDE THE NECESSARY CONNECTIONS TO ENERGIZE ALL ITEMS OF EQUIPMENT PROVIDED BY OTHER TRADES.

EXISTING CONDITIONS AND DEMOLITION

SUBMISSION OF A TENDER FOR THIS WORK SHALL BE TAKEN THAT THE CONTRACTOR HAS MADE A THOROUGH EXAMINATION OF THE SITE AND EXISTING

EXAMINE DRAWINGS OF ALL OTHER TRADES AND ALLOW FOR ALL WORK SUCH AS THE REMOVAL AND RE-INSTALLATION OF ELECTRICAL LUMINAIRES, EQUIPMENT, DEVICES, WIRING, RACEWAYS, ETC. WHERE SUCH WORK IS REQUIRED DUE TO ALTERNATIONS IN OR ABOUT THE EXISTING BUILDING. REMOVE ALL SURPLUS CONDUITS, WIRING, LUMINAIRES, AND DEVICES IN RENOVATED AREAS. BLANK OFF OR REMOVE ALL UNUSED OUTLET BOXES.

REMOVE ALL ELECTRICAL DEVICES AS INDICATED ON THE DEMOLITION PLANS. ALL OTHER EXISTING ELECTRICAL DEVICES ARE TO REMAIN.

ALL OTHER EXISTING ELECTRICAL DEVICES ARE TO REMAIN.

ALL SURPLUS ELECTRICAL EQUIPMENT, DEVICES, AND LUMINAIRES SHALL BE
CONSIDERED THE OWNER'S PROPERTY UNLESS OTHERWISE NOTED, DURING
DEMOLITION DETERMINE FROM THE OWNER WHICH MATERIALS THEY WISH TO
KEEP. TRANSPORT AND STORE SUCH ITEMS AT A LOCATION ON SITE AS DIRECTED
BY THE OWNER. ALL OTHER SURPLUS ELECTRICAL EQUIPMENT, DEVICES AND
LUMINAIRES SHALL BE REMOVED FROM THE SITE. REQUEST FOR A SIGNED
RECEIPT FOR SURPLUS MATERIAL TURNED OVER TO THE OWNER AND SUBMIT
COPY OF RECEIPT TO THE CONSULTANT.

COPY OF RECEIPT TO THE CONSULTANT.

PERMIT NO INTERRUPTIONS TO THE ELECTRIC POWER, FIRE ALARM,
COMMUNICATIONS, OR OTHER SIMILAR SERVICES IN THE EXISTING BUILDING
DURING NORMAL WORKING HOURS. ADVISE THE OWNER AND/OR TENANT IN
WRITING OF ANY INTENDED INTERRUPTIONS OUTSIDE OF THESE NORMAL HOURS.
INCLUDE TIME AND DURATION OF OUTAGE AND OBTAIN THE OWNER'S AND/OR
TENANT'S PERMISSION PRIOR TO SCHEDULED INTERRUPTIONS. THE OWNER OR
TENANT MAY CANCEL SUCH INTERRUPTIONS IN EMERGENCIES AT THE LAST
MINUTES WITHOUT PENALTY OR EXTRA COST. ASSUME FULL RESPONSIBILITY OR EXTRA COST.

ASSUME FULL RESPONSIBILITY FOR ANY DISRUPTION TO EXISTING SERVICES AND SYSTEMS. SHOULD ANY TEMPORARY CONNECTIONS BE REQUIRED TO MAINTAIN SERVICES DURING WORK IN THE EXISTING BUILDING, SUPPLY AND INSTALL ALL NECESSARY MATERIAL AND EQUIPMENT AND PROVIDE ALL LABOUR AT NO EXTRA COST. INCLUDE IN THE TENDER PRICE FOR REMOVAL OF SUCH TEMPORARY CONNECTIONS AT COMPLETION OF THE WORK.

ALL MATERIALS SUPPLIES SHALL BE NEW, OF THE QUANTITIES INDICATED AND BE BEST COMMERCIAL QUALITY OBTAINABLE FOR THE PURPOSE.

APPROVALS APPROVAL WILL BE REVIEWED ONLY DURING THE PRICING PERIOD. ALL SUBMISSIONS SHALL INCLUDE THE FOLLOWING INFORMATION: NAME AND IDENTIFICATION OF SPECIFIED ITEM, MANUFACTURER, BRAND NAME AND CATALOGUE NUMBER OF THE ALTERNATIVE ITEM PROPOSED AND DETAILED TECHNICAL INFORMATION AND CHARACTERISTICS OF THE ALTERNATE ITEM. SHOP DRAWINGS

SUBMIT SHOP DRAWINGS FOR ALL EQUIPMENT SPECIFIED ON THE DRAWINGS OR IN THE SPECIFICATIONS. ALL SHOW DRAWINGS SHALL CLEARLY INDICATE THE PROJECT NAME AND SHALL BEAR THE NAME OR IDENTIFICATION OF EACH PIECE OF EQUIPMENT. CONTRACTOR SHALL REVIEW THE SHOP DRAWINGS AND AFFIX REVIEW STAMP PRIOR TO SUBMISSION.
REVIEW OF THE SHOP DRAWINGS DOES NOT INFER ANY COMMENTS ON QUANTITIES LISTED ON THE DRAWINGS.
SUBMIT SHOP DRAWINGS FOR ALL LUMINAIRES, EMERGENCY BATTERIES UNITS AND REMOTE HEADS AND EXIT SIGNS. 8.2

AS-BUILT DRAWINGS MAINTAIN IN THE JOB SITE OFFICE, IN AN UP-TO-DATE CONDITION (1) COMPLETE SET OF THE ELECTRICAL CONTRACT DRAWINGS INCLUDING REVISION DRAWINGS, MARKED CLEARLY AND INDELIBLY IN RED, INDICATING "AS-BUILT" CONDITIONS WHERE SUCH CONDITIONS DEVIATE FROM THE ORIGINAL DIRECTIONS OF THE CONTRACT DOCUMENTS AND INDICATING FINAL INSTALLATION OF DEVICES AND REPAIRLY LIFE.

9.2 SUCH MARKINGS SHALL INCLUDE BUT SHALL NOT BE LIMITED TO THE FOLLOWING:

• ALL CHANGES IN CIRCUITING

• ROUTING OF CONDUITS

• NUMBER AND AWG OF CONDUCTORS (#10 AWG AND LARGER) IN RACEWAYS AND CABLES

• LOCATION OF JUNCTION BOXES AND PULLBOXES

• LOCATION OF ACCESS BANELS OCATION OF ACCESS PANELS OCATION OF ALL CONDUIT, INSTALLED EQUIPMENT, DEVICES AND CHANGES TO ELECTRICAL INSTALLATION RESULTING FROM

ADDENDA, CHANGE ORDERS, FIELD INSTRUCTIONS AND CONTRACTORS

EXACT LOCATION OF ALL SERVICES LEFT FOR FUTURE WORK WALL, CEILING AND FLOOR PENETRATIONS ANY AND ALL PENETRATIONS THROUGH WALLS, CEILINGS, AND FLOORS (FIRE, SMOKE, SOUND AS WELL AS ALL OTHER PENETRATIONS) MUST BE SEALED AFTER THE INSTALLATION OF ALL WIRING AND RACEWAYS TO MAINTAIN THE INTEGRITY OF THE SEPARATIONS IN A MANNER APPROVED BY THE CONSULTANT AND AUTHORITIES HAVING JURISDICTION. USE SEALING MATERIAL AS MANUFACTURED BY FIRE STOP SYSTEMS, 3M FIRE BARRIER SYSTEM AND APPROVED EQUAL.

PATCHING NEW STRUCTURES SHALL BE FINISHED TO MATCH THEIR ORIGINAL FINISH OR INTENDED FINISH. SEAL ALL SLOTS, CORE HOLES ETC. NOT BEING ALL HOLES REQUIRED THROUGH STRUCTURAL STEEL FABRICATIONS AND REINFORCING SHALL BE CARRIED OUT BY AUTHORIZED PERSONNEL AS APPROVED BY THE CONSULTANT AND STRUCTURAL ENGINEER TO THEIR COMPLETE SATISFACTION AND SHALL BE PAID FOR BY THE ELECTRICAL CONTRACTOR. 10.3 CONTRACTOR SHALL BE RESPONSIBLE TO X-RAY ALL PENETRATIONS PRIOR TO

IDENTIFICATION IDENTIFY ALL PIECES OF ELECTRICAL EQUIPMENT (INCLUDING EACH AND EVERY RECEPTACLE) OTHER THAN CONDUITS AND CONDUCTORS WITH ENGRAVED LAMINATED PLASTIC NAMEPLATES OR BROTHER P-TOUCH LABELS HAVING 3mm MINIMUM HEIGHT. BLACK CHARACTERS ON WHITE BACKGROUND FOR NORMAL POWER. ATTACH AL LAMACOID LABELS, UNLESS OTHERWISE DIRECTED, WITH SILICONE CEMENT. SILICONE CEMENT.
ALL JUNCTION AND PULLBOXES FOR CONDUITS, DUCTS AND OTHER RACEWAYS IN CONCEALED CEILING AND FLOOR SPACES SHALL PERMANENTLY MARKED USING A BLACK FELT PEN AS FOLLOWS: (WHERE CEILING SPACE IS PAINTED OUT, PUT MARKING ON THE INSIDE OF COVERPLATES).

FOR LIGHTING AND POWER SHOW THE COMPLETE CIRCUIT NUMBER OF ALL ENCLOSED CIRCUITS.

FOR ALL COMMUNICATIONS AND FIRE ALARM SHOW THE USAGE (I.E. "FIRE ALARM"; "TELEPHONE"). 12. MOUNTING HEIGHTS

12.1 IN AREAS WHERE THERE ARE NO CONFLICT WITH OTHER TRADES, MOUNTING HEIGHTS SPECIFIED HEREIN SHALL BE USED. MOUNTING ARE FROM FINISHED FLOOR LEVEL TO CENTRE LINE OF DEVICE OUTLET, UNLESS NOTED OTHERWISE.

• WALL RECEPTACLES: 300mm

• TELEPHONE OUTLETS: 300mm

• THERMOSTATS: 1520mm

• FIRE ALARM BELLS: 2300mm

• FIRE ALARM MANUAL PULL STATION: 1200mm

• END OF LINE RESISTOR: 1830mm

• LOCAL BRANCH CIRCUIT LIGHTING SWITCHES: 1200mm

• LIGHTING AND POWER PANELS: 1800mm FROM FLOOR TO TOP OF PANEL

### 26 05 19 BUILDING WIRE AND CABLE

UNLESS OTHERWISE DIRECTED, BUILDING WIRE AND CABLE SHALL BE OF COPPER CONDUCTORS.
USE NO WIRE NO SMALLER THAN #12AWG UNLESS OTHERWISE DIRECTED.
EXCEPT WHERE OTHERWISE DIRECTED OR REQUIRED BY CODE OR OTHER
APPLICABLE REGULATIONS BUILDING WIRE AND CABLE INSULATION SHALL BE
TYPE RW90, CROSS-LINK POLYETHYLENE INSULATED FOR 600V AND RATED NOT

LLO THANGO BES. S.: ILL INTERIOR BRANCH CIRCUIT WIRING SHALL USE ELECTRICAL METALLIC TUBING EMT). EXTERIOR INSTALLATIONS SHALL BE GALVANIZED RIGID STEEL OR RIGID ALL FIRE ALARM CABLING SHALL BE RUN IN EMT CONDUIT.
ARMOURED CABLE MAY BE USED FOR THE FOLLOWING:
DROPS TO INDIVIDUAL LUMINAIRES AND SHALL MAXIMUM LENGTH OF 1.5m. DAISY
CHAINING OF LUMINAIRES NOT ALLOWED.
FINAL CONNECTIONS TO TRANSFORMERS, MOTORS, AND OTHER VIBRATING

EQUIPMENT.

CONDUCTORS FOR LIGHTING AND OTHER BRANCH CIRCUITS SHALL HAVE AMPACITY NOT LESS THAN THE RATING OF THE OVERCURRENT DEVICE PROTECTING THE BRANCH CIRCUIT AND SHALL BE SIZED FOR A MAXIMUM VOLTAGE DROP OF 3% FROM THE PANELBOARD TO THE LAST OUTLET OF THE CIRCUIT. THE LENGTH OF THE BRANCH CIRCUIT TO BE USED IN THE DETERMINATION OF THE REQUIRED WIRE SIZE SHALL BE THE TOTAL DISTANCE FROM THE ASSOCIATED PANELBOARD TO THE LAST DEVICE IN THE CIRCUIT. IN NO CASE SHALL THE WIRE SIZES BE LESS THAN THAT INDICATED BELOW:

120V, 1PHASE, 15A CIRCUIT:

0 - 25m: #12AWG MIN.

25 - 40m: #10AWG MIN.

25 – 40ffl: #10AWG MIN.
OVER 40m: #8AWG MIN.
18.2 120V, 1PHASE, 20A CIRCUIT:
0 – 20m: #12AWG MIN.
20 – 30m: #10AWG MIN.
OVER 30m: #8 AWG MIN.

# 26 05 26 GROUNDING AND BONDING

SUPPLY AND INSTALL AL GROUNDING TO CONFIRM WITH THE ONTARIC SUPPLY AND INSTALL AL GROUNDING TO CONFIRM WITH THE ONTARIO ELECTRICAL SAFETY CODE AND INSTRUCTION OF THE INSPECTION AUTHORITY WITH FURTHER REQUIREMENTS AS NOTED HEREIN OR ON DRAWINGS. PROVIDE SEPARATE AND PROPERLY SIZE GROUND WIRE AND FITTINGS FOR ALL FLEXIBLE CONDUIT CONNECTIONS. EACH RECEPTACLE AND LIGHTING SWITCH SHALL HAVE A GROUNDING CONDUCTOR INSTALLED BETWEEN ITS GROUNDED OUTLET BOX AND THE GROUNDING TERMINAL ON THE RECEPTACLE PROVIDE INDIVIDUAL #6 AWG GROUNDING CONNECTIONS TO ALL COMMUNICATIONS EQUIPMENT AND COMMUNICATION RACKS AND/OR CABINETS.

### 26 05 29 ELECTRICAL SUPPORTING DEVICES

ALL DEVICES, OUTLET BOXES AND RACEWAYS SHALL BE SOLIDLY FASTENED TO BUILDING IN A SECURE AND SOLID MANNER. RACEWAYS NOT EXPOSED TO VIEW SHALL BE FASTENED TO BUILDING STRUCTURE.

### 26 05 33 CONDUITS

ALL INTERIOR BRANCH CIRCUIT WIRING SHALL BE IN ELECTRICAL METALLIC TUBING (EMT). ALL FEEDERS SHALL BE IN RIGID GALVANIZED STEEL ALL FIRE ALARM CABLING SHALL BE RUN IN EMT CONDUIT.
CUT CONDUIT SQUARE USING A SAW OR PIPE CUTTER; DEBURR CUT ENDS. USE CONDUIT HUBS OR SEALING LOCKNUTS FOR FASTENING CONDUITS TO CAST BOXES AND FOR FASTENING CONDUITS TO SHEET METAL BOXES IN DAMP OR WET LOCATIONS USE 90 DEG BENDS TO MAKE CHANGES IN DIRECTION. CONDUIT BODIES ARE NOT AVOID MOISTURE TRAPS WHERE POSSIBLE; WHERE UNAVOIDABLE, PROVIDE

JUNCTION BOX WITH DRAIN FITTING AT CONDUIT LOW POINT. USE SUITABLE CONDUIT CAPS TO PROTECT INSTALLED CONDUIT AGAINST ENTRANCE OF DIRT AND MOISTURE.
PROVIDE #12 AWG INSULATED CONDUCTOR OR SUITABLE PULL STRING IN EMPTY CONDUITS, EXCEPT SLEEVES AND NIPPLES. INSTALL EXPANSION DEFLECTION JOINTS WHERE CONDUIT CROSSES BUILDING CONCEAL CONDUITS IN ALL AREAS EXCEPT IN MECHANICAL AND ELECTRICAL

34. ALL CONDUITS SHALL BE INSTALLED PARALLEL TO BUILDING LINES AND BE SOLIDLY SUPPORTED FROM BUILDING STRUCTURE (I.E. SUPPORT FROM DUCTWORK, CEILING SYSTEM, ETC. IS NOT PERMITTED).

### 26 05 34 BOXES

UNLESS OTHERWISE NOTED OR SPECIFIED HEREIN, INSTALL ALL OUTLETS FLUSH UNLESS OTHERWISE DIRECTED, ALL OUTLET BOXES SHALL BE ONE-PIECE FORMED, GALVANIZED, CODE GAUGE STEEL. PLASTIC OR PVC TYPE BOXES ARE COORDINATE WORK CAREFULLY WITH OTHER TRADES TO PROVIDE EASY ACCESS

TO ALL JUNCTION AND PULL BOXES.

38. ALL OUTLET, JUNCTION AND PULLBOXES SHALL BE COMPLETE WITH COVER.

### 26 24 16 BRANCH CIRCUIT PANELBOARDS

ACCEPTABLE MANUFACTURERS: SIEMENS SCHNEIDER/SQUARE D,

EATON. SUBSTITUTIONS: NOT PERMITTED CSA C22.2 NO.29 CIRCUIT BREAKER TYPE, LIGHTING AND APPLIANCE BRANCH CIRCUIT PANELBOARD. PANFI BOARD BUS: COPPER WITH RATINGS. PROVIDE COPPER GROUND BUS IN

PANELBOARD. MINIMUM INTEGRATED SHORT CIRCUIT RATINGS AS INDICATED ON THE ELECTRICAL SINGLE LINE DIAGRAM. RATINGS SHALL BE BASED ON A FULLY MOULDED CASE CIRCUIT BREAKERS: NEMA AB I, BOLT-ON TYPE, THERMAL MAGNETIC TRIP CIRCUIT BREAKER, WITH COMMON TRIP HANDLE FOR ALL POLES, LISTED AS TYPE SWD FOR LIGHTING CIRCUITS, TYPE HACR FOR AIR CONDITIONING EQUIPMENT CIRCUITS, CLASS A GROUND FAULT INTERRUPTER CIRCUIT BREAKERS WHERE SCHEDULED, DO NOT USE TANDEM CIRCUIT BREAKERS.

INSTALL PANELBOARD TO CSA C22.1. HEIGHT: 1800mm TO TOP OF PANELBOARD; INSTALL PANELBOARD TALLER THAN 1800mm WITH BOTTOM NO MORE THAN 100mm ABOVE FLOOR. 46. PROVIDE ENGRAVED PLASTIC NAMEPLATES.

ENCLOSURE: TYPE 1, UNLESS NOTED OTHERWISE.

### 26 27 26 WIRING DEVICES

47. RECEPTACLES:

47.1 DUPLEX RECEPTACLES SHALL BE SPECIFICATION GRADE, CSA 5-20R UNLESS NOTED OTHERWISE

MANUFACTURES: HUBBELL, LEVITON, PASS \$ SEYMOUR OTHER RECEPTACLE TYPES AS INDICATED ON PLANS 47.4 ALL RECEPTACLES SHALL BE OF ONE MANUFACTURER

48 LIGHTING SWITCHES:

48.1 ALL LINE VOLTAGE SWITCHES SHALL SPECIFICATION GRADE, DECORA STYLE, 20A, SINGLE POLE OR AS INDICATED ON DRAWINGS.

48.2 MANUFACTURES: HUBBELL, LEVITON, PASS \$ SEYMOUR 48.3 ALL DEVICES SHALL BE OF ONE MANUFACTURER

### **26 51 13 LUMINAIRES**

LUMINAIRES ARE INDICATED IN THE LUMINAIRE SCHEDULE BY MEANS OF TYPE LETTERS WHICH CORRESPOND TO SIMILAR LETTERS ON PLANS. 50. FOR EXACT LOCATION OF CEILING MOUNTED LUMINAIRES, REFER TO

ARCHITECTURAL CEILING PLAN. PROVIDE LUMINAIRE TYPES AS INDICATED ON LIGHTING SCHEDULE. ALTERNATES MUST BE REVIEWED AND APPROVED PRIOR TO SHOP DRAWING STAGE.

### **26 53 50 EMERGENCY LIGHTING UNITS**

52. EMERGENCY LIGHTING UNITS SHALL BE FOR OPERATION AT 120 OR 347VAC C/W WITH SOLID STATE CHARGER, STATUS INDICATORS, SEALED MAINTENANCE-FREE LEAD ACID 24VDC BATTERIES. PROVIDE PRORATED WARRANTY. BATTERY

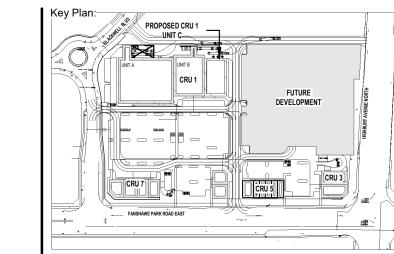
WATTAGE IS AS INDICATED ON DRAWINGS. EMERGENCY LIGHTING HEADS, ADJUSTABLE LED TYPE ACCEPTABLE MANUFACTURERS: BEGHELLI, READY-LITE, LUMACELL, OR PRE-

APPROVED EQUIVALENT. BATTERY UNITS SHALL BE DIRECT CONNECTED TO LOCAL AREA LIGHTING CIRCUIT FOR AC BRANCH CIRCUIT FAILURE PROTECTION AS REQUIRED BY CODE.

### **26 53 00 EXIT SIGNS**

56. ALL EXIT SIGNS SHALL CONFORM TO CURRENT CSA C860 STANDARDS. ALL WIRING SHALL CONFORM TO ONTARIO ELECTRICAL SAFETY CODE 46-400.

EXIT SIGNS SHALL NOT BE SUPPORTED ON T-BAR TILES OR DRYWALL. THEY SHALL BE SUPPORTED FROM CEILING SUPPORT SYSTEM (I.E. T-BAR GRID). PROVIDE HORIZONTAL BACK SUPPORT SYSTEM AS REQUIRED.



North Arrow:





CS@CREATIVESTR.C

General Notes:

Site Plan:

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CONTRACTOR RESPONSIBILITY FOR SYSTEMS AFFECTED.

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Date

ISSUES/REVISION TABLE

1300 FANSHAWE PARK

ROAD. EAST. - CRU #1 UNIT 1300 FANSHAWE PARK ROAD. EAST. LONDON, ON.

Drawing Title:

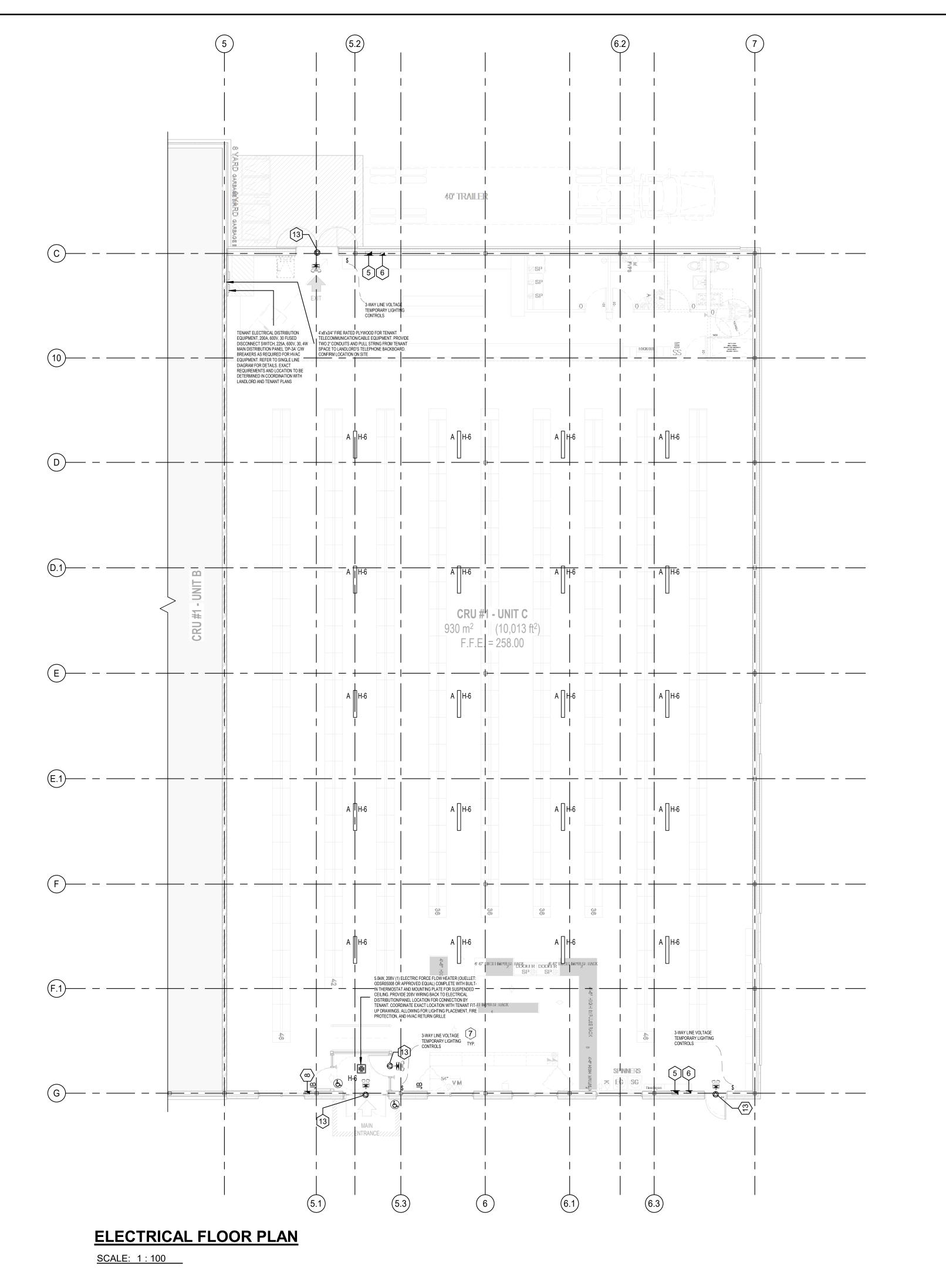
GENERAL ELECTRICAL **NOTES I** 

Scale: AS INDICATED Drawn By: D.K. Plot Date: APR. 02-2024 Checked By: W.A.

Project Date: JAN 2024

Project No: 2023-102

Drawing No:



ELECTRICAL KEYNOTES (DENOTED BY):

1. LOCATION OF THE MAIN DISCONNECT SWITCH

2. LOCATION OF SPLITTER, DISCONNECT AND METERS

3. LOCATION OF HOUSE PANEL 20"W x 6"D x 48"H.

4. LOCATION OF FIRE RATED PLYWOOD BACKBOARD FOR COMMUNICATION DEMARC. PROVIDE #6 BOND BACK TO BUILDING GROUND. TYPICAL SIZE: 48"L X 96"H X 3/4"T. PROVIDE (2) DEDICATED RECEPTACLES TO BE FED FROM HOUSE PANEL.

5. LOCATION OF FUTURE TENANT ELECTRICAL PANEL. REFER TO DRAWING E300 FOR MORE DETAIL. COORDINATE PANEL LOCATION WITH TENANT'S DRAWINGS PRIOR TO ROUGH-IN.

6. JUNCTION BOX FOR TENANTS COMMUNICATION SERVICES. CONFIRM EXACT MOUNTING & LOCATION ON SITE. RUN 2" CONDUIT FROM JUNCTION BOX TO COMMUNICATION BACKBOARD WITHIN MECHANICAL ROOM.

7. TEMPORARY LIGHTING TO BE FED FROM HOUSE PANEL. TYPICAL AS INDICATED. FINAL LIGHTING LAYOUT BY TENANT.

8. PROVIDE ROUGH-IN FOR TENANT SIGNAGE TO BE LOCATED AT HIGH LEVEL. PROVIDE 3/4" CONDUIT C/W PULL STRING TO TENANT PANEL LOCATION (TYPICAL).

9. LOCATION OF EXTERIOR LIGHTING CONTROLS.

10. EXHAUST FAN EF-1, 120V 1PH. ELECTRICAL CONTRACTOR TO PROVIDE AND INSTALL DISCONNECTING MEANS AT UNIT.

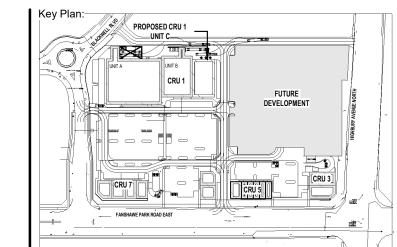
11. MECH/ELEC ROOM. REFER TO DRAWING E300 FOR DISTRIBUTION DIAGRAM DETAILS.

12. 3.0kW ELECTRIC HEATER EH-1. REFER TO DRAWING M002 FOR ELECTRICAL HEATER SCHEDULE.

13. AUTOMATIC DOOR OPERATOR LOCATION. PROVIDE 120V WIRING AND CONNECTIONS. SUPPLY LOW VOLTAGE CONDUIT AND CONDUCTORS. CONFIRM REQUIREMENTS WITH SUPPLIER. CONFIRM ALL LOCATIONS WITH G.C. AND DOOR OPERATOR INSTALLER PRIOR TO ROUGH-IN.

	LIGHTING FIXTURE SCHEDULE							
TY	PE .	DESCRIPTION						
	TYPE 'A'	4' LED FIXTURE, LITHONIA LIGHTING, CAT# ZL1N L48 ASR 3000LM L/LENS MVOLT 35K 80CRI WH						

SEE THE SPECIFICATIONS ON SHEET E002 - SECTION 26 53 50 EMERGENCY LIGHTING UNITS FOR EMERGENCY LIGHTING BATTERY PACK SPECIFICATIONS. COORDINATE ALL PANEL FINAL LOCATIONS WITH OWNER REPRESENTATIVE.



Site Plan: North Arrow:



General Notes:

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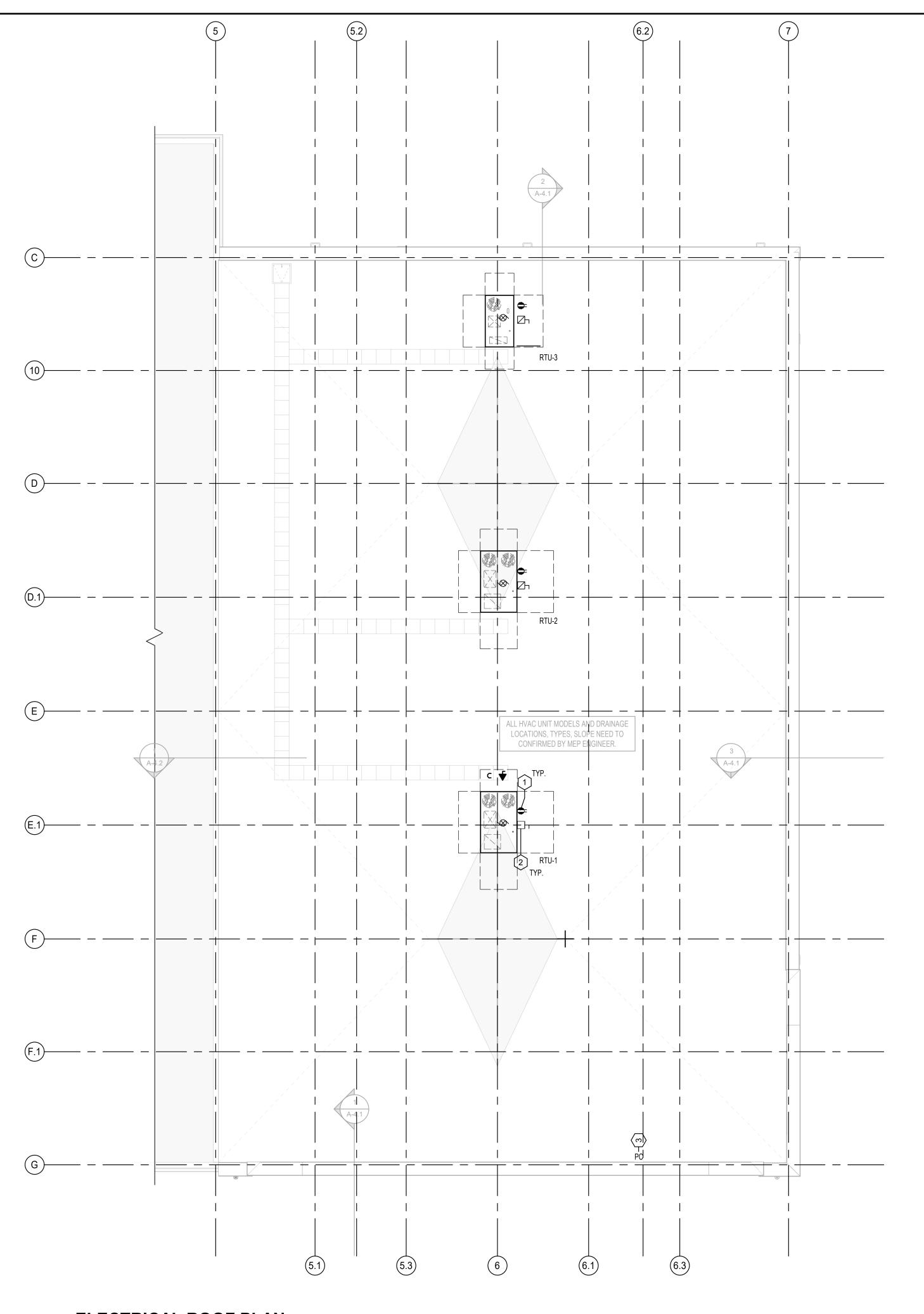
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ELECTRICAL LAYOUT -FLOOR PLAN

Scale: AS INDICATED Drawn By: D.K. Checked By: W.A. Plot Date: APR. 02-2024

Project Date: JAN 2024

Project No: 2023-102



# **ELECTRICAL ROOF PLAN**

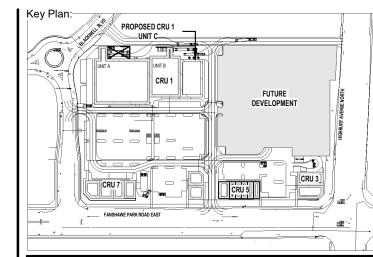
SCALE: 1:100

### **GENERAL NOTES:**

- ALLOW ADEQUATE SPACING AROUND ALL CONDUIT & CABLE PENETRATIONS FOR PROPER FIRE STOPPING. CONSULT WITH G.C. ON SITE. ELECTRICAL CONTRACTOR TO ENSURE ARMOURED & COMMUNICATION CABLES ARE NOT RUN IN CONTACT WITH CPVC SPRINKLER OR WATER PIPING.
- ELECTRICAL CONTRACTOR TO ENSURE ARMOURED & COMMUNICATION CABLES ARE NOT RUN IN CONTACT WITH CPVC SPRINKLER OR WATER PIPING.
- ENSURE EXIT LIGHTS ARE VISIBLE BELOW ALL PIPING AND OBSTRUCTIONS.
- NO SERVICES ARE TO BE INSTALLED IN TRANSFORMER VAULTS, ELEVATOR MACHINE ROOMS OR EXIT STAIRWELLS UNLESS THEY SERVE THE ROOM THEY ARE INSTALLED IN, OR ARE INSTALLED WITHIN A FIRE RATED BULKHEAD.

### ELECTRICAL KEYNOTES (DENOTED BY):

- 1. ALL RECEPTACLES ON THE ROOF ARE TO BE MOUNTED AT 36" ABOVE THE TOP OF THE ROOFING MATERIAL AND PROTECTED FROM MECHANICAL DAMAGE. ENSURE GFCI' PROTECTION (TYPICAL).
- 2. ROOT TOP UNITS PROVIDED BY MECHANICAL. ELECTRICAL CONTRACTOR TO INSTALL AND PROVIDE WEATHERPROOF NON-FUSED DISCONNECTING MEANS AT UNIT. RUN FEEDER BACK TO ELECTRICAL SERVICE LOCATION FOR THAT TENANT. REFER TO DISTRIBUTION DIAGRAM ON DRAWING E300 (TYPICAL).
- 3. LOCATION OF EXTERIOR LIGHTING PHOTOCELL.



North Arrow:





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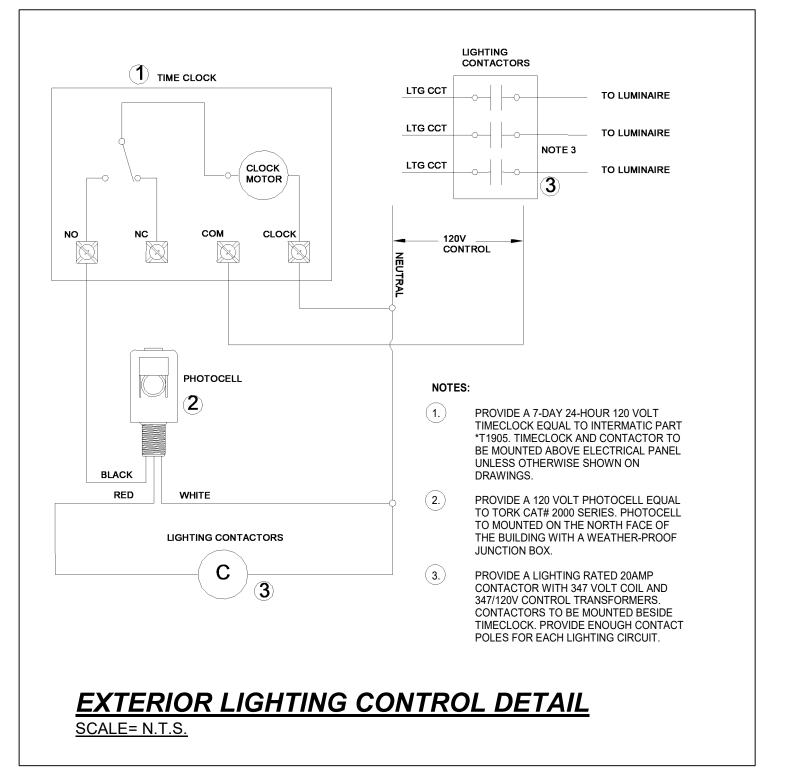
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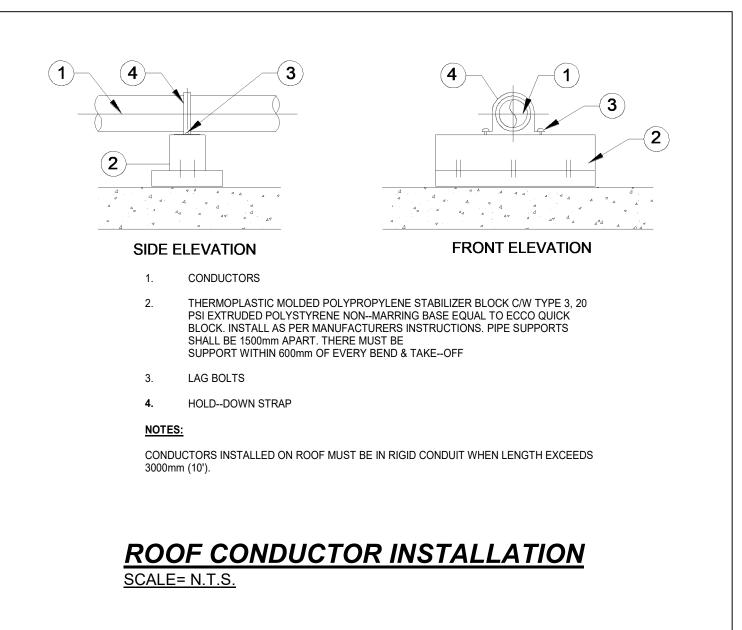
ELECTRICAL LAYOUT -**ROOF PLAN** 

Scale: AS INDICATED Drawn By: D.K. Checked By: W.A. Plot Date: APR. 02-2024 Project Date: JAN 2024

Project No: 2023-102 Drawing No:

LOAD CALCULATION - UNIT C							
Area (sq.m)	930						
Base Load (30 W/sq.m):	27,900						
HVAC (W):	18,000						
Misc. (W):	10,000						
Total (W):	56,830						
Tenant Service:	200A, 347/600V						
	,						
LOAD CALCULATI	,						
LOAD CALCULATION Area (sq.m)	,						
	ON - TOTAL						
Area (sq.m)	<b>ON - TOTAL</b> 930						
Area (sq.m) Base Load (30 W/sq.m):	ON - TOTAL 930 27,900						
Area (sq.m) Base Load (30 W/sq.m): HVAC (W):	ON - TOTAL 930 27,900 18,000						





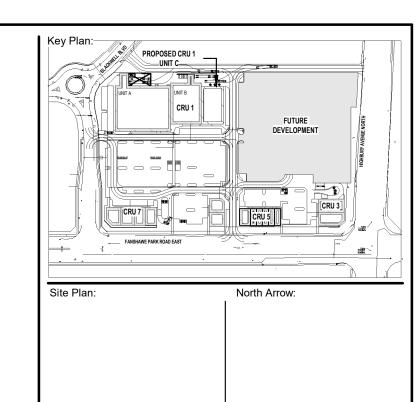
PANEL: PP-2H

**VOLTAGE**: 120/208

PAHASE: 3 PHASE, 4 WIRE MAINS: 100A										
LOCATION: ELEC RM.										
DESCRIPTION	WIRE SIZE	VA	BREAK	ER	Ø	BR	REAKER	VA	WIRE SIZE	DESCRIPTION
EXTERIOR LIGHT			20A	1	А	2	20A			EXTERIOR LIGHT
EXTERIOR LIGHT			20A	3	В	4	20A			EXTERIOR LIGHT
EXTERIOR LIGHT			20A	5	С	6	20A			INTERIOR LIGHT
PDO			20A	7	Α	8	20A			INTERIOR LIGHT
INTERIOR LIGHTS			20A	9	В	10				
EF-1			20A	11	С	12				
HEATER			20A	13	А	14				
HVAC RECEP			20A	15	В	16				
HVAC RECEP			20A	17	С	18				
				19	Α	20				
				21	В	22	20A			SPARE
				23	С	24	20A			SPARE

HOME PANEL SCHEDULE

**MOUNTING**: SURFACE





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3 APR 02, 2024 ISSUED FOR TENDER
No. Date Revision

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DSITRIBUTION DIAGRAM AND ELECTRICAL DETAILS

Drawn By: D.K. Scale: AS INDICATED

Checked By: W.A. Plot Date: APR. 02-2024

Project Date: JAN 2024

Project No: 2023-102

**E200** 

E300