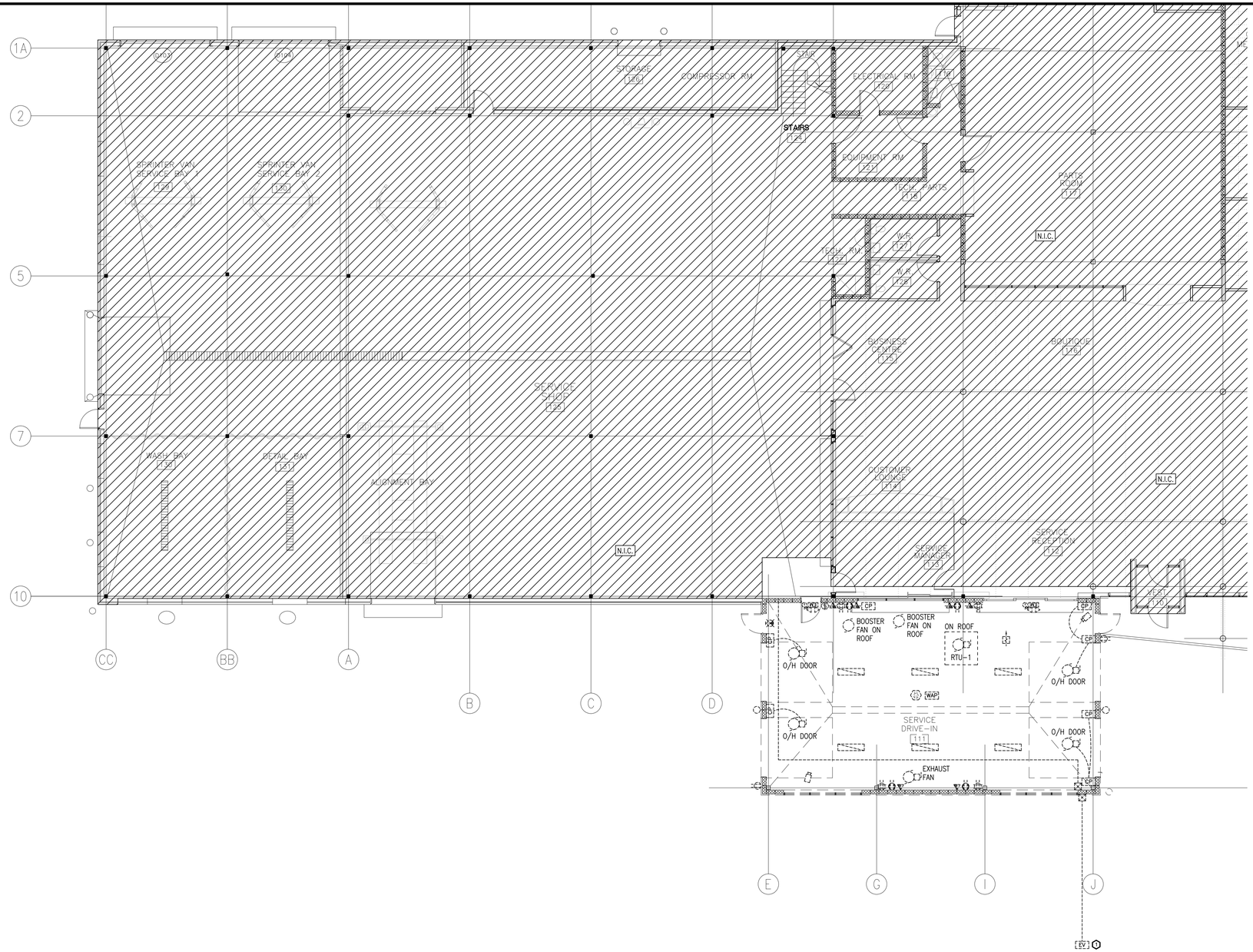

DRAWING NOTES

1. DISCONNECT PEDESTAL EV CAR CHARGER AND REMOVE FEEDER BACK TO SERVICE SHOP 125. REFER TO E-3 FOR NEW LOCATION.

REVISION No.	DESCRIPTION	DATE
3.	ISSUED FOR TENDER	JUN 03/25
2.	ISSUED FOR BUILDING PERMIT	APR 21/25
1.	ISSUED FOR 66% REVIEW	MAR 28/25

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PROJECT:
MERCEDEZ-BENZ
STAR MOTORS OF OTTAWA
400 WEST HUNT CLUB RD,
OTTAWA, ONTARIO

DRAWING:
ELECTRICAL:
DEMOLITION

DATE: MARCH 2025
DESIGNED BY: C.J.
DRAWN BY: C.J.
CHECKED BY: B.T.
SCALE: 1:100

No. DWGS. 6
PROJECT No. 24094
DRAWING No. ED-1

ELECTRICAL DRAWING LIST

DWG. #	DESCRIPTION
ED-1	ELECTRICAL: DEMOLITION
E-1	ELECTRICAL: LEGEND AND DRAWING LIST
E-2	ELECTRICAL: LIGHTING
E-3	ELECTRICAL: POWER AND SYSTEMS
E-4	ELECTRICAL: DETAILS
E-5	ELECTRICAL: SPECIFICATIONS

REMOVE	EXISTING TO REMAIN	NEW AND/OR RELOCATED	ELECTRICAL LEGEND
		A	LINEAR LED FIXTURE. LETTER DENOTES TYPE.
			WALL MOUNTED FIXTURE, LETTER DENOTES TYPE.
		C	LED CANOPY FIXTURE. LETTER DENOTES TYPE.
		D	LED PENDANT FIXTURE. LETTER DENOTES TYPE.
			20A, 1P, 347V LIGHT SWITCH.
			20A, 1P, 120V LIGHT SWITCH.
			LOW VOLTAGE DUAL TECHNOLOGY OCCUPANCY SENSOR, CEILING MOUNTED.
			PRESSURE SWITCH.
			FLOW SWITCH.
			SUPERVISED VALVE.
			EXIT LIGHT, WALL MOUNTED, C/W DIRECTIONAL ARROWS AS NOTED.
			EXIT LIGHT, CEILING MOUNTED, C/W DIRECTIONAL ARROWS AS NOTED.
			EMERGENCY BATTERY UNIT WITH TWO (2) INTEGRAL HEADS AS SHOWN.
			EMERGENCY TWIN REMOTE HEADS.
			15A, 120V, DUPLEX RECEPTACLE. LINE ACROSS INDICATES ELEVATED HEIGHT.
			QUADPLEX, 15A, 120V, TWO (2) DUPLEX RECEPTACLES UNDER COMMON COVER PLATE.
			15A, 120V, ISOLATED GROUND DUPLEX RECEPTACLE (ORANGE).
			15A, 120V, CEILING MOUNTED DUPLEX RECEPTACLE.
			HARD WIRED CONNECTION TO EQUIPMENT.
			JUNCTION BOX.
			MOTOR CONNECTION.
			MOTOR RATED SWITCH.
			SPEED CONTROL.
			MAGNETIC STARTER. (C DENOTES COMBINATION STARTER).
			DISCONNECT SWITCH.
			SURFACE MOUNTED ELECTRICAL PANEL.
			UNIT HEATER, CEILING MOUNTED.
CP	CP	CP	CONTROL PANEL (SUPPLIED BY MECHANICAL, WIRED AND INSTALLED BY ELECTRICAL).
HTC	HTC	HTC	HEAT TRACING CONTROLLER.
RV HTC	HTC	HTC	HEAT TRACING CABLE.
			COMBINATION TELEPHONE/DATA OUTLET. LINE ACROSS INDICATES ELEVATED HEIGHT.
WAP	WAP	WAP	WIRELESS ACCESS POINT (BACK BOX ONLY, DEVICES AND WIRING BY COMMUNICATION CONTRACTOR).
			CEILING MOUNTED CAMERA. (CONDUIT/BACK BOX ONLY, DEVICES AND WIRING BY OTHERS).
EV	EV	EV	ELECTRIC VEHICLE CHARGER.

ABBREVIATIONS:

GFI	– GROUND FAULT INTERRUPTER	C	– CEILING MOUNTED
WP	– WEATHER PROOF	N.T.S.	– NOT TO SCALE
AFF	– ABOVE FINISHED FLOOR	N.I.C.	– NOT IN CONTRACT
U.O.N.	– UNLESS OTHERWISE NOTED	U/S	– UNDERSIDE
WG	– WIRE GUARD	C/W	– COMPLETE WITH
IG	– ISOLATED GROUND CONDUCTOR	RL	– DENOTES EXISTING ITEM TO BE RELOCATED IN NEW POSITION

RL

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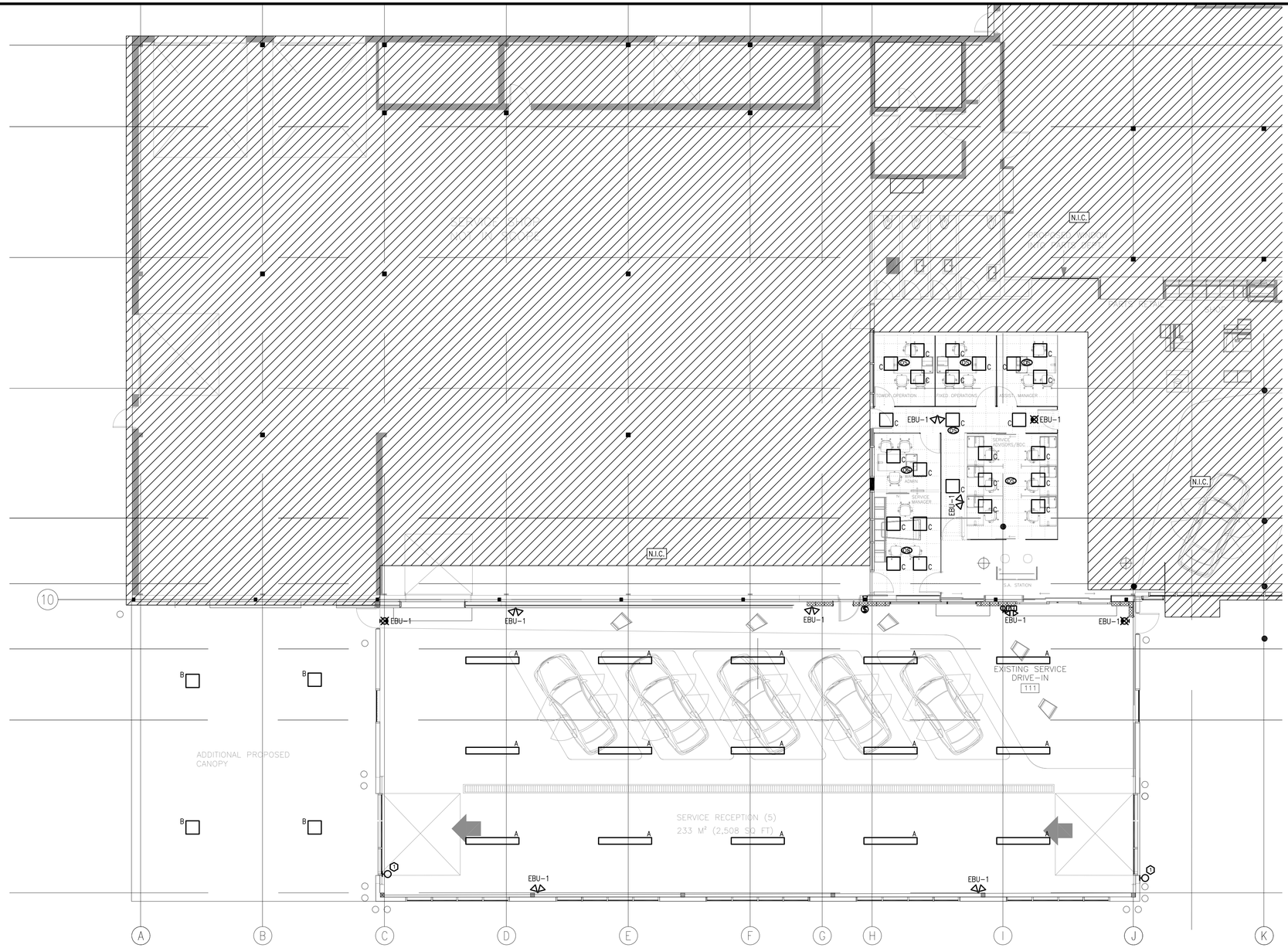
400 WEST HUNT CLUB RD,
OTTAWA, ONTARIO

DRAWING:
ELECTRICAL:
LEGEND AND DRAWING LIST

DATE: MARCH 2025
DESIGNED BY: C.J.
DRAWN BY: C.J.
CHECKED BY: B.T.
SCALE: N.T.S.

No. DWGS. 6
PROJECT No. 24094
DRAWING No. E-1



GENERAL NOTES

1. CONNECT ALL NEW TYPE "B" FIXTURES TO EXISTING BUILDING PHOTOCELL AND TIME CLOCK LOCATED IN ELECTRICAL ROOM 120.

DRAWING NOTES

1. RED/GREEN LIGHT ENTRY LIGHTS, PROVIDED BY OTHERS.

LIGHTING FIXTURE SCHEDULE

TYPE	DESCRIPTION	LAMPS	LED DIMMING DRIVER	DIMMING RANGE	VOLT	MOUNTING	REMARKS
A	2440mm LINEAR LED FIXTURE. EQUAL TO CREE "LS8" SERIES.	64W LED	————	———	347V	CHAIN SUSPENDED	– 4000'K, FIXTURE HEIGHT OF 80mm, 8,000 LUMENS – WHITE FINISH, 117 LUMENS/W, L70 > 100,000 HOURS – 90+ CRI, ROUND ACRYLIC LENS
B	382mm X 382mm CANOPY LED FIXTURE, EQUAL TO CREE "CPY250" SERIES.	86W LED	————	———	347	RECESSED CANOPY	– 4000'K, FIXTURE HEIGHT OF 50mm, 13,000 LUMENS – WHITE FINISH, 70 CRI, FLAT LENS, WET LOCATION LISTED
C	610mm x 610mm SHALLOW PLENUM LED FIXTURE. CSC LED "PREMIUM PANEL LIGHT" SERIES.	30W LED	————	———	120V	RECESSED T-BAR	– 5000'K, FIXTURE HEIGHT OF 48mm, 4028 LUMENS – WHITE FINISH, 127 LUMENS/W, 50,000 HOURS – 83 CRI, SMOOTH ACRYLIC DIFFUSER, SUPPLIED BY OWNER

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STAR MOTORS OF OTTAWA
400 WEST HUNT CLUB RD,
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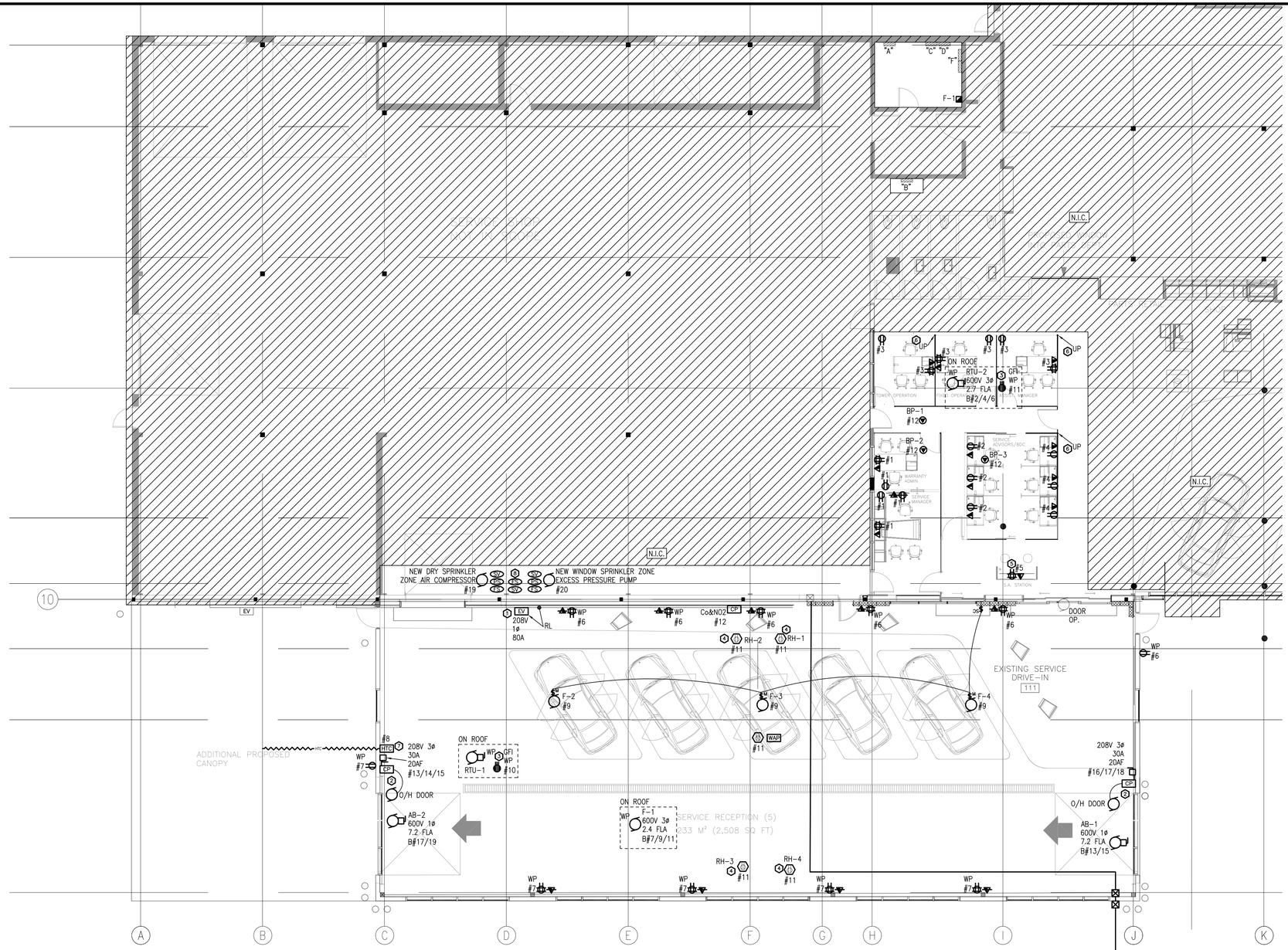
DRAWING:
ELECTRICAL:
LIGHTING

DATE: MARCH 2025
DESIGNED BY: C.J.
DRAWN BY: C.J.
CHECKED BY: B.T.
SCALE: 1:100

No. DWGS. 6
PROJECT No. 24094
DRAWING No. E-2



GENERAL NOTES

1. ALL OVERHEAD DOOR MOTORS ARE SUPPLIED BY OWNER, INSTALLED BY CONTRACTOR.
2. ALL AREAS WHERE VEHICLES ARE SERVICED TO BE CONSIDERED HAZARDOUS ZONE 2. INSTALL DEVICES AS PER SECTION 18 AND 20 OF OESC.
3. 120V CIRCUITING IS SHOWN FOR GROUPING PURPOSES ONLY. RE-USE CIRCUITS FREED UP DURING DEMOLITION U.O.N.

DRAWING NOTES

1. COORDINATE EXACT LOCATION OF RELOCATED EV CHARGER WITH CLIENT AND CIVIL PLAN.
2. OVERHEAD DOORS AND CONTROLS ARE SUPPLIED BY OWNER, INSTALLED BY ELECTRICAL. REFER TO CLIENT SUPPLIED RYTEC CORPORATION "ELECTRICAL SCOPE OF WORK" DOCUMENTS.
3. PROVIDE WEATHERPROOF MAINTENANCE RECEPTACLE 750mm ABOVE FINISHED ROOF AS PER OESC 26-704.
4. COORDINATE EXACT LOCATION OF RADIANT TUBE HEATER RECEPTACLES ON SITE.
5. LOCATE DEVICES WITHIN MILLWORK. RE-USE AND EXTEND EXISTING SERVICE DESK TRENCH TO SUIT.
6. UTILIZE PARTITION BASE CHANNEL TO EXTEND WIRING TO DEVICES SHOWN.
7. PROVIDE HEAT TRACING CABLE FOR STORM WATER PIPING.
8. DISCONNECT AND RECONNECT EXISTING SPRINKLER ZONE FLOW SWITCH. PROVIDE CONNECTIONS FOR NEW ZONES AND CONNECT TO EXISTING KODIAK SECURITY MONITORING SYSTEM. DEVICES SUPPLIED BY OTHERS, WIRED BY ELECTRICAL. COORDINATE WITH MECHANICAL AND SECURITY CONTRACTORS.

PANEL **B** (EXISTING – SIEMENS)

42 CIRCUITS **347/600**V **3**PH **4**W **250** MAINS **SURFACE** MOUNTED

	DESCRIPTION	BR	CIR	A	B	C	CIR	BR	DESCRIPTION	
	EXISTING	15	1	●			2	15	RTU-2	*
			3		●		4			
		3P	5			●	6	3P		
*	F-1	15	7	●			8	20	SPARE	
			9		●		10	20	SPARE	
		3P	11			●	12	20	SPARE	
*	AB-1	15	13	●			14	20	SPARE	
		2P	15		●		16	20	SPARE	
*	AB-2	15	17			●	18		SPACE	
		2P	19	●			20	20	SPARE	
	SPACE		21		●		22	20	SPARE	
	SPACE		23			●	24	15	EXISTING	
	SPACE		25	●			26	15	EXISTING	
	SPACE		27		●		28	20	EXISTING	
	SPACE		29			●	30	15	EXISTING	
	SPACE		31	●			32	15	EXISTING	
	SPACE		33		●		34	15	EXISTING	
	SPACE		35			●	36	15	EXISTING	
	SPACE		37	●			38		SPACE	
	SPACE		39		●		40		SPACE	
	SPACE		41			●	42		SPACE	

* – DENOTES PROVIDE NEW BREAKER

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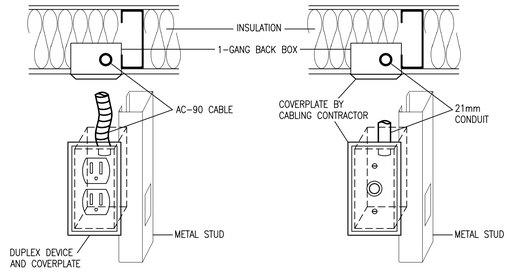
DRAWING:
ELECTRICAL:
POWER AND SYSTEMS

DATE: MARCH 2025
DESIGNED BY: C.J.
DRAWN BY: C.J.
CHECKED BY: B.T.
SCALE: 1:100

No. DWGS. 6
PROJECT No. 24094
DRAWING No. E-3

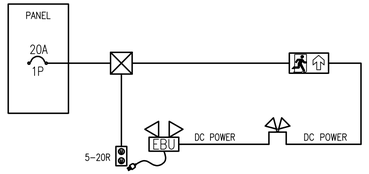


DENOTED BY: ⓓ▼ ON PLANS.

NOTE: PROVIDE DATA CONDUIT FROM BACK BOX TO ACCESSIBLE CEILING SPACE OUTSIDE OF ROOM UNLESS OTHERWISE NOTED.

1 / E-4 DUPLEX RECEPTACLE AND DATA OUTLETS

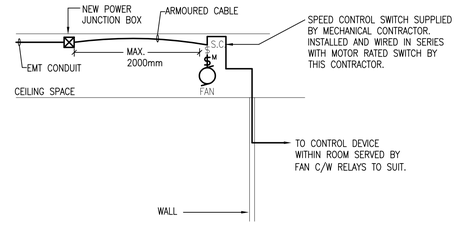
N.T.S.



1. LOAD NOT TO EXCEED 80% OF THE 20 AMP BREAKER.
2. BREAKER TO BE EQUIPPED WITH LOCK-ON DEVICE.

2 / E-4 WIRING OF EBU, EXIT & NIGHT LIGHT FIXTURE

N.T.S.



NOTE: FAN SUPPLIED AND INSTALLED BY MECHANICAL CONTRACTOR. ALL FINAL LINE VOLTAGE CONNECTIONS BY ELECTRICAL CONTRACTOR.

3 / E-4 FAN CONNECTION DETAIL

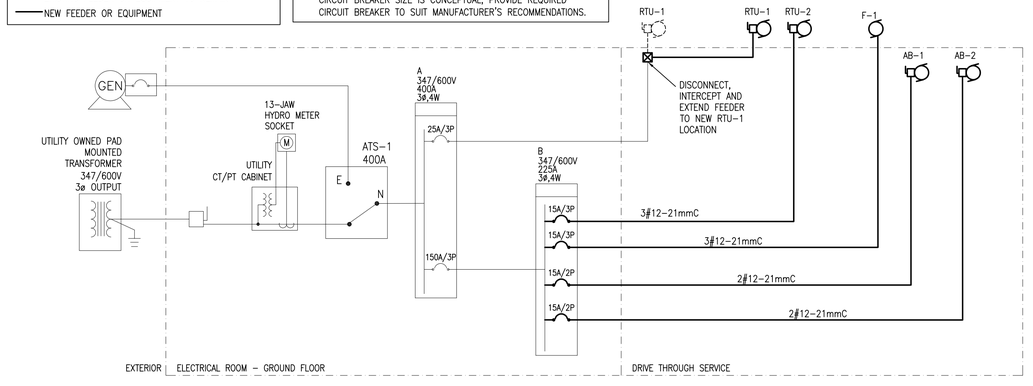
N.T.S.

SINGLE LINE LINETYPE LEGEND

- EXISTING FEEDER OR EQUIPMENT TO BE REMOVED
- EXISTING FEEDER OR EQUIPMENT TO REMAIN
- NEW FEEDER OR EQUIPMENT

DRAWING NOTES

① PROVIDE SURGE PROTECTION DEVICE USING 4#10-21mmC. SURGE PROTECTION LEADS TO BE AS SHORT AND STRAIGHT AS POSSIBLE. CIRCUIT BREAKER SIZE IS CONCEPTUAL, PROVIDE REQUIRED CIRCUIT BREAKER TO SUIT MANUFACTURER'S RECOMMENDATIONS.



4 / E-4 PARTIAL SINGLE LINE DIAGRAM

N.T.S.

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DRAWING:
ELECTRICAL:
DETAILS

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DRAWN BY: C.J.
CHECKED BY: B.T.
SCALE: N.T.S.

No. DWGS. 6
PROJECT No. 24094
DRAWING No. E-4

GENERAL

CONDITIONS OF CONTRACT
ALL CONDITIONS OF CCDC2–2020 (STIPULATED PRICE CONTRACT) SHALL APPLY TO THIS PROJECT.

EXAMINATION OF WORK
THIS PROJECT INVOLVES RENOVATIONS TO EXISTING BUILDING, THEREFORE EXAMINE THE SITE AND LOCAL CONDITIONS TO DETERMINE THE DIFFICULTIES IN CARRYING OUT THE WORK INDICATED AND SPECIFIED PRIOR TO SUBMITTING FINAL PRICE. NO ALLOWANCE FOR EXTRAS WILL BE MADE ON CONDITIONS EXISTING AT THE TIME OF TENDER.

PERMITS, CERTIFICATES, FEES, ETC.
PERFORM WORK IN ACCORDANCE WITH THE ONTARIO BUILDING CODE AND THE ONTARIO ELECTRICAL SAFETY CODE. TURN OVER ORIGINAL OF ELECTRICAL INSPECTION CERTIFICATE AT COMPLETION OF PROJECT.

TESTING
TEST ALL EQUIPMENT AND MATERIAL WHERE REQUIRED BY SPECIFICATIONS OR AUTHORITIES HAVING JURISDICTION AND DEMONSTRATE ITS PROPER OPERATION TO THE OWNER'S REPRESENTATIVE.

ELECTRIC MOTORS AND WIRING
THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE TO SUPPLY ALL MOTOR STARTERS, EXCEPT ON PRE–WIRED PACKAGED EQUIPMENT, DISCONNECT SWITCHES FOR ALL MOTORS FOR THE PROJECT, AND ALL WIRING TO STARTERS AND MOTORS EXCEPT WHERE SHOWN OR NOTED OTHERWISE. EQUIPMENT REQUIRING CONNECTION TO AN ELECTRICAL POWER SOURCE SHALL BE CSA OR ULC APPROVED FOR USE AT LOCATION OF INSTALLATION.

THE MECHANICAL CONTRACTOR SHALL SUPPLY CONTROL WIRING UP TO AND INCLUDING 120 VOLTS, WITHIN CONDUIT FOR A COMPLETE AND OPERATING INSTALLATION UNLESS OTHERWISE NOTED.

CO–ORDINATE WITH MECHANICAL CONTRACTOR TO CONFIRM FINAL CIRCUIT BREAKER / FUSE / STARTER REQUIREMENTS OF MECHANICAL EQUIPMENT PRIOR TO ORDERING DISTRIBUTION EQUIPMENT. BRING ANY DISCREPANCIES TO ATTENTION OF ENGINEER.

"AS–BUILT" DRAWINGS
KEEP IN THE JOB OFFICE AN EXTRA SET OF WHITE PRINTS AND SPECIFICATIONS ON WHICH ALL CHANGES AND DEVIATIONS SHALL BE RECORDED DAILY WITH A RED MARKER. SIMILARLY, KEEP A SET OF PANEL SCHEDULES AND MARK UP WITH ANY CHANGES. AT COMPLETION OF THE PROJECT TURN MARKED UP DRAWINGS AND PANEL SCHEDULES OVER TO THE ENGINEER.

SHOP DRAWINGS
BEFORE FABRICATION OR DELIVERY OF ANY MATERIALS OR EQUIPMENT, SUBMIT A MINIMUM OF SIX (6) COMPLETE SETS OF SHOP DRAWINGS AND DATA SHEETS COVERING ALL ITEMS OF EQUIPMENT FURNISHED AND INTENDED FOR INSTALLATION UNDER THIS CONTRACT FOR REVIEW BY THE ENGINEER.
SUBMIT AT LEAST FIFTEEN (15) WORKING DAYS BEFORE THE DATE REVIEWED SUBMISSIONS ARE REQUIRED.

ELECTRONIC SHOP DRAWING SUBMISSIONS ARE ACCEPTABLE WITH THE FOLLOWING CONDITIONS: THE SHOP DRAWINGS SHALL BE IN PDF FORMAT WITH A TRANSMITTAL AND INCLUDE THE TRADE CONTRACTOR'S REVIEW STAMP. THE PAGE SIZE SHALL NOT EXCEED 8.5"x11", BE BLACK AND WHITE, AND MUST BE FULLY LEGIBLE. IF COLOUR OR LARGER SHEET SIZE IS REQUIRED, THE SUBMISSION SHALL BE IN HARD COPY FORMAT RATHER THAN ELECTRONIC.

TEMPORARY AND TRIAL USAGE
TEMPORARY OR TRIAL USAGE BY THE OWNER OF ANY ELECTRICAL EQUIPMENT OR ANY OTHER WORK OR MATERIALS SUPPLIED UNDER THE CONTRACT BEFORE FINAL WRITTEN ACCEPTANCE BY THE ENGINEER IS NOT TO BE CONSTRUED AS EVIDENCE OF THE ACCEPTANCE OF SAME BY THE OWNER. THE OWNER SHALL HAVE THE PRIVILEGE OF SUCH TEMPORARY AND TRIAL USAGE AS SOON AS THIS CONTRACTOR SHALL CLAIM THAT SAID WORK IS COMPLETED. ANY DAMAGE CAUSED BY DEFECTIVE MATERIAL OR WORKMANSHIP THROUGH TEMPORARY OR TRIAL USAGE BY THE OWNER SHALL BE THE RESPONSIBILITY OF THIS CONTRACTOR.

CEILING TILE REMOVAL/REPLACEMENT
ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL AND REINSTALLATION OF ANY CEILING TILES TO SUIT WORK WITHIN THE CEILING SPACE. ANY DAMAGED TILES SHALL BE REPLACED AT THE CONTRACTOR'S COST.

OPERATING AND MAINTENANCE DATA
FURNISH THREE (3) SETS OF OPERATING AND MAINTENANCE DATA FOR ALL NEW EQUIPMENT AND SYSTEMS. DATA SHALL BE ASSEMBLED IN BOOKLET FORM WITH HARD COVER AND INDEX. BOOKLET TO INCLUDE WARRANTIES, CERTIFICATES AND TYPEWRITTEN PANEL DIRECTORIES. IDENTIFY FRONT COVER OR SPINE WITH NAME AND LOCATION OF THE PROJECT, CONSULTING ENGINEER AND CONTRACTOR. SUBMIT ONE COPY TO THE ENGINEER FOR REVIEW PRIOR TO FINAL SET OF THREE (3) PRINTED MANUALS AND ONE (1) PDF COPY.

NOTICE TO ENGINEER
PROVIDE ENGINEER WITH MINIMUM 48 HOURS NOTICE PRIOR TO INSTALLATION OF CEILING AND PARTITIONS SO THAT A FIELD REVIEW OF THE COMPLETED ROUGH IN WORK MAY OCCUR PRIOR TO THESE SYSTEMS BEING CONCEALED.

MATERIALS
USE SAME BRAND OF MANUFACTURER FOR EACH SPECIFIC APPLICATION.

APPROVALS
THE PRICE SUBMITTED FOR THIS CONTRACT SHALL BE BASED ON THE USE OF MATERIALS AND EQUIPMENT AS SPECIFIED. IF THIS CONTRACTOR WISHES TO QUOTE ON EQUIVALENT MATERIALS AND EQUIPMENT HE MUST QUOTE ON PRODUCTS APPROVED BY THE ENGINEER, IN WRITING, AS AN EQUIVALENT TO THE PRODUCT SPECIFIED. THIS CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ANY ADDITIONAL WORK OR MATERIALS REQUIRED BY THE ELECTRICAL TRADE OR OTHER CONTRACTORS TO ACCOMMODATE APPROVED EQUIVALENT MATERIALS OR EQUIPMENT. EXTRAS WILL NOT BE APPROVED TO COVER SUCH WORK.

CUTTING, PATCHING AND FIRESTOPPING
THE ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR THIS WORK AND SHALL COORDINATE LOCATIONS FOR ALL HOLES FOR CONDUITS, ETC., AND PROVIDE SLEEVES REQUIRED TO EXECUTE THE ELECTRICAL INSTALLATION. SCAN FLOORS AND STRUCTURAL WALLS BEFORE CUTTING TO LOCATE EXISTING REBAR AND CONDUITS, AND OBTAIN OWNER'S APPROVAL FOR PROPOSED CUTTING. PROVIDE ULC APPROVED FIRESTOPPING SYSTEM FOR ALL PENETRATIONS THROUGH RATED ASSEMBLIES. REPAIR ALL EXISTING WORK DAMAGED BY CUTTING AT NO EXTRA COST TO THE CONTRACT.

IDENTIFICATION
IDENTIFY WITH LAMICOID NAMEPLATES ALL ELECTRICAL EQUIPMENT SHOWN ON THE DRAWINGS AND/OR MENTIONED IN THE SPECIFICATION SUCH AS MOTORS, SWITCHES, STARTERS, PANELBOARDS, TRANSFORMERS, CONTROLS, AND SPECIAL RECEPTACLES, REGARDLESS OF WHETHER OR NOT THE ELECTRICAL EQUIPMENT WAS FURNISHED UNDER THIS SECTION OF THE SPECIFICATION. UNLESS OTHERWISE SPECIFIED, NAMEPLATES SHALL BE RIGID LAMICOID, MINIMUM 1.5mm THICK WITH BLACK LETTERS ENGRAVED ON A WHITE BACKGROUND. NAMEPLATES TO BE NEATLY PLACED, AND SQUARE TO SURROUNDING BUILDING OR EQUIPMENT LINES AND FASTENED IN PLACE WITH MECHANICAL FASTENERS (SCREWS OR POP RIVETS). WORDING TO BE REVIEWED BY ENGINEER.

PROVIDE NEATLY TYPED UPDATED CIRCUIT DIRECTORIES IN A PLASTIC HOLDER ON THE INSIDE DOOR OF NEW PANELBOARDS, WITH COPY IN MANUAL. CAREFULLY UPDATE PANELBOARD CIRCUIT DIRECTORIES WHENEVER ADDING, DELETING, OR MODIFYING EXISTING CIRCUITRY.

CLEARLY IDENTIFY ALL PULL AND JUNCTION BOXES, WITH PERMANENT HANDWRITTEN MARKER IDENTIFICATION INDICATING SOURCE PANEL AND CIRCUIT NUMBERS TO SATISFACTION OF ENGINEER. CLEARLY IDENTIFY WIRING WITH PERMANENT INDELIBLE IDENTIFYING MARKINGS, USING EITHER COLOUR CODED WIRING, OR NUMBERED OR COLOURED PLASTIC TAPES, ON BOTH ENDS OF PHASE CONDUCTORS OF FEEDERS AND BRANCH CIRCUIT WIRING TO SATISFACTION OF ENGINEER.

SEISMIC RESTRAINT
PROVIDE SEISMIC RESTRAINT OF ELECTRICAL SYSTEMS IN ACCORDANCE WITH SECTION 4.1.8 OF THE ONTARIO BUILDING CODE. SUBMIT RESTRAINT DETAILS IN FORM OF SHOP DRAWINGS, STAMPED AND SIGNED BY A SEISMIC ENGINEER LICENSED IN THE PROVINCE OF ONTARIO. HAVE SAME SEISMIC ENGINEER PROVIDE CONFIRMATION IN WRITING AT COMPLETION OF PROJECT THE ELECTRICAL INSTALLATION IS IN GENERAL COMPLIANCE WITH THE SHOP DRAWINGS. INCLUDE ALL COSTS FOR SEISMIC DESIGN, MATERIALS AND SITE REVIEW IN TENDER PRICE.

HOURS OF WORK
ANY AUDIBLE TESTING, CORE DRILLING OR ANY OTHER NOISY WORK TO BE PERFORMED AFTER WORKING HOURS. MAKE ARRANGEMENTS WITH BUILDING PERSONNEL TO CONFIRM TIMES FOR SUCH WORK.

SHUT–DOWNS OF SERVICES AND SYSTEMS
CONTRACTOR TO COORDINATE ALL DOWN TIME AND SYSTEM SHUTDOWNS WITH BUILDING OWNER OR USER GROUP PRIOR TO PERFORMING WORK. CONTRACTOR TO VERIFY WITH OWNER BEFORE MAKING ANY CONNECTION TO ANY EXISTING SYSTEMS. THIS WILL ENSURE THAT (1) THE OWNER IS AWARE THAT WORK WILL BE DONE ON A SYSTEM AND (2) THAT THE CONTRACTOR IS WORKING ON A SYSTEM THAT IS FUNCTIONING NORMALLY WHEN HE STARTS HIS WORK.

DEMOLITION
FULL EXTENT OF DEMOLITION MAY NOT BE ILLUSTRATED ON DRAWINGS. DEVICES SHOWN ARE BASED ON VISUAL INSPECTION PERFORMED DURING NORMAL WORKING HOURS, SOME EXISTING DEVICES MIGHT NOT BE SHOWN ON DRAWINGS DUE TO THE PRESENCE OF VARIOUS OBSTRUCTIONS. DISCONNECT AND REMOVE ALL EQUIPMENT LOCATED ON EXISTING CEILINGS AND WALLS TO BE DEMOLISHED. REMOVE ALL SERVICES FOR EQUIPMENT WHICH HAVE BECOME REDUNDANT UNDER THE CONTRACT COMPLETE WITH ALL REDUNDANT WIRING AND CONDUIT BACK TO PANEL SOURCE OR EXISTING CAST–IN SLAB BASE BUILDING JUNCTION BOX. ALL ITEMS REMOVED DURING DEMOLITION AND WHICH ARE NOT TO BE REUSED SHALL BE REMOVED FROM SITE.

CONTRACTOR IS RESPONSIBLE FOR THE RECONNECTION OF ANY SERVICES WHICH ARE TO REMAIN AND WHICH HAVE BEEN DISCONNECTED DURING THE COURSE OF DEMOLITION OR CONSTRUCTION. MAINTAIN ELECTRICAL SERVICES AND SYSTEMS AT ALL TIMES TO AREAS BEYOND THE CONSTRUCTION AREA. REINSTATE IMMEDIATELY ANY EXISTING SERVICES DISRUPTED DURING DEMOLITION NOT INTENDED TO BE REMOVED AS PART OF THIS CONTRACT. RETAIN CONTINUITY OF SERVICE OF THE FIRE ALARM SYSTEM AND ANY OTHER SAFETY OR SECURITY SYSTEMS TO ALL OCCUPIED AREAS OF THE BUILDING THROUGHOUT CONSTRUCTION PERIOD. WHERE SOME EXISTING MATERIALS OR EQUIPMENT ARE TO BE RETAINED IN PLACE OR RECONNECTED, IDENTIFY AND PROTECT THE MATERIALS OR EQUIPMENT PRIOR TO THE COMMENCEMENT OF DEMOLITION. MAINTAIN ADEQUATE STRUCTURAL SUPPORT FOR EQUIPMENT AND MATERIAL DURING DEMOLITION PROCESS.

ALL EQUIPMENT TO BE RE–USED IS TO BE CLEANED OF PAINT, PLASTIC, ETC. TO THE SATISFACTION OF THE ENGINEER.

CONTRACTOR IS RESPONSIBLE FOR RECONNECTING AND IDENTIFYING ANY EXISTING LOADS WHICH DO NOT APPEAR ON PANEL DETAILS AND WHICH ARE TO BE RE–USED.

WHERE EXISTING MATERIALS ARE TO BE RE–USED, THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR THEIR REMOVAL, STORAGE, CLEANING AND REINSTALLATION.

WHERE EXISTING DEVICES ARE BEING RELOCATED, EXTEND EXISTING WIRING AND CONDUIT AS REQUIRED AND REINSTATE IN NEW LOCATION SHOWN.

TURN OVER TO THE OWNER IN CLEAN AND SOUND CONDITION ANY REDUNDANT EXISTING MATERIAL OR EQUIPMENT DESIGNATED BY THE OWNER OR SPECIFIED ON DRAWINGS.

PROVIDE BLANK COVER PLATES FOR ALL DEVICES REMOVED FROM WALLS TO REMAIN.

ALL REDUNDANT BASE BUILDING LIGHT FIXTURES REMOVED AND NOT REUSED ARE TO BE OFFERED TO LANDLORD PRIOR TO REMOVAL FROM SITE.

CHANGES IN THE WORK
CHANGES IN THE WORK MAY BE REQUESTED FROM TIME TO TIME BY THE ISSUANCE OF A CONTEMPLATED CHANGE NOTICE (CCN) AND/OR PROPOSED CHANGE (PC). REFER TO GENERAL CONDITIONS OF THE CONTRACT OR FRONT END SPECIFICATIONS FOR REQUIREMENTS ON HOW TO QUOTE CHANGES IN THE WORK. THOSE REQUIREMENTS TAKE PRECEDENCE OVER THE REQUIREMENTS FOLLOWING IN THIS SECTION.

SHOULD THE BID FORM, GENERAL CONDITIONS OF THE CONTRACT, OR FRONT END SPECIFICATIONS NOT ADDRESS HOW TO QUOTE CHANGES IN THE WORK, THE REQUIREMENTS FOLLOWING IN THIS SECTION SHALL APPLY.

PROVIDE DETAILED BREAKDOWNS OF MATERIAL AND LABOUR WITH UNIT PRICES AND EXTENSIONS REQUIRED FOR REVIEW OF CONTEMPLATED CHANGE NOTICES (CCN'S) OR PROPOSED CHANGES (PC'S).

IN ADDITION TO THE NET COST OF THE CHANGE, THE CONTRACTOR SHALL BE ENTITLED TO A 15% FEE TO COVER OVERHEADS & PROFIT ON THE WORK AND A 10% FEE TO COVER OVERHEADS AND PROFIT ON SUB–TRADES.

REQUIRED LABOUR SHALL BE EVALUATED BASED ON PUBLISHED NECA MANUAL OF LABOUR UNITS, CURRENT AT TIME OF TENDER CLOSING, USING THE 'NORMAL" COLUMN. NO OTHER JOB FACTORS SHALL BE CONSIDERED APPLICABLE.

THE OVERHEAD PERCENTAGE AND USE OF NECA LABOUR UNITS INDICATED ABOVE INCLUDES THE FOLLOWING:
.1 INSURANCE.
.2 BONDING.
.3 FINANCING AND INTEREST.
.4 COORDINATION WITH OTHER TRADES.
.5 SALARIES OF ANY STAFF ABOVE THAT OF WORKING FOREMEN EMPLOYED DIRECTLY ON THE WORK.
.6 LICENSES AND PERMITS.
.7 ONSITE TIMEKEEPING AND SCHEDULING.
.8 REST PERIODS.
.9 ELECTRICAL CLEAN UP BEYOND OCA RECOMMENDED PRACTICE.
.10 MATERIAL HANDLING.
.11 PERSONAL HYGIENE.
.12 SAFETY TRAINING.
.13 JOB SITE SAFETY TALKS.
.14 WHMIS INFORMATION.
.15 HEALTH AND SAFETY COMMITTEE.
.16 ESCALATING SITE SAFETY PROCEDURES.
.17 GARBAGE BINS.
.18 SHIPPING AND DELIVERIES.
.19 PROJECT MANAGEMENT.
.20 ESTIMATING.
.21 SPECIAL CLEANING.
.22 SPECIAL HANDLING / STORAGE.
.23 EQUIPMENT RENTALS FOR SMALL TOOLS.
.24 EQUIPMENT START–UP.
.25 ANY OTHER NON PRODUCTIVE TIME ITEMS.

A SINGLE BLENDED LABOUR RATE BASED ON A CREW OF 1 WORKING FOREMAN AND 4 JOURNEYMEN SHALL BE USED FOR NORMAL WORKING HOURS FOR THE DURATION OF THE PROJECT AND SHALL INCLUDE THE FOLLOWING:
.1 BASE RATE, VACATION PAY AND STATUTORY HOLIDAYS AS PER CURRENT COLLECTIVE AGREEMENT FOR UNIONIZED CONTRACTORS.
.2 UNION DEDUCTIONS FOR BENEFITS (HEALTH & WELFARE), RETAIL SALES TAX ON HEALTH & WELFARE, PENSION, AND UNION FUNDS.
.3 ECA OTTAWA DEDUCTIONS.
.4 LEGISLATED PAYROLL BURDENS FOR:
  .1 CANADA PENSION PLAN.
  .2 EMPLOYMENT INSURANCE.
  .3 WORKPLACE SAFETY & INSURANCE BOARD
  .4 EMPLOYER HEALTH TAX.
.5 ECAO GUIDELINE ADDERS FOR:
  .1 EXPENDABLE SMALL TOOLS (BITS, BLADES, ETC).
  .2 SITE FACILITIES (TRAILER, LUNCHROOM, PHONE).
  .3 PERSONAL PROTECTION EQUIPMENT (GLASSES, VESTS, FALL PROTECTION, HEARING).
  .4 PARKING AS PER COLLECTIVE AGREEMENT.
  .5 CLEAN UP AS PER OCA RECOMMENDED PRACTICE.

FOR PREMIUM NIGHT SHIFT (MINIMUM THREE CONSECUTIVE NIGHT SHIFTS), USE THE NORMAL RATE CALCULATION WITH A 20% ADDER TO BASE RATE, VACATION PAY, PENSION, AND HEALTH & WELFARE BENEFITS.

FOR OVERTIME, USE THE NORMAL RATE CALCULATION WITH A 100% ADDER TO BASE RATE, VACATION PAY, PENSION, AND HEALTH & WELFARE BENEFITS.

COST QUOTATIONS SHALL BE BASED ON INDUSTRY ACCEPTED COSTING METHODS. WIRING, CONDUIT AND SIMILAR COMMODITY–TYPE MATERIALS SHALL BE BASED ON CURRENT TRADE SERVICE CANADIAN MONITOR PLUS NET PRICING WITH A 30% DISCOUNT APPLIED. SUBMIT SUPPLIER INVOICES FOR OTHER TYPES OF MATERIAL SUCH AS POWER DISTRIBUTION EQUIPMENT, LIGHT FIXTURES, HEATING PRODUCTS, FIRE ALARM COMPONENTS, ETC.
THE FOLLOWING JOB EXPENSES SHALL BE CONSIDERED TO BE ACCEPTABLE IN CERTAIN PRICING EXERCISES:
.1 BONDING COSTS.
.2 WARRANTY COSTS BASED ON 2% OF THE MATERIAL & LABOUR COST FOR THE CHANGE.
.3 DRAFTING COSTS BASED ON 2% OF THE LABOUR COST FOR THE CHANGE.
.4 HOISTING.
.5 EQUIPMENT RENTALS FOR LARGE EQUIPMENT.
.6 CORE DRILLING.
.7 TRAVEL IN ACCORDANCE WITH THE APPLICABLE UNION AGREEMENT.

THE ELECTRICAL CONTRACTOR SHALL SUBMIT A TEMPLATE PROPOSED TO BE USED FOR ANY CCN'S/PC'S AS A FORMAL SHOP DRAWING SUBMISSION FOR REVIEW AND RECOMMENDED ACCEPTANCE PRIOR TO ANY CCN'S/PC'S BEING ISSUED.

GENERAL REVIEW DECLARATION
PRIOR TO TIME OF OCCUPANCY PERMIT APPLICATION, SUBMIT THE FOLLOWING ITEMS FOR REVIEW:
.1 ELECTRICAL SAFETY AUTHORITY CERTIFICATE OF INSPECTION, FOR OCCUPANCY OR FINAL, WITH NO DEFICIENCIES NOTED
.2 LETTER INDICATING SYSTEMS HAVE BEEN SEISMICALLY RESTRAINED IN ACCORDANCE WITH THE OBC. LETTER SHALL BE AUTHORED, SIGNED, AND SEALED BY A PROFESSIONAL ENGINEER LICENSED IN THE PROVINCE OF ONTARIO.

SUBMISSIONS SHALL BE COMPLETE WITH TRANSMITTALS OR COVER LETTERS SIGNED BY AN APPROPRIATE SKILLED TRADE. THE SIGNATORY SHALL BE REGISTERED WITH SKILLED TRADES ONTARIO.

THE PROJECT MUST BE SUBSTANTIALLY COMPLETE AND READY FOR ITS INTENDED USE. ENERGIZE, TEST AND COMMISSION ALL SYSTEMS. ENSURE SYSTEMS HAVE BEEN INSTALLED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS, MANUFACTURER'S RECOMMENDATIONS, AND INDUSTRY STANDARDS AS THE CASE MAY BE.

BASIC MATERIAL AND METHODS

WIRING METHODS
PROVIDE COPPER CONDUCTORS WITH RW90 INSULATION. MINIMUM CONDUCTOR SIZE SHALL BE #12 AWG FOR POWER AND LIGHTING AND #14 AWG FOR CONTROLS UNLESS OTHERWISE NOTED. INSTALL IN EMT CONDUIT UNLESS OTHERWISE NOTED. RUN CONDUITS PARALLEL TO BUILDING LINES AND STRAP AT CODE SPACINGS. CONCEAL CONDUITS IN FINISHED AREAS. USE BX ONLY FOR WIRING DROPS FROM AREA BOX TO LIGHT FIXTURES AND BETWEEN FIXTURES IN T–BAR CEILING, AND WITHIN PARTITION WALLS UP TO CEILING BOX FOR A MAXIMUM CEILING CABLE LENGTH OF 3m. ADJUST CONDUCTOR SIZE FOR 120V BRANCH CIRCUIT RUNS EXCEEDING 23m IN LENGTH TO LIMIT VOLTAGE DROP TO MAXIMUM 5% FROM SERVICE ENTRANCE.

COLOUR CODE WIRING AS FOLLOWS:

HOT WIRES DIRECT FROM PANEL: RED/BLACK/BLUE FOR 3 PHASE SYSTEMS, RED/BLACK FOR 1 PHASE SYSTEMS.
SWITCH WIRES FROM LIGHT SWITCH TO LOAD: RED.
NEUTRAL WIRE: WHITE.
MECHANICAL GROUND WIRE: GREEN.

WHERE A CIRCUIT IS DEDICATED, ALL CONDUCTORS SHALL BE UNIQUE, NOT COMMON WITH OTHER CIRCUITS. WHERE LOAD OR BREAKER RATINGS ARE GREATER THAN 15 AMPERES, THE CONDUCTOR SHALL BE AS SHOWN ON DRAWINGS OR OF THE CAPACITY EQUAL TO THE BREAKER TRIP SIZE PER THE ELECTRICAL CODE. PROVIDE SEPARATE NEUTRAL FOR EVERY PHASE CONDUCTOR IN BRANCH CIRCUITS FEEDING RECEPTACLE LOADS, AND FOR ANY DIMMED LIGHTING LOADS.

CIRCUITING SHOWN ON DRAWINGS IS FOR GROUPING PURPOSES ONLY AND DOES NOT REFLECT ACTUAL BREAKER POSITION. CONTRACTOR TO WIRE TO ACHIEVE GROUPING SHOWN AND MARK RECORD DRAWINGS WITH CIRCUIT NUMBERS USED TO REFLECT "AS–BUILT" CONDITIONS.

PROVIDE NEW WIRING AND CONDUIT FROM PANELBOARDS FOR CIRCUITING OF NEW DEVICES SHOWN ON PLANS UNLESS OTHERWISE NOTED. WHERE LOCAL CIRCUITS HAVE BEEN FREED UP BY DEMOLITION WORK, REUSE LOCAL CIRCUITS FOR NEW DEVICES AND INDICATE CHANGES ON "AS–BUILT" MARKUPS.

PROVIDE P–TOUCH LABELLING ON ALL RECEPTACLES AND SWITCHES INDICATING CIRCUIT NUMBER AND SOURCE PANEL. P–TOUCH LABEL SHALL HAVE BLACK LETTERING ON CLEAR BACKGROUND.

LOCATION OF OUTLETS AND MOUNTING HEIGHTS
LOCATE OUTLETS GENERALLY AS SHOWN ON DRAWINGS, REFER TO ARCHITECT/INTERIOR DESIGNER DRAWINGS FOR EXACT LOCATIONS.

DO NOT INSTALL OUTLETS BACK–TO–BACK IN WALL; ALLOW MINIMUM 150mm HORIZONTAL CLEARANCE BETWEEN BOXES, AND LOCATE IN SEPARATE STUD CAVITIES WHEREVER POSSIBLE.

CHANGE LOCATION OF OUTLETS AT NO EXTRA COST OR CREDIT, PROVIDING DISTANCE DOES NOT EXCEED 3m, AND INFORMATION IS GIVEN BEFORE INSTALLATION.

INSTALL ELECTRICAL EQUIPMENT AT THE FOLLOWING HEIGHTS UNLESS INDICATED OTHERWISE. COORDINATE ALL MOUNTING HEIGHTS OF RECEPTACLES AND VOICE/DATA OUTLETS WITH ARCHITECT/INTERIOR DESIGNER DRAWINGS PRIOR TO ROUGH–IN.

LOCAL SWITCHES	1100mm
WALL RECEPTACLES:	
GENERAL	400mm
ABOVE TOP OF HEATER OR COUNTER BACK SPLASH	175mm
IN MECHANICAL AND ELECTRICAL ROOMS	1100mm
IN DEMOUNTABLE PARTITIONS WITHIN BASE MOULDING HEIGHT, HORIZONTAL	
PANELBOARDS TO TOP OF TRIM	1800mm
TELEPHONE, DATA AND TV OUTLETS (STANDARD)	400mm
IN DEMOUNTABLE PARTITIONS WITHIN BASE MOULDING HEIGHT, HORIZONTAL	
TELEPHONE (WALL MOUNTED) AND INTERPHONE OUTLETS	1100mm

MOUNTING HEIGHT OF EQUIPMENT IS FROM FINISHED FLOOR TO CENTRE LINE OF EQUIPMENT UNLESS SPECIFIED OR INDICATED OTHERWISE. IF MOUNTING HEIGHT OF EQUIPMENT IS NOT INDICATED, VERIFY BEFORE PROCEEDING WITH INSTALLATION.

CONDUIT AND CONDUIT FITTINGS
MINIMUM CONDUIT SIZE SHALL BE 21mm.

FITTINGS TO BE SUITABLY SIZED FOR CONDUIT USED. FITTINGS USED WITH EMT TO BE STEEL SET SCREW TYPE, NOT CAST. FACTORY 'ELLS' WHERE 90 deg BENDS ARE REQUIRED FOR 27mm AND LARGER CONDUITS, OR FIELD BENDS WITH APPROVED HYDRAULIC BENDER. PROVIDE WIRING CONNECTION WITHIN JUNCTION BOX FOR ANY TRANSITION FROM CONDUIT TO ARMOURED CABLE (BX).

SUPPORT FROM BUILDING STRUCTURE WHERE POSSIBLE. DO NOT FASTEN TO OR SUPPORT FROM METAL ROOFING DECK.

WIRING DEVICES AND OUTLET BOXES
PROVIDE GANGED BOXES AND COMMON COVER PLATES WHERE MULTIPLE DEVICES OCCUR (SWITCHES, DIMMERS, ETC) OR IF NOT POSSIBLE CAREFULLY LOCATE AND ALIGN TO MAKE A NEAT ARRANGEMENT WITH EQUAL SPACINGS BETWEEN FINISHED DEVICES, AND IN HARMONY WITH SURROUNDING BUILDING LINES. PROVIDE WHITE SPECIFICATION GRADE WIRING DEVICES AND STAINLESS STEEL COVER PLATES UNLESS OTHERWISE NOTED.

WEATHERPROOF DEVICES AT EXTERIOR LOCATIONS OR INDICATED BY "WP" ON PLANS. WEATHERPROOF RECEPTACLES SHALL BE COMPLETE WITH CAST ALUMINUM COVER PLATES MARKED "EXTRA DUTY" WHILE–IN–USE AND GASKETS FOR DEVICES, EQUAL TO LEVITON IUM SERIES.

PULL BOXES
BREAK UP LONG RUNS OF CONDUITS BY A SUFFICIENT NUMBER OF PULL BOXES TO MAKE PULLING OF WIRE EASY. IN NO CASE WILL A RUN BE MORE THAN 30m BETWEEN BOXES. LOCATE BOXES IN ACCESSIBLE AREAS.

JUNCTION BOXES
SIZED AS PER ONTARIO ELECTRICAL SAFETY CODE FOR NUMBER AND SIZE OF CONDUCTORS. LOCATE BOXES IN ACCESSIBLE AREAS. USE OF EXTENSION BOXES IS PROHIBITED, EXCEPT WHERE USED TO EXTEND FOR SURFACE CONDUIT DISTRIBUTION OR BY SPECIAL PERMISSION FROM THE ENGINEER.

GROUNDING
GROUND ALL FRAMES, ENCLOSURES AND TRANSFORMER SECONDARIES TO CODE REQUIREMENTS. PROVIDE SEPARATE GROUND WIRE IN ALL CONDUITS.

LIGHTING

FIXTURES AND INSTALLATION
RELOCATE LIGHTING FIXTURES AS INDICATED ON DRAWINGS. PROVIDE DIRECT CONNECTIONS TO FIXTURES.

PROVIDE LIGHTING FIXTURES COMPLETE WITH LAMPS, CONTROLS, SUPPORTS, ETC. TO PROVIDE A COMPLETE WORKING LIGHTING SYSTEM. FOR SUSPENDED CEILING INSTALLATIONS, SUPPORT EACH NEW AND RELOCATED LUMINAIRE INDEPENDENTLY OF THE CEILING SUPPORT SYSTEM WITH SLACK CHAINS.

PROVIDE LOCAL LIGHTING CONTROLS WHERE INDICATED. CONNECT LOCAL CONTROL ZONES OPERATIONALLY DOWNSTREAM OF MASTER/BASE BUILDING CONTROLS SUCH THAT LOCAL LIGHTING FIXTURES ARE ENERGIZED ONLY WHEN MASTER/BASE BUILDING LIGHTING ZONES ARE "ON". PROVIDE UNSWITCHED POWER UPSTREAM OF MASTER/BASE BUILDING CONTROLS FOR LOCAL CONTROL DEVICES AS NEEDED.

TRACE EXISTING LIGHTING CIRCUITS WITHIN AREA OF WORK BACK TO SOURCE PANEL AND CONTROL RELAYS, PROVIDE ADDITIONAL RELAYS TO MATCH EXISTING AS REQUIRED TO ACHIEVE LOW VOLTAGE LIGHTING CONTROL INDICATED ON PLANS.

ALL LENSES AND LOUVRES TO BE OF VIRGIN ACRYLIC MATERIAL. THE LENSES SHALL BE K12, 0.125" IN THICKNESS UNLESS NOTED.

INTERIOR FIXTURES MANUFACTURED BY ACUITY BRANDS, AXIS, COOPER, CORONET, CREE, DELVIRO, DIODE LED, FOCAL POINT, FINELITE, GENERAL ELECTRIC, HE WILLIAMS, HUBBELL, LEVITON, LITELINE, PEERLESS ELECTRIC, PHILIPS/SIGNIFY, AND WAC AND HAVING THE SAME APPEARANCE AND DESIGN FEATURES AS THE ONES SPECIFIED ARE ACCEPTED AS EQUIVALENT UNLESS OTHERWISE NOTED IN FIXTURE SCHEDULE, SUBJECT TO SHOP DRAWING REVIEW.

LIGHT EMITTING DIODE (LED) FIXTURES
LED FIXTURES TO COMPLY WITH CSA C22.2 No. 250.13, COMPLETE WITH DISCRETE DRIVER, HEAT SINK, CIRCUIT BOARD AND HOUSING COMPONENTS.

LED LAMPS SHALL PROVIDE THE MINIMUM DELIVERED LUMENS INDICATED ON LIGHT FIXTURE SCHEDULE AND SHALL MAINTAIN MINIMUM 70% OF INITIAL LUMENS AFTER 50,000 HOURS OF OPERATION OR BETTER AS INDICATED ON LIGHT FIXTURE SCHEDULE. MINIMUM COLOUR RENDERING INDEX OF 85 AND COLOUR TEMPERATURE OF 3500'K UNLESS OTHERWISE NOTED.

EACH LED FIXTURE TO BE COMPLETE WITH INTEGRAL, MODULAR, REPLACEABLE DRIVERS. MINIMUM EFFICIENCY: 85%. MAXIMUM THD: 20%

ACCEPTABLE DRIVER MANUFACTURERS: UNIVERSAL, GENERAL ELECTRIC, SYLVANIA/OSRAM, ULTRASAVE, PHILIPS, ELDOLED (ACUITY), CREE, NICHIA, SAMSUNG.

LAMPS–GENERAL
PROVIDE ALL REQUIRED LAMPS AS INDICATED IN FIXTURE LIST.

ACCEPTABLE MANUFACTURERS: PHILIPS, GE, OSRAM/SYLVANIA.

EXIT LIGHTS
EXIT SIGNS SHALL BE GREEN RUNNING MAN PICTOGRAM TYPE, WITH WHITE LED LAMPS, UNIVERSAL 2–WIRE AC INPUT VOLTAGE OF 120 TO 347VAC AT LESS THAN 2.5 WATTS [AND UNIVERSAL 2–WIRE DC INPUT VOLTAGE FROM 6 TO 24VDC] FOR SINGLE AND DOUBLE FACE SIGNS. SHALL BE SUITABLE FOR WALL, END, OR CEILING MOUNT. EXTRUDED ALUMINUM HOUSING WITH WHITE FINISH, WITH CLEAR POLY–CARBONATE FACEPLATES WITH DIRECTIONAL INDICATORS AS SHOWN ON PLANS. SHALL MEET CSA 22.2 NO. 141 LATEST EDITION.

EQUAL TO EMERGI–LITE EA SERIES.

EMERGENCY BATTERY UNIT (EBUS)
PROVIDE EMERGENCY BATTERY UNIT AS FOLLOWS:
TO CSA C22.2 NO. 141. SEALED LEAD ACID BATTERIES, 10 YEAR LIFE.
MINIMUM OPERATING TIME 30 MINUTES BASED ON CONNECTED LOAD PLUS 10% UNLESS OTHERWISE NOTED, MINIMUM 200 WATTS.
MULTI RATE CHARGER, REGULATED, TEMPERATURE COMPENSATED, SHORT CIRCUIT PROTECTED.
SOLID STATE TRANSFER AND LOW VOLTAGE DISCONNECT.
SIGNAL LIGHTS AND TEST SWITCH.
WALL MOUNTING.
INTEGRAL HEADS WHERE SHOWN, AND REMOTE HEADS CEILING MOUNTED ON CANOPY PLATE, FULLY ADJUSTABLE SWIVEL TYPE, WITH 5 WATT LED MR16 LAMPS. WIRING TO BE SIZED TO LIMIT VOLTAGE DROP TO MAXIMUM 5%

ELECTRICAL DISTRIBUTION AND EQUIPMENT

DISCONNECT SWITCHES AND FUSES
FUSIBLE AND NON–FUSIBLE DISCONNECT SWITCHES SHALL BE HEAVY DUTY TYPE IN CSA ENCLOSURE, TYPE 1 INDOORS, SPRINKLER PROOF IN SPRINKLERED BUILDING AND TYPE 3 OUTDOORS. WHERE FUSED, FUSES SHALL MATCH EXISTING OR SHALL BE HRCI CLASS J/RK1/RK5 TIME DELAY TYPE AND CURRENT LIMITING. STANDARD OF ACCEPTANCE: BUSSMANN, EDISON, LITTELFUSE, MERSEN/GOULD. ENSURE CORRECT FUSES FITTED TO PHYSICALLY MATCHED MOUNTING DEVICES.

MOTOR RATED SWITCH
MOTOR RATED SWITCH SHALL BE HORSE POWER RATED FOR MOTOR USE AS FOLLOWS: SERVICE SPACES: SURFACE MOUNTED SWITCH WITH PILOT LIGHT EQUAL TO EATON MS SERIES FOR MOTOR UP TO 1HP@120V/240V AND B100 SERIES FOR MOTOR UP TO 5HP@600V.

FINISHED SPACES: RECESSED TOGGLE SWITCH TYPE EQUAL TO HUBBELL HBL SERIES FOR MOTOR UP TO 2HP@120V/240V EXTRA HEAVY DUTY INDUSTRIAL GRADE. FINISHES TO MATCH LIGHT SWITCHES THROUGHOUT.

PANELBOARDS
PROVIDE NEW BREAKERS TO MATCH EXISTING SIEMENS PANELS AS SHOWN AND AS REQUIRED. HALF SIZE BREAKERS NOT ACCEPTABLE U.O.N.

NEW PANELBOARDS SHALL BE AS FOLLOWS:

600V PANELBOARDS: BUS AND BREAKERS RATED FOR 14,000 AMPS RMS SYMMETRICAL INTERRUPTING CAPACITY OR AS INDICATED.
250V BRANCH CIRCUIT PANELBOARDS TO HAVE MINIMUM INTERRUPTING CAPACITY OF 10,000 AMP RMS SYMMETRICAL OR AS INDICATED.
SEQUENCE PHASE BUSSING WITH ODD NUMBERED BREAKERS ON LEFT AND EVEN ON RIGHT, WITH EACH BREAKER IDENTIFIED BY PERMANENT NUMBER IDENTIFICATION AS TO CIRCUIT NUMBER AND PHASE.
PANELBOARDS: MAINS, NUMBER OF CIRCUITS, NUMBER AND SIZE OF BRANCH CIRCUIT BREAKERS AS INDICATED.
TWO KEYS FOR EACH PANELBOARD AND ALL PANELBOARDS TO BE KEYED ALIKE.
COPPER BUS WITH NEUTRAL OF SAME AMPERE RATING AS MAINS.
BOLT–ON COMMON TRIP BREAKERS UNLESS SPECIFIED OTHERWISE.
TRIM AND DOOR FINISH: BAKED GREY ENAMEL.
PROVIDE SPRINKLER SHIELDS IN SPRINKLERED BUILDINGS.
COMPLETE CIRCUIT DIRECTORY WITH TYPEWRITTEN LEGEND SHOWING DESCRIPTION OF EACH CIRCUIT AND DATE WHEN IT WAS LAST MODIFIED.

STANDARD OF ACCEPTANCE: ELECTRICAL DISTRIBUTION EQUIPMENT SHALL BE FROM SIEMENS TO MATCH BASE BUILDING.

LOCATE PANELBOARDS AS INDICATED AND MOUNT SECURELY, PLUMB AND SQUARE.

STARTERS AND CONTROLS
PROVIDE MANUAL MOTOR STARTER FOR MOTORS TO 1/2 HP 120V, 1 PHASE, WITH OVERLOAD, HEATER, AND NEON PILOT LIGHT, UNLESS OTHERWISE NOTED. STANDARD OF ACCEPTANCE: EATON MS. PROVIDE 3 PHASE MAGNETIC MOTOR STARTER FOR MOTORS OVER 1/2 HP, WITH 120V CONTROL TRANSFORMER AND FUSE, TEST–OFF–AUTO SWITCH AND RED 'ON' PILOT LIGHT UNLESS NOTED. CONNECT CONTROL DEVICES TO STARTER AS SHOWN.

STANDARD OF ACCEPTANCE: ELECTRICAL DISTRIBUTION EQUIPMENT SHALL BE FROM SIEMSNS TO MATCH BASE BUILDING.

WIRING TERMINATIONS
LUGS, TERMINALS, SCREWS USED FOR TERMINATION OF WIRING TO BE SUITABLE FOR 90 DEGREE C RATED CONDUCTORS, EITHER COPPER OR ALUMINUM.

HEATING CABLES
PROVIDE GUTTER/DOWNSPOUT SELF–LIMITING DE–ICING CABLE EQUAL TO RAYCHEM ICESTOP GM–1XT SERIES, 120V, 12 WATTS PER LINEAL FOOT OR EQUIVALENT BY:
.1 BRITECH
.2 OUELLET

COMPLETE WITH ONE AMC–F5 AMBIENT THERMOSTAT FOR MAIN ENTRANCE GUTTERS/DOWNSPOUTS AS SHOWN ON PLANS.

PROVIDE ALL ACCESSORIES FOR A COMPLETE WORKING SYSTEM.

INSTALL GUTTER/DOWNSPOUT DE–ICING HEATING CABLES WITHIN MAIN ENTRANCE GUTTERS AND DOWNSPOUTS AS INDICATED AND IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. DISTRIBUTE AND FASTEN CABLE EVENLY WITHIN GUTTERS AND DOWNSPOUTS USING STRAPS AND FASTENERS AS PER MANUFACTURER'S RECOMMENDED SPACING. ENSURE THAT HEATING CABLES DO NOT TOUCH OR CROSS EACH OTHER AT ANY POINT. RUN ONLY COLD LEADS IN CONDUIT. GROUND SHIELD TO BUILDING GROUND. CO–ORDINATE CABLE INSTALLATION WITH GUTTER/DOWNSPOUT INSTALLATION. LOOP ADDITIONAL CABLE AT BOTTOM OF DOWNSPOUTS WITHIN HEATED AREA BELOW GROUND FLOOR SLAB AS PER MANUFACTURER'S RECOMMENDATIONS.

MAKE POWER AND CONTROL CONNECTIONS. SOURCE BREAKER TO BE GFI TYPE.

USE 500V MEGGER TO TEST CABLES FOR CONTINUITY AND INSULATION VALUE.

REPLACE ANY DEFECTIVE SECTIONS PRIOR TO FINAL ACCEPTANCE AT NO COST TO THE OWNER.

TELECOMMUNICATIONS

CONDUITS AND OUTLETS
PROVIDE EMPTY CONDUITS AS SHOWN FOR TELEPHONE/DATA SYSTEM, WITH BUSHING ON EACH CONDUIT END, AND PULL STRING IN ALL EMPTY CONDUITS. PROVIDE SINGLE GANG BACK BOX AT EACH WALL TELEPHONE/DATA OUTLET, WITH 21mm EMT TO TOP OF WALL INTO ACCESSIBLE CEILING SPACE. THIS SYSTEM REQUIRES CABLES WITH FT6 RATING BY TELEPHONE/DATA INSTALLER.

PROVIDE PULL BOX IN CONDUIT RUNS WHEN THE LENGTH IS OVER 30 METRES, IF THERE ARE MORE THAN TWO 90 DEGREE BENDS OR IF THERE IS A REVERSE BEND IN THE RUN. PULL BOXES SHALL BE CONSTRUCTED OF CODE GAUGE STEEL AND SHALL HAVE A RUST RESISTANT FINISH. INSTALL IN EASILY ACCESSIBLE LOCATIONS WITH AN INDICATOR DECAL ON CEILING OR T–BAR SHOWING LOCATION. IN ALL INSTANCES PULL BOXES SHALL BE PLACED IN STRAIGHT SECTIONS OF A CONDUIT RUN AND SHALL NOT BE USED IN LIEU OF A BEND. CORRESPONDING ENDS OF THE CONDUIT ARE TO BE ALIGNED WITH EACH OTHER. LB, LL, LR AND OTHER CONDUIT TYPE FITTINGS ARE NOT TO BE USED IN LIEU OF PULL BOXES AND BENDS.

PROVIDE INSIDE RADIUS OF A BEND IN A CONDUIT AT LEAST SIX TIMES THE INTERNAL DIAMETER WHEN THE CONDUIT IS LESS THAN 53MM IN DIAMETER AND TEN TIMES THE INTERNAL DIAMETER WHEN THE CONDUIT IS 53MM AND LARGER IN DIAMETER.

REAM AND BUSH ALL CONDUITS.

AT COMPLETION OF CABLING CONTRACT, PROVIDE BLANK COVER PLATES TO MATCH IN COLOUR, STYLE AND MATERIAL, THE COVERPLATES IN THE AREA, ON ANY UNUSED OUTLET BOX.

REVISION No.	DESCRIPTION	DATE
3.	ISSUED FOR TENDER	JUN 03/25
2.	ISSUED FOR BUILDING PERMIT	APR 21/25
1.	ISSUED FOR 66% REVIEW	MAR 28/25

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PROJECT:
MERCEDEZ–BENZ
STAR MOTORS OF OTTAWA
400 WEST HUNT CLUB RD,
OTTAWA, ONTARIO

DRAWING:
ELECTRICAL:
SPECIFICATIONS

DATE: MARCH 2025
DESIGNED BY: C.J.
DRAWN BY: C.J.
CHECKED BY: B.T.
SCALE: N.T.S.
No. DWGS. 6
PROJECT No. 24094
DRAWING No. E–5