	LIGHTING		EMERGENCY LIGHTING		MOTORS & MECHANICAL		FIRE ALARM		POWER AND RECEPTACLES		LIST OF ABBREVIATIONS
	LINEAR LIGHT FIXTURE. TYPE '#' AS NOTED. REFER TO LUMINAIRE SCHEDULE FOR SPECIFIC MOUNTING		LED DOUBLE REMOTE HEAD FIXTURE. MINIMUM 6W PER HEAD. WIRE TO EMERGENCY LIGHTING BATTERY	Œ	MOTOR CONNECTION. E.C. TO PROVIDE FUSIBLE DISCONNECT SWITCH TO MATCH MOTOR.	A € CO	120V CO ALARM C/W 10 YEAR BATTERY BACKUP.	Ф	DUPLEX RECEPTACLE.		AMPS/AMPERES
	DETAILS AND SPECIFICATION. REFER TO CIRCUITING (CCT-'a') FOR CONTROLS ASSOCIATED WITH OPEN		UNIT. VOLTAGE TO MATCH BATTERY UNIT.	₽ ₽	COORDINATE WITH MECHANICAL FOR EXACT LOCATION. # INDICATES MOTOR NAME. REFER TO	Notes:		d GF	GROUND FAULT CIRCUIT INTERRUPTER DUPLEX	AP	ACCESS POINT
	AREA LIGHTING.		12/24V EMERGENCY BATTERY UNIT C/W LED DOUBLE HEAD FIXTURE. MINIMUM 6W PER HEAD. BATTERY		MOTOR SCHEDULE FOR DETAILS.			-	RECEPTACLE.	BG	BELOW GRADE
_	CEILING LIGHT FIXTURE. TYPE # AS NOTED. REFER TO LUMINAIRE SCHEDULE FOR SPECIFIC MOUNTING	₩	SIZED TO SUIT EM LIGHTING LOAD.	D.	FUSIBLE DISCONNECT SWITCH PROVIDED BY ELECTRICAL CONTRACTOR.			\mathbf{Q}_{Mb}	WEATHERPROOF DUPLEX RECEPTACLE.	CCT	CIRCUIT
#	DETAILS AND SPECIFICATION. REFER TO CIRCUITING	⊠#	12/24V EMERGENCY BATTERY UNIT. BATTERY SIZED TO SUIT EM LIGHTING LOAD.		ELECTRICAL CONTRACTOR.			1	SPECIFIC OUTLET. REFER TO PANEL	CO CO2	CARBON MONOXIDE CARBON DIOXIDE
	(CCT-'a') FOR CONTROLS ASSOCIATED WITH OPEN AREA LIGHTING.				MOTORIZED DAMPER. E.C. TO PROVIDE 120V CABLING AND POWER SUPPLY. LOW VOLTAGE BY MECHANICAL				SCHEDULE/NOTED VOLTAGE AND AMPACITY.	CSTE	CUSTOMER SERVICE TERMINATION ENCLOSURE
	WALL MOUNTED LIGHT FIXTURE. TYPE # AS NOTED.	EXIT	LED RED 'EXIT' SIGN TO MATCH EXISTING. FACES AND DIRECTION TO SUIT.	MD	CONTRACTOR. COORDINATE PROVISION OF LOW			\mathbf{Q}_{SC}	SEPARATE CIRCUIT DUPLEX RECEPTACLE.	C/W	COMPLETE WITH
#	REFER TO LUMINAIRE SCHEDULE FOR SPECIFIC MOUNTING DETAILS AND SPECIFICATION. REFER TO				VOLTAGE TRANSFORMER WITH MECHANICAL. DIRECT CONNECTION OF MECHANICAL PROVIDED			8	JUNCTION BOX.	FACP	FIRE ALARM CONTROL PANEL
	CIRCUITING (CCT-'a') FOR CONTROLS ASSOCIATED WITH OPEN AREA LIGHTING.	EXIT	LED RED 'EXIT' SIGN C/W LED DOUBLE HEAD FIXTURE TO MATCH EXISTING. FACES AND DIRECTION TO SUIT.	& □	EQUIPMENT. E.C. TO PROVIDE FUSIBLE DISCONNECT SWITCH TO MATCH MOTOR. COORDINATE WITH			₩A	RECEPTACLE MOUNTED ABOVE COUNTER.	FLA	FULL LOAD AMPS
\$	SINGLE GANG LIGHT SWITCH.	EXII	MINIMUM 6W PER HEAD. FIXTURE TO BE C/W INTEGRAL BATTERY BACKUP.	#	MECHANICAL FOR EXACT LOCATION. # INDICATES MOTOR NAME. REFER TO MOTOR SCHEDULE FOR				201 T 01 0T DUDI EV DECEDTA 01 E	FF	FORCE FLOW
	MULTI-GANG LIGHT SWITCH.	Notes:	WP INDICATES WEATHER-PROOF.		DETAILS.			Ф	20A T-SLOT DUPLEX RECEPTACLE.	FT	FEET
#	WOLTFGANG LIGHT SWITCH.		'c' INDICATES CEILING MOUNTED.		SPEED CONTROLLER FOR EXHAUST/CEILING FAN. CONTROLLER PROVIDED BY MECHANICAL. WIRED BY				ELECTRICAL PANEL.	HP	HORSE POWER
(2)	CEILING MOUNTED OCCUPANCY SENSOR.			(3)	ELECTRICAL.			₽ c	CEILING MOUNTED RECEPTACLE.	HX	HEAT EXCHANGER
(\$)								Notes:	'F' INDICATES FLOOR MOUNTED.	KVA	KILO-VOLT AMPS
3 .	3-WAY LIGHT SWITCH.			Notes:					'c' INDICATES CEILING MOUNTED. 'TV' INDICATES MOUNTED AT HIGH LEVEL FOR	KW	KILOWATT
7	DIMMING CAUTOLI WATTACE AND DIMMING TVDE TO								TELEVISION. CONFIRM EXACT HEIGHT WITH ARCH ELEVATIONS OR ON SITE WITH OWNER REP. 'EX' INDICATES EXISTING TO REMAIN.	MAX	MAXIMUM
D	DIMMING SWITCH. WATTAGE AND DIMMING TYPE TO SUIT LIGHT FIXTURE AND CIRCUIT.									MBC	MANITOBA BUILDING CODE
®	PHOTOCELL. WATTAGE AND TYPE TO SUIT LIGHT								'R' INDICATES TO BE RELOCATED.	MCA	MINIMUM CIRCUIT AMPACITY
	FIXTURE CIRCUIT.									MECB	MANITOBA ENERGY CODE FOR BUILDINGS
Notes:	N/L INDICATES WIRED TO A NIGHT LIGHTING CIRCUIT. EM INDICATES WIRED TO AN EMERGENCY LIGHTING									MIN	MINIMUM
	CIRCUIT.									MOCP	MAXIMUM OVERCURRENT PROTECTION
										NBC	NATIONAL BUILDING CODE
										NECB	NATIONAL ENERGY CODE FOR BUILDINGS
										NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
										O.H.	OVER HEAD
										Р	POLE
											PHASE (ALT: Ø)
											PANEL
											SURGE SUPPRESSION DEVICE
											SMOKE
											SQUARE FEET
											STAINLESS STEEL
										V	VOLTS
											VOLT-AMPS
										W	WATTS
										W/	WITH
										W/O	WITHOUT
										XFMR	TRANSFORMER

SPECIFICATION

- THIS SPECIFICATION SHALL BE READ IN CONJUNCTION WITH ALL CHANGE ORDERS, ADDENDAS, ETC. ISSUED BY THE CONSULTANT AND FORM PART OF THE CONTRACT DOCUMENTS, WORK TO INCLUDE ALL MATERIALS AND LABOR REQUIRED TO COMPLETE THE ELECTRICAL SYSTEMS DESCRIBED IN THE DRAWINGS AND THIS SPECIFICATION.
- DRAWINGS, CONTRACT ADDENDA, PROPOSED CHANGE NOTICES, SITE INSTRUCTIONS, OR FACSIMILE THE ELECTRICAL DRAWINGS AND SPECIFICATIONS ARE TO BE READ IN CONJUNCTION WITH ONE ANOTHER. A REQUIREMENT INDICATED ON THE DRAWINGS SHALL BE TAKEN TO BE INCLUDED AS A CONTRACTUAL OBLIGATION. WHERE INFORMATION IS CONFLICTING
- BETWEEN THE DRAWINGS AND SPECIFICATIONS, THE SPECIFICATIONS ARE TO BE FOLLOWED. WHERE THE CONTRACTOR IS UNSURE OF THE INTENT BEHIND THE DISCREPANCY BETWEEN THE SPECIFICATIONS AND THE DRAWINGS THE CONTRACTOR IS TO REQUEST A WRITTEN RULING FROM THE ENGINEER ON THE FINAL DIRECTION FOR THE WORK

INVOLVED. IF NO WRITTEN RULING IS OBTAINED, THE CONTRACTOR MUST USE THE HIGHEST COST OPTION AS PART OF THEIR

- THE ELECTRICAL DRAWINGS ARE DIAGRAMMATIC AND APPROXIMATE TO SCALE. THEY ARE TO BE USED TO ESTABLISH SYSTEM DESIGN AND INSTALLATION INTENT. FINAL ROUTING OF ALL WIRING AND EQUIPMENT PLACEMENT SHALL BE COORDINATED BETWEEN THE ELECTRICAL CONTRACTOR AND THE GENERAL CONTRACTOR THE TERM 'ELECTRICAL CONTRACTOR' SHALL REFER TO THE PRIME ELECTRICAL CONTRACTOR INCLUSIVE OF ANY SUB-CONTRACTORS
- RETAINED TO PERFORM ANY ASPECT OF MECHANICAL WORK, DATA CABLING, SECURITY EQUIPMENT, AND FIRE ALARM. STANDARD OF ACCEPTANCE ON WORKMANSHIP
- ALL MATERIALS USED AS PART OF THIS WORK SHALL BE NEW AND SHALL CONFORM TO THE LATEST EDITION OF THE CANADIAN ELECTRICAL CODE
- THE LOCAL JURISDICTION CODES (MBC, WEB, MB HYDRO STANDARDS) 1.4.1.3. THE NATIONAL BUILDING CODE
- 1414 ALL REQUIRED CSA STANDARDS
- THE NATIONAL ENERGY CODE OF CANADA FOR BUILDINGS 1.4.2.

THE ELECTRICAL DRAWINGS AND SPECIFICATION ARE 1

- ANY MATERIALS/PRODUCTS LISTED WITH NO ASSOCIATED STANDARD SHALL BE OF BEST AVAILABLE COMMERCIAL QUALITY. ALL WORK TO BE PERFORMED IN AN ORGANIZED HIGH QUALITY MANNER AND PERFORMED BY A LICENSED CONTRACTOR AND QUALIFIED TRADESMAN. A COMPETENT FOREMAN SHALL BE ASSIGNED BY THE ELECTRICAL CONTRACTOR TO OVERSEE ALL WORK PERFORMED TO THE SATISFACTION OF THE ENGINEER.
- ALL WORK PERFORMED IS TO BE OF THE HIGHEST STANDARD THROUGHOUT TO THE MINIMUM REQUIREMENTS OF THE CURRENT TRADE PRACTICES FOR ELECTRICAL INSTALLATIONS ELECTRICAL CONTRACTOR TO COORDINATE WORK OF THEIR SUB-TRADES WITH GENERAL CONTRACTOR AND ALL OTHER TRADES TO
- ON ANY PARTICULAR PRODUCT UNIFORMITY OF MANUFACTURER SHALL BE MAINTAINED ACROSS THE ENTIRE BUILDING UNLESS SPECIFICALLY CALLED FOR. GUARANTEE/WARRANTY
- ALL WORK COMMENCED UNDER THIS SCOPE INCLUDING WORKMANSHIP AND MATERIALS SHALL BE GUARANTEED FOR A PERIOD OF ONE 1.6.1. (1) YEAR AFTER ENGINEERS FINAL CERTIFICATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPAIR OR REPLACEMENT OF ANY DEFECTIVE PART OF THEIR WORK AND ANY ASSOCIATED DAMAGE ASSOCIATED WITH THE DEFECT AT THEIR OWN EXPENSE DURING THE TERM OF THE WARRANTY PERIOD. THIS DOES NOT APPLY TO COMPONENT FAILURE DUE TO IMPROPER USE OR NORMAL
- THE GUARANTEE SHALL NOT REPLACE ANY OTHER GUARANTEES IN PLACE THAT WOULD BE OF A LONGER TIME PERIOD BUT RATHER COVERS ELEMENTS NOT COVERED BY THOSE SPECIFIC GUARANTEES.
- CONTRACT TO BE RESPONSIBLE FOR ASSEMBLING A FULL LIST OF WARRANTY PERIODS FOR ALL EQUIPMENT AND PROVIDING THAT INFORMATION TO THE BUILDING OWNER.
- MOBILIZATION AND EXECUTION 2.1. ALL WORK SHALL BE IN COMPLETE CONFORMANCE WITH THE REQUIREMENTS OF THE CURRENT VERSIONS OF THE NATIONAL BUILDING CODE OF CANADA AS WELL AS THE CANADIAN ELECTRICAL CODE AND THE REGULATIONS OF THE LOCAL AUTHORITY HAVING JURISDICTION'S FLECTRICAL INSPECTION DEPARTMENT
- THE ELECTRICAL CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS REQUIRED AS PART OF THIS WORK AT THEIR EXPENSE. ELECTRICAL CONTRACTOR TO COORDINATE ALL REQUIRED INSPECTIONS WITH THE LOCAL ELECTRICAL INSPECTOR.
- THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLETION OF ALL WORK IN A CONSISTENT MANNER WITH THE DRAWINGS AND SPECIFICATIONS. ANY WORK EXECUTED IN A CONTRARY MANNER SHALL BE CORRECTED AT THE COST OF THE ELECTRICAL CONTRACTOR. WHERE THE INTENT OF THE DRAWING IS UNCLEAR, THE CONTRACTORS SHALL RECEIVE WRITTEN DIRECTION FROM THE ENGINEER BEFORE PROCEEDING WITH ANY WORK.
- THE CONTRACTOR SHALL SUPERVISE, LAYOUT AND MEASURE ALL OF THEIR OWN WORK OR EMPLOY A COMPETENT ENGINEER TO DO SO. FIGURES, DETAIL AND ENLARGED PLANS SHALL TAKE PRECEDENCE OVER SCALED DRAWINGS WHERE EQUIPMENT MUST BE RECESSED OR OPENINGS WITHIN ARCHITECTURAL/STRUCTURAL ASSEMBLIES ARE REQUIRED, THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING THE EQUIPMENT/MATERIAL AND COORDINATING THE REQUIRED MEASUREMENTS AND OPENING REQUIREMENTS WITH THE OTHER CONTRACTORS SO AS NOT TO HOLD UP ANY WORK.
- ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPAIR OR REPLACEMENT OF ANY DAMAGED PROPERTY/WORK CAUSED BY THE IMPROPER LOCATION OF ELECTRICAL MATERIALS/EQUIPMENT OR IMPROPER EXECUTION OF WORK. CUTTING, CORING AND PATCHING
- E.C. TO COORDINATE ALL CUTTING PATCHING AND CORING REQUIRED AS PART OF THE ELECTRICAL INSTALLATION. THE ELECTRICAL CONTRACTOR SHALL CARRY THE COSTS FOR ALL ELEMENTS OF THE PROCESS. CUTTING, PATCHING AND CORING SHALL BE CONDUCTED BY THE GENERAL CONTRACTOR. ANY CUTTING/MODIFICATION OF ANY STRUCTURAL MEMBERS SHALL ONLY BE DONE WITH THE CONSENT OF THE STRUCTURAL ENGINEER.
- IF ANY WORK CONDUCTED BY THE ELECTRICAL CONTRACTOR DAMAGES WORK PERFORMED BY ANOTHER TRADE, THE ELECTRICAL CONTRACTOR SHALL REPAIR THAT WORK AT THEIR OWN EXPENSE TO THE SATISFACTION OF THAT TRADE. FOR CONDUIT INSTALLATIONS WHERE THE FLOOR SLAB MUST BE CUT/DRILLED, THE FLOOR SHALL BE DRY CORE DRILLED. UPON
- COSTS FOR ALL ELEMENTS OF THIS PROCESS IN THEIR PRICE INCLUDING X-RAY, STRUCTURAL ENGINEER REVIEW ETC. ACCESS DOORS ELECTRICAL WORK SHALL BE COMMENCED AND LAID OUT IN SUCH A MANNER TO MINIMIZE THE NUMBER OF ACCESS DOORS REQUIRED.

COMPLETION OF THE INSTALLATION, THE OPENINGS SHALL BE FIRE STOPPED. THE ELECTRICAL CONTRACTOR SHALL CARRY THE

- ALL ACCESS DOOR LOCATIONS TO BE REVIEWED PRIOR TO INSTALLATION. FOR ACCESS TO EQUIPMENT, PULL BOXES AND JUNCTION BOXES, ACCESS DOORS ARE TO BE LOCATED IN AREAS WITH REMOVABLE
- WHERE LOCATING EQUIPMENT, PULL BOXES AND JUNCTION BOXES ABOVE A REMOVABLE TYPE CEILING IS NOT POSSIBLE, THE 2.5.3. ELECTRICAL CONTRACTOR IS TO PROVIDE AND INSTALL ACCESS DOORS REQUIRED FOR SERVICING. ACCESS DOORS TO BE CONSTRUCTED OF NOT LESS THAN 14 GAUGE STEEL, PRIME COATED AND PAINTED TO MATCH
- ACCESS DOORS TO BE HELD CLOSED BY CAPTIVE TYPE STUDS. WHERE ACCESS PANELS ARE TO BE USED, SHOP DRAWINGS ARE TO BE SUBMITTED FOR ARCHITECTURAL REVIEW PRIOR TO

- 2.6. SEALING AND FIRE PROTECTION:
- ALL PENETRATIONS FOR CABLING, CONDUIT ETC. REQUIRED THROUGH ANY FIRE RATED ASSEMBLIES SHALL HAVE THE FIRE RATING MAINTAINED BY SUITABLE FIRE STOPPING MEASURES. CONTRACTOR SHALL PROVIDE DETAILS ON THE FIRE STOP MEASURES PROVIDED TO THE LOCAL AUTHORITY HAVING JURISDICTION AS
- 2.7. ALL CONDUIT, JUNCTION BOXES, HANGERS, CABLE TRAYS, JUNCTION BOXES, ETC. TO HAVE A GALVANIZED FINISH TO HAVE A PRIMED FINISH FOR PAINTING. COORDINATE ANY PAINTING REQUIREMENTS WITH THE GENERAL CONTRACTOR.
- ALL PANELS OR FINISHED ELECTRICAL EQUIPMENT THAT IS SCRATCHED OR MARKED UP DURING INSTALLATION TO BE TOUCHED UP AS REQUIRED TO PROVIDE A SATISFACTORY FINISH TO THE ENGINEERS REQUIREMENTS A RECEPTACLE OR OUTLET MAY BE RELOCATED WITHIN 3.0 METERS OF THE ORIGINAL LOCATION SHOWN ON THE PLANS WITHOUT
- ADDITIONAL CHARGE FROM THE ELECTRICAL CONTRACTOR SO LONG AS THE CONTRACTOR RECEIVES THIS INSTRUCTION PRIOR TO

3.1. SHOP DRAWINGS:

- PRIOR TO SUBMISSION THE ELECTRICAL CONTRACTOR SHALL REVIEW ALL SHOP DRAWINGS AND MARK AS REVIEWED. THE CONTRACTOR SHALL FURNISH TO THE ENGINEER A SET OF SHOP DRAWINGS IN DIGITAL PDF FORMAT FOR THE ENGINEER'S APPROVAL ON ALL MAJOR EQUIPMENT AND FIXTURES. THIS SHOULD INCLUDE, BUT NOT BE LIMITED TO: LUMINAIRES, PANELS, DISCONNECTS, DISTRIBUTION EQUIPMENT, TRANSFORMERS, EXIT SIGNS, OCCUPANCY SENSORS, BATTERY PACKS, FIRE ALARM EQUIPMENT AND TELECOMMUNICATIONS EQUIPMENT AND CABLING.
- THE ENGINEER SHALL BE PERMITTED A MINIMUM OF 5 BUSINESS DAYS TO REVIEW SHOP DRAWINGS. FOR SHOP DRAWING PACKAGES INCLUDING MORE THAN 20 UNIQUE ELEMENTS TO REVIEW. 10 BUSINESS DAYS SHALL BE PERMITTED FOR SHOP DRAWING REVIEW. SHOP DRAWING PACKAGES SHALL BE SPLIT UP IN A REASONABLE FASHION AND SHALL NOT ALL BE ASSEMBLED INTO A SINGLE
- SHOP DRAWINGS THAT ARE NOT LEGIBLE SHALL BE IMMEDIATELY REJECTED. SHOP DRAWINGS ARE TO BE PROJECT SPECIFIC, NOT GENERIC. THEY ARE TO BE MARKED UP SUCH THAT IT IS CLEARLY TAGGED WHICH SPECIFIED PRODUCT IT IS TO REPRESENT. SHOP DRAWING SHALL ALSO BE MARKED UP (WITH ARROWS, LINES ETC.) SO THAT IT IS CLEAR WHAT DATA APPLIES TO THE SUBMISSION. SHOP DRAWINGS SUBMITTED WITHOUT THIS INFORMATION SHALL BE REJECTED.
- THE ENGINEER'S REVIEW OF THE SHOP DRAWINGS SHALL BE FOR GENERAL DESIGN CONFORMANCE ONLY AND DOES NOT ALLEVIATE THE CONTRACTOR OR THEIR SUPPLIERS FROM PROVIDING A FULLY FUNCTIONAL SYSTEM THAT WILL FIT WITHIN THE DESIGN/SPACE CONSTRAINTS. ANY DEVIATIONS NOTED ON THE SHOP DRAWINGS OR COVER LETTER ARE NOT AN APPROVAL OF DEVIATION FROM THE
- THE CONTRACTOR IS RESPONSIBLE FOR THE VERIFICATION OF ALL EQUIPMENT AND SITE DIMENSIONS. WORK PERFORMED PRIOR TO THE APPROVAL OF SHOP DRAWINGS ARE PERFORMED AT THE SOLE LIABILITY OF THE CONTRACTOR. 3.2. OPERATION AND MAINTENANCE MANUALS: THE ELECTRICAL CONTRACTOR SHALL PRODUCE A SET OF OPERATIONS MANUALS FOR THE OWNER THAT INCLUDES THE FOLLOWING
- OPERATIONS AND MAINTENANCE MANUALS FOR ALL MAJOR EQUIPMENT ON THE PROJECT INCLUDING THE ORIGINAL SUBMITTAL INFORMATION INDICATING EQUIPMENT PERFORMANCE AND ELECTRICAL CHARACTERISTICS. ALL FINAL TESTING DATA SUCH AS ANY MEGGER TEST DATA REQUIRED AND THE FIRE ALARM VERIFICATION REPORT.
- FINAL RECORD DRAWINGS (SEE REQUIREMENTS BELOW) LIGHTING AND ELECTRICAL CONTROLS SCHEMATIC DRAWINGS. THE OPERATIONS AND MAINTENANCE MANUALS SHALL BE DELIVERED TO THE ENGINEER IN DIGITAL FORMAT FOR THEIR FINAL REVIEW PRIOR TO FINAL SUBMISSION TO THE OWNER.
- 3.3. AS-BUILT DRAWINGS A COPY OF ALL ELECTRICAL PRINTS SHALL BE KEPT ON SITE AT ALL TIMES FOR THE PURPOSE OF REVIEW AND MARKUP. ALL DEVIATIONS FROM THE ELECTRICAL DRAWINGS SHALL BE RECORDED ON ONE SET OF PRINTS INCLUDING ALL PROJECT CHANGES SUCH AS ADDENDA'S, CHANGE ORDERS AND CLARIFICATIONS.
- THE ELECTRICAL CONTRACTOR SHALL RETAIN A DRAFTING SERVICE TO PRODUCE A FINAL SET OF ELECTRICAL PRINTS THAT IS REPRESENTATIVE OF THE FINAL INSTALLATION BASED ON THE MARKED UP SET ON SITE. THESE FINAL SET OF DRAWINGS IS TO BE MARKED AS 'RECORD DRAWINGS' AND ARE TO BE SUBMITTED TO THE ENGINEER FOR
- UPON ACCEPTANCE OF THE RECORD DRAWINGS THE CONTRACTOR IS TO PROVIDE A COPY OF THE RECORD DRAWINGS TO THE OWNER AS PART OF THE OPERATIONS AND MAINTENANCE MANUAL PACKAGE.

FINALIZATION AND TURNOVER

GENERAL

- ALL ASPECTS OF ELECTRICAL WORK SHALL BE TESTED AND CHECKED FOR PROPER OPERATION AS TYPICAL TO INDUSTRY MEGGER TESTS SHALL BE CONDUCTED ON AN ELECTRICAL CIRCUIT PRIOR TO IT BEING ENERGIZED AND SHALL BE DONE TO THE REQUIREMENTS OF THE CANADIAN ELECTRICAL CODE. THE RESULTS OF THESE TESTS SHALL BE TO THE SATISFACTION OF ANY
- ALL TEST DATA THAT DOES NOT MEET THE REQUIREMENTS OF THE CANADIAN ELECTRICAL CODE, THE MANUFACTURERS REQUIREMENTS, OR THE SATISFACTION OF THE ENGINEER, THE SYSTEM SHALL BE REPAIRED IN A METHOD APPROVED BY THE ENGINEER AND RETESTED AT THE EXPENSE OF THE CONTRACTOR. UPON COMPLETION OF WORK, PRIOR TO OWNER/TENANT TAKEOVER OR FINAL INSPECTION, THE LOAD BALANCE ON ALL

AUTHORIZED INSPECTION OR COMMISSIONING AGENT AND THE ENGINEER AND SUBMITTED FOR APPROVAL.

- ELECTRICAL FEEDERS SHALL BE REVIEWED AT THE DISTRIBUTION CENTER AND PANELS. THE TEST SHALL BE CONDUCTED WHILE ENERGIZING ALL POSSIBLE LOADS AND REVIEWING THE LOAD CURRENT BALANCE. RECONNECT ALL CIRCUITS AND RETEST IF THE
- FIRE ALARM ANY INSTALLATION OF/MODIFICATION TO THE FIRE ALARM SYSTEM SHALL BE ACCOMPANIED BY A FIRE ALARM VERIFICATION REPORT. SPECIFIC REQUIREMENTS FOR THIS REPORT CAN BE FOUND BELOW UNDER FIRE ALARMS.
- THE ELECTRICAL CONTRACTOR SHALL KEEP THE WORK SITE CLEAR OF ALL DEBRIS, BOXES, WASTE ETC. FROM ALL WORK ASSOCIATED WITH THEIR TRADE. ALL WORK TO BE COMPLETED IN A CLEAN, FINISHED MANNER TO THE SATISFACTION OF THE ENGINEER AND OWNER. ALL DEVICES AND FIXTURES ARE TO BE WIPED DOWN AND CLEANED BEFORE FINAL TURN OVER OF THE PROJECT TO THE OWNER.
- HANDLING OF ALL LAMPS SHALL BE DONE IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS AND DONE SO WITH A CLEAN SET OF GLOVES TO ENSURE THE LIFESPAN OF THE PRODUCT ANY LEFTOVER MATERIALS OR PACKAGING THAT CAN BE RECYCLED SHALL BE RECYCLED. 3.6. ENGINEERS INSPECTION
- THE ENGINEER SHALL BE NOTIFIED BY THE ELECTRICAL CONTRACTOR ONCE THE WORK IS READY FOR ROUGH-IN INSPECTION PRIOR TO THE CLOSING OF ANY WALLS. THE ENGINEER MUST BE GIVEN A MINIMUM THREE (3) DAYS NOTICE PRIOR TO THE CLOSING OF WALLS THE ENGINEER SHALL BE NOTIFIED BY THE ELECTRICAL CONTRACTOR ONCE THE WORK IS READY FOR INSPECTION PRIOR TO THE FINAL

- INSTALLATION OF THE CEILING OR THE PLACEMENT OF CEILING TILES. THE ENGINEER MUST BE GIVEN A MINIMUM THREE (3) DAYS NOTICE PRIOR TO THE CLOSING OF WALLS FOR THIS INSPECTION. THE ENGINEER SHALL BE NOTIFIED BY THE ELECTRICAL CONTRACTOR ONCE THE WORK IS READY FOR FINAL INSPECTION PRIOR TO
- THE FINAL INSTALLATION OF THE CEILING OR THE PLACEMENT OF CEILING TILES. THE ENGINEER MUST BE GIVEN A MINIMUM THREE (3) DAYS NOTICE PRIOR TO THE EXPECTED INSPECTION DATE TO FACILITATE A TIMELY RESPONSE ON CERTIFICATION FOR OCCUPANCY IF WORK IS NOT SUBSTANTIALLY COMPLETE FOR ANY OF THE ABOVE INSPECTIONS TO WHERE AN ADDITIONAL ENGINEERING
- INSPECTION OR SITE VISIT IS REQUIRED, THE COST OF THE SITE VISIT SHALL BE BORNE BY THE ELECTRICAL CONTRACTOR. 3.7.1. ELECTRICAL CONTRACTOR TO PROVIDE TRAINING TO THE BUILDING OWNER OR OWNER'S REPRESENTATIVE ON THE BUILDING SYSTEMS
- AND CONTROLS TO REVIEW THE INSTALLATION AND HOW TO MAINTAIN IT. THE TRAINING MUST COVER THE FOLLOWING, BUT NOT
- 3.7.1.1. LIGHTING CONTROLS SYSTEMS AND FEATURES INSTALLED FOR ALL ASPECTS OF THE BUILDING COVERING HOW TO MAKE ADJUSTMENTS WHERE REQUIRED AND LOCATING CONTROLLERS. REVIEW ALL INSTALLED PANELS OR MODIFICATION TO THE EXISTING PANELS

4.1. ALL FEEDS WITHIN RETURN AIR PLENUMS ARE TO BE RATED FOR THAT PURPOSE. AC90 AND WIRE IN CONDUIT. ACWU IS NOT ACCEPTABLE 4.2. ALL EXPOSED AND CONCEALED WIRING IS TO BE IN CONDUIT. BX ARMORED CABLE MAY BE USED IN STUD PARTITION WALL APPLICATIONS NOT EXCEEDING 30' (9.144M) IN LENGTH. BX ARMORED CABLE MAY BE USED FOR RECESSED LUMINAIRE DROPS NOT EXCEEDING 30' (9.144M)

- 4.3. IN SUITES OF COMBUSTIBLE CONSTRUCTION, WIRING METHODS SUITABLE FOR COMBUSTIBLE CONSTRUCTION MAY BE USED AS ACCEPTABLE BY LOCAL AHJ AND CODE.
- 4.4. USE OF ALUMINUM FEEDERS IS ACCEPTABLE FOR EQUIPMENT AND FEEDERS RATED OVER 100A. FEEDERS FOR EQUIPMENT WITH ELECTRICAL CONNECTIONS SUBJECT TO FREQUENT VIBRATION MUST BE TRANSITIONED TO COPPER CONDUCTORS BEFORE CONNECTING TO THE EQUIPMENT. ALUMINUM FEEDERS TO BE SIZED TO MEET OR EXCEED THE AMPACITIES OF THE COPPER FEEDERS SHOWN. ALUMINUM CANNOT BE USED FOR BRANCH WIRING OR FEEDERS TO EQUIPMENT RATED 100A OR LESS UNLESS OTHERWISE NOTED 4.5. ALL WIRING IS TO BE COPPER, 600V (90 DEGREE CELSIUS), RW90 X-LINK POLYETHYLENE UNLESS OTHERWISE INDICATED. MINIMUM WIRE SIZE IS #12 AWG UNLESS FOR USE WITH LOW VOLTAGE CONTROL WIRING. ALLOW FOR VOLTAGE DROP AS REQUIRED.
 - WIRING SHALL NOT BE RUN THROUGH A EXIT CORRIDOR OR STAIRWELL UNLESS SERVING DEVICES IN THAT AREA.

5.1. ALL CONDUIT IS TO BE ELECTRIC METALLIC TUBING (EMT) UNLESS OTHERWISE INDICATED OR REQUIRED BY APPLICABLE CODES.

REVIEW OF SECURITY SYSTEMS INSTALLED.

- ALL CONDUITS ARE TO BE CONCEALED WHEREVER POSSIBLE. OBTAIN APPROVAL OF ALL EXPOSED CONDUITS FROM OWNER AND ELECTRICAL CONSULTANT PRIOR TO INSTALLATION. USE PVC FOR ALL EXPOSED OUTDOOR, UNDERGROUND, IN CONCRETE, OR AS REQUIRED BY THE AUTHORITY HAVING JURISDICTION.
- ALL FEEDS WITHIN RETURN AIR PLENUMS ARE TO BE RATED FOR THAT PURPOSE. AC90 AND WIRE IN CONDUIT. ACWU IS NOT ACCEPTABLE ILL ALL VOIDS AND OPENINGS CREATED BY NEW, EXISTING OR REMOVED ELECTRICAL THROUGH FIRE RATED WALLS AND FLOOR/CEILING ASSEMBLIES USING AN APPROVED UL/ULC LISTED FIRE STOP SYSTEM WITH A RATING NOT LESS THAN THE FIRE RESISTANCE RATING REQUIRED FOR THE FIRE SEPARATION.

6.1. ALL RECEPTACLES ARE TO BE SPECIFICATION GRADE, WHITE, 15A, 120VAC. RECEPTACLE ARE TO BE MOUNTED AT 450MM A.F.F. UNLESS OTHERWISE INDICATED. RECEPTACLES MOUNTED ABOVE COUNTER ARE TO BE 150MM ABOVE SURFACE AREA. CONFIRM EXACT MOUNTING LOCATIONS AND HEIGHTS WITH ARCHITECTURAL ELEVATIONS. PROVIDE LAMACOID LABELS WITH AMPERAGE, VOLTAGE, AND PHASE FOR ALL

- RECEPTACLES OTHER THAN STANDARD 15, 120VAC. RELOCATE ALL OUTLETS REQUESTED BY OWNER OR ELECTRICAL CONSULTANT PRIOR TO ROUGH-IN. RELOCATE OUTLETS AT NO ADDITIONAL COST TO THE OWNER IF REQUESTED BY THE AUTHORITY HAVING JURISDICTION.
- 6.3. COVERPLATES FOR ALL FLUSH MOUNTED DEVICES ARE TO BE STAINLESS STEEL.

- 7.1. ELECTRICAL CONTRACTOR SHALL PROVIDE CONNECTIONS, DISCONNECTS, MOTOR CONTROL STARTERS, RELAYS, SWITCHES, TIMERS, CONTRACTORS, ETC. TO FULLY INSTALL MECHANICAL EQUIPMENT UNLESS OTHERWISE NOTED. REFER TO MECHANICAL DRAWINGS FOR LOCATION OF MECHANICAL EQUIPMENT.
- ALL LOW VOLTAGE CONTROLS AND CONTROL WIRING WILL BE THE RESPONSIBILITY OF THE MECHANICAL TRADE AND/OR HIS CONTROL SUB-TRADE. 120V CONNECTION FOR CONTROLS CONTRACTOR SHALL BE PROVIDED BY ELECTRICAL CONTRACTOR. ELECTRICAL CONTRACTOR SHALL CONFIRM WITH THE MECHANICAL TRADE, THE SIZE, CHARACTERISTICS, AND LOCATIONS OF ALL MECHANICAL EQUIPMENT BEFORE INSTALLATION OF CONDUITS, OUTLETS, HEATERS ETC. ELECTRICAL CONTRACTOR TO MODIFY AND REVISE
- BREAKER, FUSES, AND WIRING TO MATCH NAMEPLATE OF EQUIPMENT ON SITE. ELECTRICAL CONTRACTOR SHALL PROVIDE ELECTRIC HEATERS AS SHOWN. STANDARD WATTAGE. HEATERS IN PUBLIC SPACES TO HAVE BUILT IN THERMOSTATS UNLESS OTHERWISE NOTED. HEATERS IN SUITES TO HAVE WALL MOUNTED THERMOSTAT. BASEBOARDS ALONG GLASS PARTITIONS SHALL HAVE A CLEAN BACK FINISH.

8.1. E.C. TO PROVIDE A COMPLETE CODE CONFORMING FIRE ALARM SYSTEM. ALL FIRE ALARM DEVICES, WIRING, AND ZONES ARE TO BE PROVIDED IN ACCORDANCE WITH LATEST VERSION OF CAN/ULC-S524. THE FIRE ALARM SYSTEM SHALL BE A SINGLE STAGE, ADDRESSABLE

- 8.2. A FIRE ALARM VERIFICATION REPORT WITH NO DEFICIENCIES IS TO BE PROVIDED FOR ALL FIRE ALARM DEVICES ADDED OR RELOCATED IN ACCORDANCE WITH CAN/ULC \$537. PROVIDE REQUIRED FIELD ADJUSTMENTS AND REPAIR AS REQUIRED FROM VERIFICATION TESTING.
- PROVIDE COMPLETE FIRE ALARM MONITORING INSTALLATION IN ACCORDANCE WITH CAN/ULC-S561. ALL NEW FIRE ALARM DEVICES SHALL BE OF ONE MANUFACTURER AND MATCH EXISTING. ACCEPTED MANUFACTURERS: NOTIFIER, SIMPLEX, SIEMENS, MIRCOM. SUPPLIER TO PROVIDE WITH SHOP DRAWINGS A SYSTEM WIRING DIAGRAM SPECIFIC TO THE PROJECT.

EMERGENCY LIGHTING

9.1. E.C. SHALL PROVIDE A COMPLETE CODE CONFORMING EMERGENCY LIGHTING AND EXIT SYSTEM. EGRESS SIGNAGE SHALL BE GREEN PICTOGRAM, UNLESS MATCHING EXISTING EXIT RED EXIT AND ACCEPTABLE TO AHJ EMERGENCY LIGHTING SHALL BE TIED TO THE NORMAL LIGHTING CIRCUIT TO ILLUMINATE IF NORMAL POWER IS LOST ON THE LOCAL AREA LIGHTING CIRCUIT. E.C. TO PROVIDE CONTACTORS/RELAYS AS REQUIRED TO INTERLOCK WITH NORMAL LIGHTING CIRCUITS.

EMERGENCY LIGHTING LAMPS SHALL BE LED PAR18/MR16 WITH A MINIMUM OF 6W PER HEAD. WIRING TO BE SIZED AS PER MANUFACTURER'S

INSTRUCTIONS TO ACCOMMODATE VOLTAGE DROP AND CIRCUIT WATTAGE WITH MINIMUM #12 UTILIZED. VOLTAGE OF EMERGENCY LIGHTING

- IS TO BE LINIVERSAL 120-347V OR SELECTABLE EMERGENCY LIGHTING BATTERY BACKUP SHALL BE SIZED FOR A MINIMUM OF 30 MINUTES UNDER FULL LOAD OF EMERGENCY LIGHTING. SYSTEM VOLTAGE SHALL MATCH EXISTING IF PRESENT OR BE 12V/24V FOR NEW.
- 10.1. ELECTRICAL CONTRACTOR SHALL PROVIDE COMPLETE LIGHTING AND CONTROLS SYSTEM. ALTERNATES ARE NOT ACCEPTABLE WITHOUT APPROVAL BY ENGINEER AND CLIENT. INSTALL ALL LUMINAIRES AND LIGHTING CONTROLS IN ACCORDANCE WITH BARRIER FREE

REQUIREMENTS OF THE NATIONAL BUILDING CODE OF CANADA. 10.2. ELECTRICAL CONTRACTOR SHALL ENSURE LUMINARES PROVIDED ARE SUITABLE FOR SPECIFIED LOCATIONS INCLUDING EXTERIOR.

ELECTRICAL SCOPE

1.ELECTRICAL CONTRACTOR SHALL

4.EXISTING BUILDING SYSTEMS

INTERPRETATION

AFFECTED BY THIS CONDITION.

WITH THE GENERAL CONTRACTOR.

1.1. PROVIDE (A) COMPLETE AND FULLY FUNCTIONAL ELECTRICAL SYSTEM(S) IN COMPLIANCE WITH ALL FEDERAL, PROVINCIAL,

1.2. PROVIDE ALL NECESSARY LABOUR, EQUIPMENT, AND MISCELLANEOUS MATERIALS REQUIRED TO COMPLETE THE WORK

1.6. COORDINATE ANY REQUIREMENTS FOR WORK DURING NONSTANDARD HOURS WITH THE GENERAL CONTRACTOR 1.7. BE RESPONSIBLE FOR ANY LIFTING/HOISTING OF ELECTRICAL EQUIPMENT. COORDINATE LIFTING/HOISTING REQUIREMENTS

2.1.1. ELECTRICAL CONTRACTOR TO PROVIDE NEW LIGHTING FIXTURES AND CONTROLS AND EMERGENCY LIGHTING AS

3.1. ELECTRICAL CONTRACTOR TO PROVIDE NEW DISTRIBUTION PANELS AND BREAKERS TO TO SUIT ADDITION.

4.1. THE ELECTRICAL DRAWINGS ARE BASED ON AVAILABLE INFORMATION AS PROVIDED BY THE CLIENT AND VISUAL,

4.1.1. IF DURING THE COURSE OF RENOVATION WORKS A SITE CONDITION WOULD NOT ALLOW WORK TO PROCEED AS

4.2. THE ELECTRICAL CONTRACTOR SHALL CAREFULLY EXAMINE THE SITE TO DETERMINE THE EXISTING BUILDING/SITE CONDITIONS PRIOR TO SUBMITTING A TENDER PRICE. NO EXTRAS WILL BE PROVIDED FOR REVISIONS RESULTING FROM

5.1. ALL UNUSED OR ABANDONED WIRING, CONDUIT, HANGERS ETC. SHALL BE APPROPRIATELY TERMINATED AND REMOVED. 5.2 ANY BREAKERS NO LONGER IN SERVICE OR HAVE NO CONNECTED LOAD SHALL BE MARKED ON THE PANEL AS 'SPARE', A TYPED UPDATED PANEL SCHEDULE IS TO BE PROVIDED IN EACH PANEL WHERE CIRCUITS ARE ADDED/MODIFIED. 5.3. EQUIPMENT REMOVED IS TO BE RETURNED TO THE BUILDING OWNER/MANAGEMENT. IF EQUIPMENT IS NO LONGER

5.4. THE ELECTRICAL CONTRACTOR SHALL SEAL OFF ANY OPENINGS MADE BY REMOVING ANY MATERIALS OR EQUIPMENT

5.7. ALL EXISTING LUMINAIRES NOTED ON THE DRAWINGS AS TO BE REMOVED SHALL BE REMOVED AND DISPOSED OF. 5.7.1. ALL ABANDONED WIRING, CONDUIT. HANGERS ETC ASSOCIATED WITH EXCITING REMOVED LIGHTING AND CONTROLS

5.7.2. ALL CIRCUITS REMOVED AS PART OF THE SCOPE OF WORK ARE TO BE PULLED BACK TO THEIR ORIGINATING PANEL

5.7.3. ENSURE THAT ALL EXISTING RECEPTACLES ARE RE-FED POWER IF EXISTING CONNECTIONS ARE REMOVED BY THE

5.7.4. NOT ALL ITEMS FOR DEMOLITION ARE NOTED. THOSE SHOWN ARE FOR REFERENCE ONLY. E.C. TO REMOVE ALL DEVICES, WIRING, PATHWAYS INTERFERING WITH DEMOLITION AND RENOVATION AS REQUIRED

REMOVAL OF OTHER EXISTING COMPONENTS TO THE SATISFACTION OF THE ENGINEER.

CONTRACTOR AND PROVIDE FIRE STOPPING AS PER THE FIRE STOPPING SECTION IN THIS SPECIFICATION. 5.5. PROVIDE BLANK COVER PLATES FOR ANY TERMINATION BOXES TO REMAIN THAT ARE CONSISTENT WITH THE EXISTING 5.6. THE ELECTRICAL CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY DEFICIENCIES ENCOUNTERED ON SITE AND

COORDINATE ANY REQUIREMENTS TO MAINTAIN AN EXISTING FIRE RATING THROUGH THESE OPENINGS WITH THE GENERAL

EXISTING SITE CONDITIONS THAT WOULD HAVE BEEN EVIDENT FROM A SITE EXAMINATION.

REQUIRED, THE ELECTRICAL CONTRACTOR IS TO DISPOSE OF THE EXISTING EQUIPMENT.

REQUEST WRITTEN DIRECTION ON HOW TO PROCEED WITH WORK.

TO BE REMOVED AND APPROPRIATELY TERMINATED

AND TERMINATED APPROPRIATELY.

NON-DESTRUCTIVE, OBSERVATIONS OF THE SITE WHERE POSSIBLE. THE MECHANICAL CONTRACTOR SHALL EXAMINE THE SITE FOR EXISTING WORKS WHICH MAY IMPEDE DEMOLITION/RENOVATION/CONSTRUCTION AS INDICATED IN THE DESIGN. DRAWINGS. IF ANY DISCREPANCIES ARE FOUND, REPORT TO THE CONSULTANT AND OBTAIN A WRITTEN RULING OF

INDICATED IN THE CONTRACT DOCUMENTS, REPORT THE DISCREPANCY TO THE GENERAL CONTRACTOR. OBTAIN A WRITTEN RULING FROM THE CONSULTANT PRIOR TO PROCEEDING WITH RENOVATION ASPECTS WHICH ARE

3.3. PROVISION OF RECEPTACLES AS REQUIRED TO MEET THE DESIGN DOCUMENTS AND SPECIFICATIONS.

MUNICIPAL, AND LOCAL REGULATIONS, BY-LAWS, CODES, AND STANDARDS ENFORCED.

1.5. CARRY LIABILITY INSURANCE AS REQUIRED IN COMPLIANCE WITH THE CONTRACT DOCUMENTS

1.4. COORDINATE INSPECTIONS WITH LOCAL AUTHORITY HAVING JURISDICTIONS.

REQUIRED TO MEET THE DESIGN DOCUMENTS AND SPECIFICATIONS.

3.2. CONNECTION OF MECHANICAL EQUIPMENT AS PER DESIGN DOCUMENTS.

1.3. BE RESPONSIBLE TO OBTAIN AND CARRY COSTS FOR ANY NECESSARY PERMITS FOR WORK DESCRIBED.

HAZARDOUS, WET LOCATION AND INSULATED CEILINGS. 10.3. WALL HANDLE SWITCHES SHALL BE FLUSH AND MOUNTED AT 1200MM ABOVE FINISHED FLOOR UNLESS OTHERWISE SPECIFIED. ALL LIGHTING CONTROLS TO BE WHITE AND COMMERCIAL GRADE. COVER-PLATES FOR LIGHTING CONTROLS SUITE LIGHTING CONTROLS TO BE DECORA

- 11.1. PANELBOARDS SHALL BE COMPOSED OF THE NUMBER OF CIRCUIT BREAKERS WITH POLES AND TRIP RATINGS AS LISTED IN THE SCHEDULES. WHERE SPACE ONLY IS CALLED FOR, PROVIDE ALL MOUNTING BRACKETS, BUSBAR DRILLINGS, FILLER PLATES, ETC., TO FACILITATE INSTALLATION OF FUTURE BREAKERS. ALL PANELBOARDS SHALL BE SPRINKLER-PROOF AND HAVE LOCKABLE DOORS.
- 11.2. WHERE EXISTING PANELBOARDS ARE SHOWN TO BE REPLACED WITH NEW, CONTRACTOR SHALL RELOCATE ALL EXISTING BRANCH CIRCUITS TO NEW PANELBOARD AND PROVIDE NEW BREAKERS FOR EXISTING AND NEW CIRCUITS. 11.3. BREAKERS TO BE BOLT-ON TYPE AND MEET OR EXCEED THE AVAILABLE FAULT CURRENT INDICATED ON THE SINGLE LINE DIAGRAM. 600V TO HAVE A MINIMUM OF 22KA SCIC. 120/208V TO HAVE A MINIMUM OF 14KA UNLESS OTHERWISE NOTED. BREAKERS OF MULTIPLE POLE
- CONFIGURATIONS SHALL BE COMMON-TRIP SINGLE HANDLE, BREAKERS TO BE 3-POSITION (OPEN, TRIPPED, CLOSED) BOLT-IN. 11.4. PROVIDE TYPEWRITTEN PANEL SCHEDULES FOR ALL NEW OR MODIFIED CIRCUITS. AFFIX SCHEDULE TO PANEL DOORS. 11.5. LOAD CENTRES MAY BE UTILIZED IN SUITES.
- 12.1. PROVIDE LOAD INCREASE DATA TO HYDRO AS REQUIRED.

E0.0 ELECTRICAL - SPECIFICATIONS AND SYMBOL SCHEDULE

E0.1 ELECTRICAL - SITE PLAN

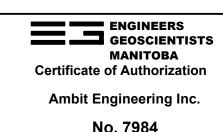
E1.0 ELECTRICAL LIGHTING PLAN

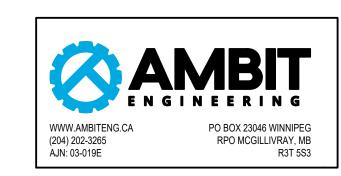
E2.0 ELECTRICAL POWER & SYSTEMS

E2.0 SERIES - POWER & SYSTEMS

E1.0 SERIES - LIGHTING







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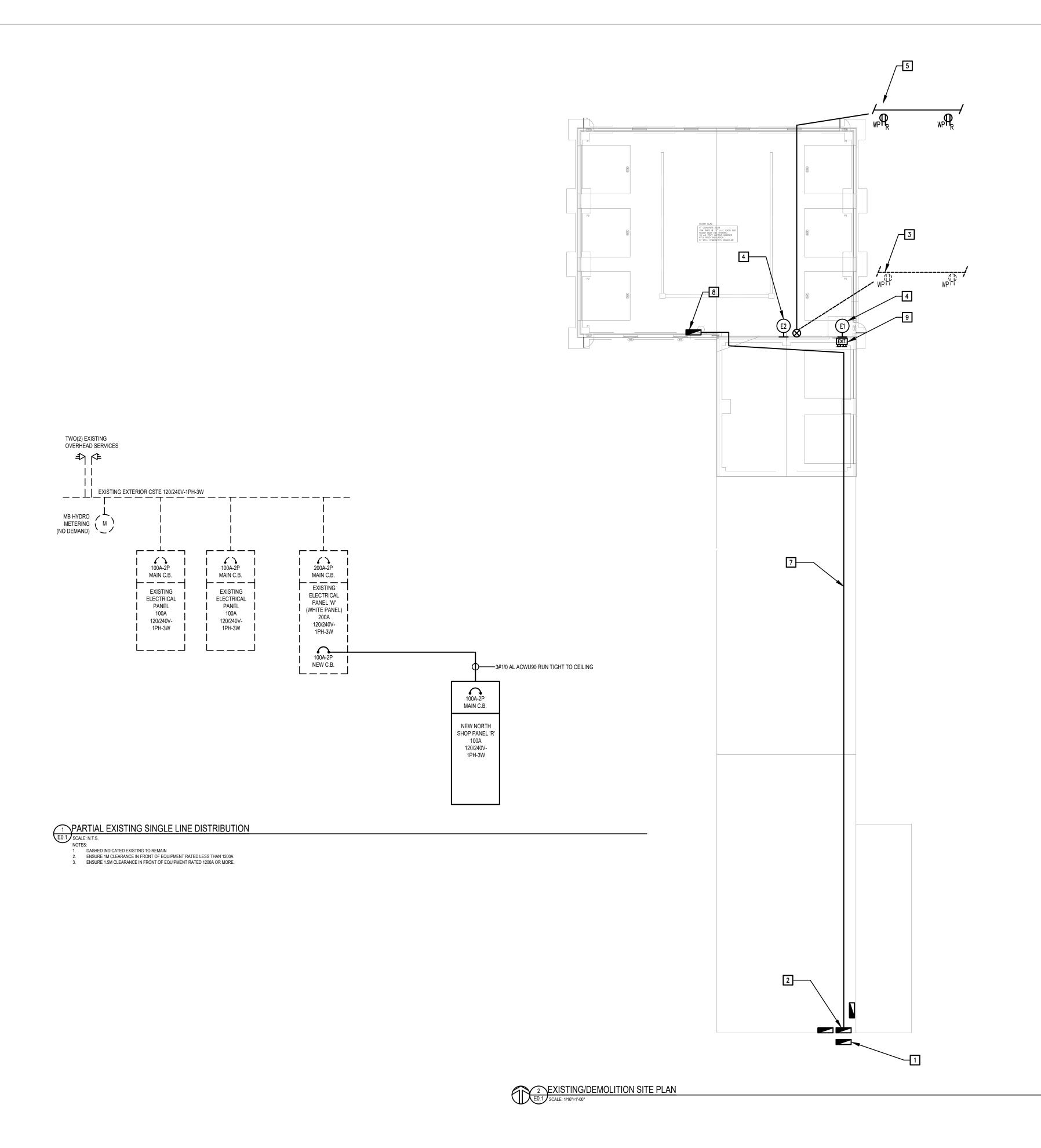


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CITY OF MORDEN PUBLIC WORKS BUILDING ADDITION - 234 COCHLAN DRIVE, MORDEN, MB

ELECTRICAL SPECIFICAITONS AND SYMBOL SCHEDULES

I.T.S. I.T.S. 1 OF 4



TERMINATED IN A WALL MOUNTED EXTERIOR CSTE WITH EXTERIOR MB HYDRO METERING TO REMAIN. EXISTING 200A 120/240V-1PH-3W
ELECTRICAL PANEL "W" (WHITE PANEL) TO
BE USED TO FEED NEW SUB-PANEL IN EXISTING FENCE MOUNTED RECEPTACLES FED UNDERGROUND FROM APPROXIMATE LOCATION TO BE DISCONNECTED AND RELOCATED TO NEW FENCE LOCATION. EXTEND/REROUTE WIRING TO NEW LOCATION AS REQUIRED. EXISTING EXTERIOR LIGHT FIXTURE TO BE DISCONNECTED AND RELOCATED TO NEW EXTERIOR WALL LOCATIONS. REFER TO LIGHTING LAYOUT. E.C. TO RECONNECT DISCONNECTED FENCE RECEPTACLES AT NEW FENCE LOCATION. EXTEND/REROUTE WIRING TO
NEW LOCATION AS REQUIRED. SITE
CONFIRM FENCE LOCATION WITH OWNERS REP ON SITE. PROVIDE NEW MATCHING CIRCUIT
BREAKER IN EXISTING ELECTRICAL PANEL
TO FEED NEW PANEL 'R'. PROPOSED ROUTING FOR NEW FEEDER
CABLE TO SERVE NEW ELECTRICAL
PANEL. SITE CONFIRM ROUTING TO AVOID EXISTING EQUIPMENT AS REQUIRED.

PROPOSED LOCATION FOR NEW ELECTRICAL PANEL 'R'.

REQUIRED.

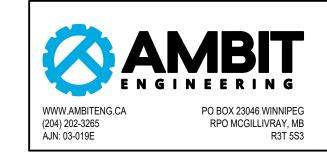
E.C. TO DISCONNECT EXISTING EXIT SIGNAGE MOUNTED ABOVE DELETED DOOR. SIGN TO BE ABOVE NEW WALL OPENING. EXTEND/REROUTE WIRING AS

DRAWING NOTES

EXISTING OVERHEAD SERVICES

PANEL: 'W' (WHITE EXISTING PANEL)					AMPACITY: 200A				
LOCATION: SOUTH SHOP						AGE: 12	20/240-1PH-3W		
FED FROM: CS	TE				мои	NTING:	SURFACE		
MINIMUM BREAKER AND PANEL SCIC RATING: EXISTING					MININ	/UM CIF	RCUITS: 40		
CCT#	CIRCUIT DESCRIPTION	BR	EAKER	BUS	BRE	AKER	CIRCUIT DESCRIPTION	CCT#	
1	SPACE			Α	100	A-2P	EXISTING NORTH SHOP PANEL	2	
3	SPACE			В				4	
5	SPACE			Α				6	
7	SPACE			В				8	
9	WEST STORAGE SHED	10	0A-2P	Α			SPACE	10	
11				В			SPACE	12	
13				Α			SPACE	14	
15				В			SPACE	16	
17	EXISTING HOT WATER TANK	2	0A-1P	Α	60,	A-2P	EXISTING FURNACE IN OFFICE	18	
19	SPACE			В				20	
21	SPACE			Α				22	
23	SPACE			В				24	
25	SPACE			Α			SPACE	26	
27	SPACE			В			SPACE	28	
29	SPACE			Α			SPACE	30	
31	SPACE			В			SPACE	32	
33	SPACE			А	100	A-2P	NEW NORTH SHOP AREA PANEL 'R'	34	
35	SPACE			В				36	
37	SPACE			А				38	
39	SPACE			В				40	





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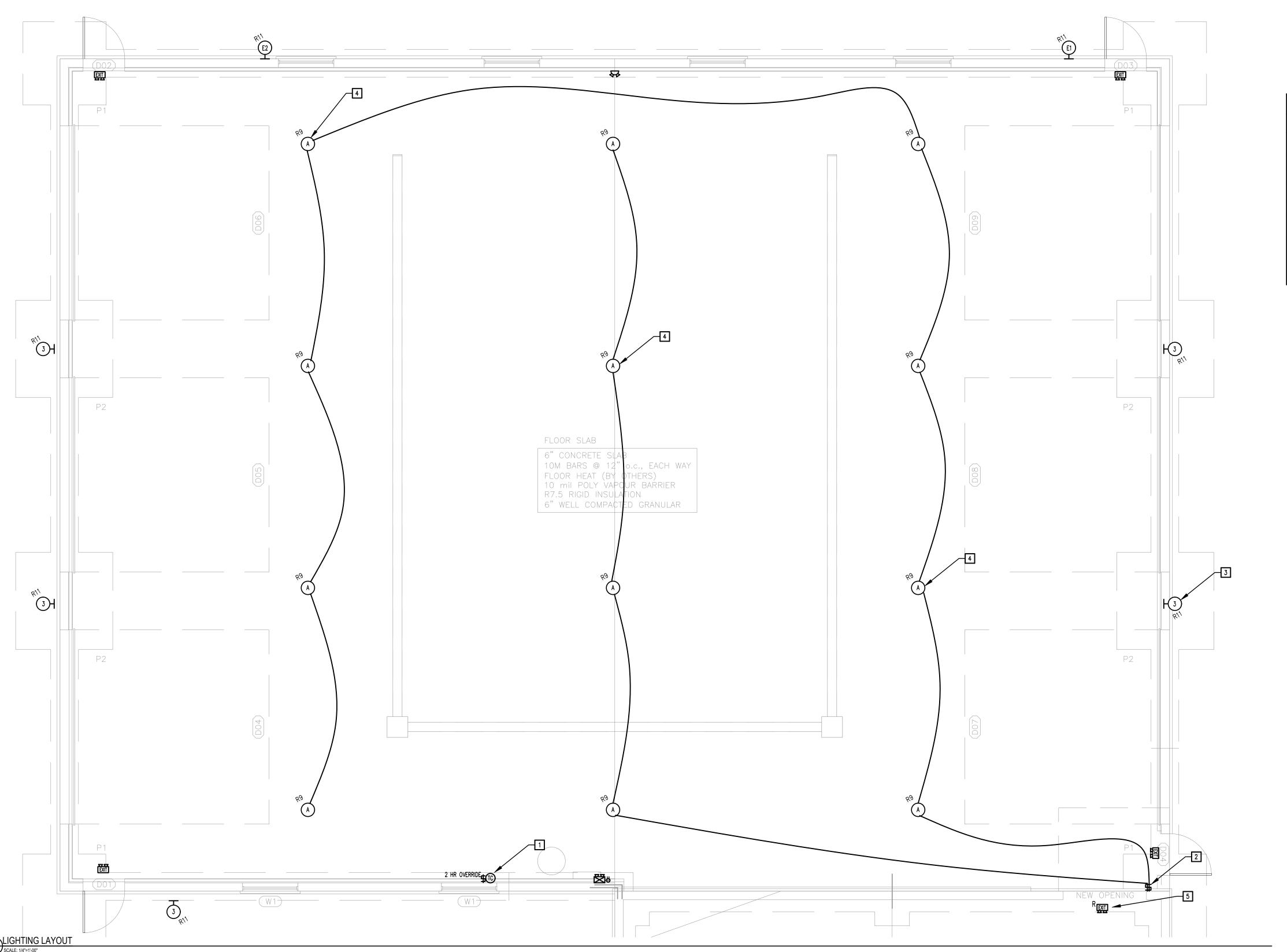


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	ELECTR	ICAL SITE PLAN	
DRAWN M.M.	CHECKED I.T.S.	DRAWING #	
DESIGN I.T.S.	SHEET 2 OF 4	E0.	1



				LUMINAIRE SCHEDULE	<u>.</u>			
TAG	DESCRIPTION	MOUNTING	MANUFACTURER	MODEL NO.	LAMPS	COLOUR TEMP	VOLTAGE	OPTIONS/COMMENTS
Α	LED ROUND HIGH BAY	SUSPENDED	LITHONIA	CPRB ALO13 UVOLT SWW9 80CRI DWH	132W LED	4000K	UVOLT	ALTERNATE FIXTURE IS ACCEPTABLE A LONG AS REQUIRED NECB WATTAGES ARE MET AND ACCETABLE BY OWNER
3	NEW OVERHEAD DOOR EXTERIOR FIXTURE	WALL MOUNTED	-	MATCH EXISTING	LED	-	-	MATCH WITH EXISTING WALL MOUNTE EXTERIOR FIXTURE
E1	EXISTING MAN DOOR EXTERIOR FIXTURE	WALL MOUNTED	-	EXISTING/RELOCATED	-	-	-	
E2	EXISTING WALL MOUNTED EXTERIOR FIXTURE	WALL MOUNTED	-	EXISTING/RELOCATED	-	-	-	

lotes:
1) PROVIDE PHOTOCELL CONTROL FOR ALL OUTDOOR LUMINAIRES.
2) EXACT TAPE LIGHT LENGTHS TO BE SITE CONFIRMED. REFER TO ARCHITECTURAL FOR MOUNTING LOCATIONS.
3) ALL FIXTURES TO BE EFFICIENCY MANITOBA APPROVED. FOR RENOVATIONS CHANGING FLUORESCENT FIXTURES TO LED, E.C. TO APPLY FOR EFFICIENCY MANITOBA REBATE ON OWNERS BEHALF.
4) PROVIDE TIMECLOCK CONTROL FOR LIGHTING NOT CONTROLLED FROM OCCUPANCY SENSORS TO MEET MANITOBA ENERGY CODE. PROVIDE 2 HOUR OVERRIDE ADJACENT TO ELECTRICAL PANEL UNLESS SHOWN ELSEWHERE ON DRAWINGS.
5) ALL LED LIGHTS TO BE MINIMUM 80 CRI.

DRAWING NOTES

E.C. TO PROVIDE TIMECLOCK C/W 2HR OVERRIDE SWITCH TO MEET 2020 ENERGY CODE REQUIREMENTS FOR SCHEDULED OFF.

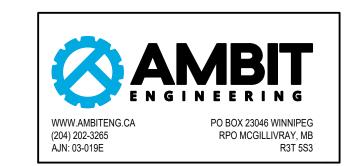
LIGHTING TO HAVE BI-LEVEL CONTROLS AND BE RESTRICTED TO MANUAL ON TO MEET 2020 ENERGY CODE REQUIREMENTS.

UTILIZE EXISTING PHOTOCELL CONTROL AS PRACTICABLE.
PROVIDE NEW MATCHING CONTROLS LOCATED NEAR EXISTING AS
REQUIRED TO TRY AND MATCH FUNCTIONALITY. TYPICAL FOR ALL

NEW EXTERIOR LIGHTING. FIXTURES TO BE MOUNTED AS TIGHT TO THE CEILING AS PRACTICABLE WHILE BEING AT SAME HEIGHT. SITE CONFIRM EXACT HEIGHT. (TYPICAL)

E.C. TO RELOCATE EXISTING EXIT SIGNAGE MOUNTED ABOVE DELETED DOOR TO BE ABOVE NEW WALL OPENING. EXTEND/REROUTE WIRING AS REQUIRED.





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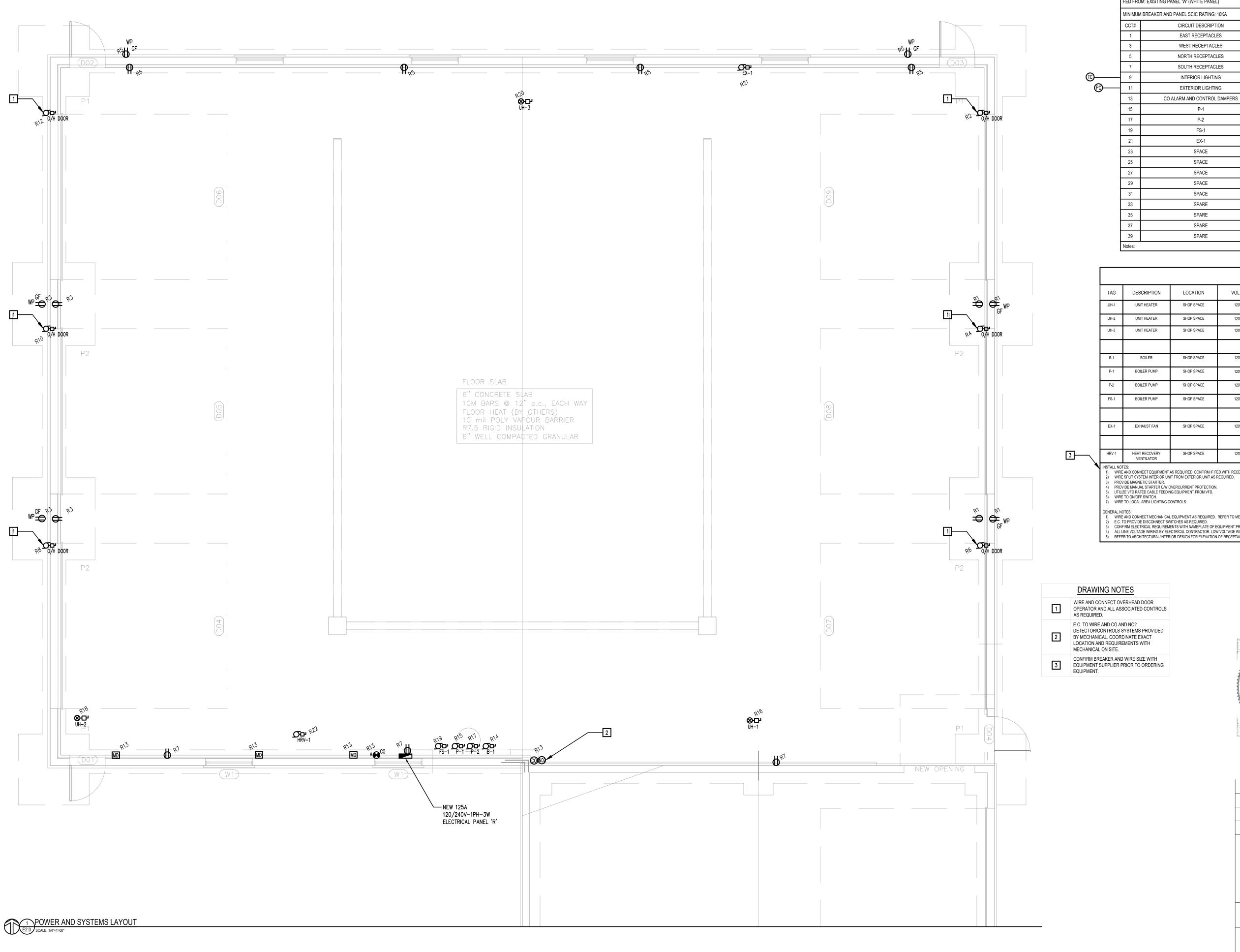
LIGHTING LAYOUT I.T.S. I.T.S. 3 OF 4

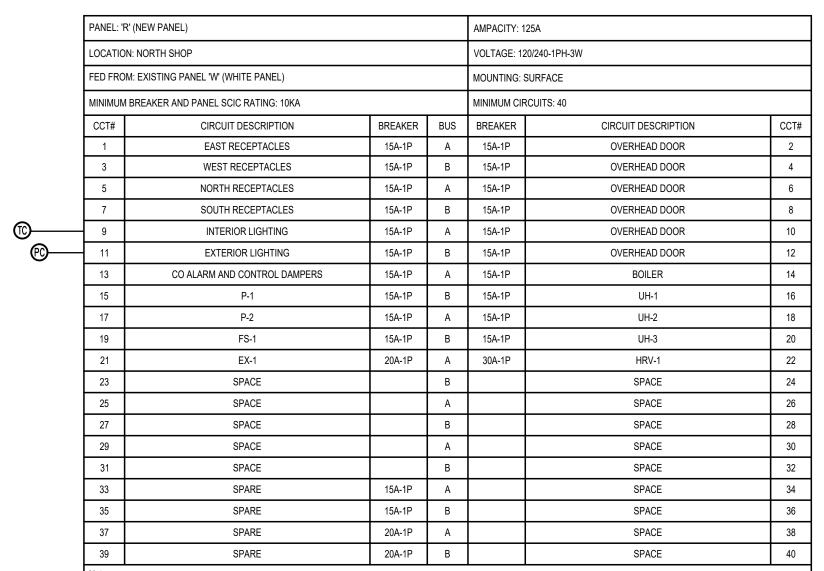
Note	es:
1)	LIGHTING LAYOUTS TO BE COMPLIANT WITH THE MAXIMUM LIGHTING DENSITY REQUIREMENTS STIPULATED IN THE NATIONAL ENERGY CODE FOR BUILDINGS (NECB) 2020 AS DEFINED FOR EACH SPACE PER ABOVE.
2)	PROPOSED LIGHTING LAYOUTS ARE INTENDED TO BE COMPLIANT WITH THESE DENSITY REQUIREMENTS AND CONTROCTORS BIDDING ONE EXECUTING THE WORK ASSOCIATED WITH THESE DRAWINGS ARE REQUIRED TO SUBMIT LIGHTING DENSITY CALCULATIONS AND CONTROL STRATEGIES IN A TABULAR BREAKDOWN FOR

THEIR ALTERNATES INDICATING THEY REMAIN COMPLIANCE WITH NECB 2020.

3) NO SPACES NEED CONFORM WITH LIGHTING CONTROL MATRIX ITEM 6 (TOP-LIGHTING CONTROL) AS NO SPACES HAVE SKYLIGHTS PER NECB ARTICLE 4.2.2.1 (13

2 LPD & LIGHTING CONTROLS MATRIX E1.0 SCALE: NTS





	MOTOR SCHEDULE										
TAG	DESCRIPTION	LOCATION	VOLTAGE	LOAD (MCA,KW)	CIRCUIT BREAKER	COND.	INSTALL NOTES	STARTER	OPTIONS/COMMENTS		
UH-1	UNIT HEATER	SHOP SPACE	120V-1Ø	4.2 A	15A-1P	#12	1	-			
UH-2	UNIT HEATER	SHOP SPACE	120V-1Ø	4.2 A	15A-1P	#12	1	-			
UH-3	UNIT HEATER	SHOP SPACE	120V-1Ø	4.2 A	15A-1P	#12	1	-			
B-1	BOILER	SHOP SPACE	120V-1Ø	127W	15A-1P	#12	1	-			
P-1	BOILER PUMP	SHOP SPACE	120V-1Ø	1/8HP	15A-1P	#12	1	-			
P-2	BOILER PUMP	SHOP SPACE	120V-1Ø	1/6HP	15A-1P	#12	1	-			
FS-1	BOILER PUMP	SHOP SPACE	120V-1Ø	50W	15A-1P	#12	1	-			
EX-1	EXHAUST FAN	SHOP SPACE	120V-1Ø	1/2 HP	20A-1P	#12	1	-			
HRV-1	HEAT RECOVERY VENTILATOR	SHOP SPACE	120V-1Ø	23.5MCA	30A-1P	#10	1	-			

WIRE AND CONNECT EQUIPMENT AS REQUIRED. CONFIRM IF FED WITH RECEPTACLE OR DIRECT FED. CONFIRM EXACT EQUIPMENT LOCATION WITH MECHANICAL CONTRACTOR/SUPPLIER PRIOR TO ROUGH-IN.

NEARTH NOTES.

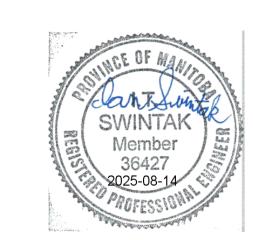
WIRE AND CONNECT MECHANICAL EQUIPMENT AS REQUIRED. REFER TO MECHANICAL FOR CONTROLS SEQUENCE.

E.C. TO PROVIDE DISCONNECT SWITCHES AS REQUIRED.

CONFIRM ELECTRICAL REQUIREMENTS WITH NAMEPLATE OF EQUIPMENT PRIOR TO ROUGH IN. MODIFY BREAKER/DISCONNECT AND CONDUCTORS AS REQUIRED TO MATCH. ALL LINE VOLTAGE WIRING BY ELECTRICAL CONTRACTOR. LOW VOLTAGE WIRING BY MECHANICAL CONTRACTOR UNLESS OTHERWISE NOTED. COORDINATE EXACT SCOPE WITH MECHANICAL CONTRACTOR.

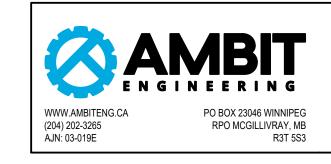
5) REFER TO ARCHITECTURAL/INTERIOR DESIGN FOR ELEVATION OF RECEPTACLES AND KITCHEN EQUIPMENT.

DETECTOR/CONTROLS SYSTEMS PROVIDED BY MECHANICAL. COORDINATE EXACT



I.T.S.





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ELECTRICAL POWER AND SYSTEMS LAYOUT I.T.S.

E2.0 4 OF 4