

UNIVERSAL WASHROOM SEQUENCE OF OPERATION:

- WHEN THE OUTSIDE H/C PUSH PLATE IS PUSHED, THE ELECTRIC DOOR STRIKE REMAINS DE-ENERGIZED WHILE THE OPERATOR CYCLES OPEN AND CLOSED.
- WHEN THE DOOR IS CLOSED AND THE "PUSH TO LOOK" BUTTON INSIDE THE WASHROOM IS PRESSED, THE ELECTRIC DOOR STRIKE IS ENERGIZED AND THE DOOR IS SOLIDLY LOCKED.
- WHEN THE "PUSH TO OPEN" BUTTON INSIDE THE WASHROOM IS PRESSED, THE ELECTRIC DOOR STRIKE IS AGAIN DE-ENERGIZED, THE OPERATOR CYCLES OPEN AND CLOSED.
- WHEN THE DOOR IS CLOSED AFTER EXIT, THE ELECTRIC DOOR STRIKE REMAINS IN THE DE-ENERGIZED MODE, READY FOR THE NEXT ENTRY/EXIT OR FOR A MANUAL OPENING OF THE DOOR.
- WALL MOUNTED ROOM OCCUPANCY INDICATOR LIGHT SHALL BE TIED TO THE "PUSH TO LOOK" BUTTON SUCH THAT UPON ACTIVATION OF THE "PUSH TO LOOK" BUTTON, THE OCCUPANCY LIGHT IS ILLUMINATED, AND UPON ACTIVATION OF THE "PUSH TO OPEN" BUTTON, THE OCCUPANCY LIGHT TURNS OFF.
- UPON ACTIVATION OF THE EMERGENCY CALL BUTTON, THE AUDIBLE AND VISUAL ALARMS ARE ACTIVATED AND THE DOOR IS DE-ENERGISED AND UNLOCKED.
- UPON ACTIVATION OF THE EMERGENCY CALL BUTTON, THE AUDIBLE AND VISUAL ALARMS ARE ACTIVATED AND THE DOOR IS DE-ENERGISED AND UNLOCKED.
- FOR EMERGENCY ACCESS, THE DOOR CAN ALSO BE OPENED FROM OUTSIDE BY A MASTER KEY.

NOTES:

- THIS ELECTRICAL CONTRACTOR TO PROVIDE ALL WRING, CONDUIT AND BACKBOXES AS REQUIRED FOR A COMPLETE AND FUNCTIONAL SYSTEM. WRING SHALL BE RUN IN CONDUIT AS PER DOOR HARDWARE MANUFACTURER'S WRING REQUIREMENTS.
- COORDINATE WITH DOOR HARDWARE SUPPLIER FOR INSTALLATION OF ALL DEVICES.
- COORDINATE EXACT LOCATIONS AND MOUNTING HEIGHTS OF ALL DEVICES AND PLATES WITH ARCHITECTURAL DRAWINGS AND LOCAL INSPECTOR PRIOR TO ROUGH-IN.
- LETTERS FOR SIGNAGE SHALL BE AT LEAST 25mm HIGH WITH A 5mm STROKE, WITH SIGN POSTED ABOVE THE EMERGENCY BUTTON.
- SYSTEM SHALL BE CANDEM CAT# CX-WEC SERIES TO BE SUITABLE FOR USAGE WITH DOOR OPERATOR AND CONTROL KIT, OR APPROVED EQUAL.
- EMERGENCY PUSH BUTTON TO BE INSTALLED BESIDE THE TOILET SEAT.
- ALL DEVICES SHALL BE MOUNTED AT HANDICAP HEIGHT AS PER O.B.C.

UNIVERSAL WASHROOM DETAIL

FIRE ALARM NOTES

- THIS IS AN EXISTING FIRE ALARM SYSTEM, EXISTING MAIN FIRE ALARM PANEL IS LOCATED IN MAIN ELECTRICAL ROOM.
- ALL EXISTING FIRE ALARM DEVICES NOT SHOWN ON DRAWINGS SHALL REMAIN AS IS UNLESS OTHERWISE NOTED.
- ALL NEW FIRE ALARM DEVICES SHOWN ON DRAWINGS SHALL MATCH EXISTING SYSTEM DEVICES (I.E. MAKE, MODEL, TYPE, etc.) AND SHALL BE FULLY COMPATIBLE WITH EXISTING SYSTEM.
- EXISTING FIRE ALARM SYSTEM SHALL REMAIN OPERATIONAL THROUGHOUT THE DURATION OF CONSTRUCTION.
- ALL NEW FIRE ALARM DEVICES SHALL BE CONNECTED TO THE EXISTING FIRE ALARM SYSTEM AND SHALL BE PART OF THE EXISTING ZONE. (GROUND FLOOR ZONE FOR FIRE STATIONS)
- ALL FIRE ALARM WORK SHALL BE COMPLETED BY THE OWNERS DESIGNATED FIRE ALARM CONTRACTOR AS A SUB-CONTRACTOR TO THIS TRADE.
- THE FIRE ALARM SYSTEM SHALL BE INSTALLED AND VERIFIED ACCORDING TO THE LATEST EDITIONS OF CAN/ULC-S524, -S537 AND LOCAL CODE HAVING JURISDICTION.
- PROVIDE FIRE ALARM VERIFICATION REPORT TO CLIENT REPRESENTATIVE AND ENGINEER ONE (1) WEEK PRIOR TO SCHEDULED OCCUPANCY.
- PROVIDE ALL REQUIRED FIRE ALARM MODULES, POWER SUPPLY, BATTERY PACKS, BOOSTERS, ETC. TO PROVIDE STROBE SIGNAL CAPABILITY TO SATISFY VISUAL SIGNAL REQUIREMENTS.
- PROVIDE ALL REQUIRED FIRE ALARM MODULES, POWER SUPPLY, BATTERY PACKS, BOOSTERS, ETC. TO PROVIDE THE REQUIRED CIRCUIT CAPACITY FOR NEW FIRE ALARM DEVICES AS REQUIRED. CONTRACTOR SHALL REVIEW SITE CONDITIONS PRIOR TO BID.
- FIRE ALARM VERIFICATION SHALL BE PERFORMED BY BASE BUILDING CONTRACTOR AT TENANT'S COST, CARRY COST IN THIS CONTRACT.
- CONTRACTOR TO PROVIDE ALL REQUIRED EMPTY CONDUITS FROM TENANT SPACE BACK TO MAIN FIRE ALARM PANEL AS NOTED IN ELECTRICAL DRAWINGS. COORDINATE FINAL ROUTING ON SITE, PROVIDE ALL REQUIRED MOUNTING ACCESSORIES TO SUIT.

TELEPHONE/DATA SYSTEM

- DATA OUTLET SHALL BE SINGLE BOX C/W 3/4" C AND CABLES TO ZONE CONDUITS.
- PROVIDE 21mm (3/4") CONDUIT TO EACH OUTLET FROM COMMUNICATION BACKBOARD C/W NYLON PULLSTRING IN ALL EMPTY CONDUITS.
- COMMUNICATION BACKBOARD SHALL BE PLYWOOD, 21mm (3/4") THICK, WITH FIRE-RETARDANT PAINT AND #6 GREEN INSULATED GROUND WIRE TO MAIN BUILDING GROUND.
- ALL DATA CABLING BY TENANT.

LUMINARIES SCHEDULE

TYPE	DESCRIPTION
A	SUSPENDED LED LINEAR HIGH-BAY FIXTURE C/W 18503 LUMEN OUTPUT, 135W, 5000K COLOUR TEMPERATURE AND 347V DRIVER. FIXTURES TO HAVE A WHITE FINISH COLOUR AND SHALL BE TIGHT TO U/S OF JOIST. PROVIDE ALL MOUNTING ACCESSORIES TO SUIT. PREMISE LIGHTING LHB3-1355-2
B	4'-0" LONG SUSPENDED LED STRIP LIGHT FIXTURE C/W 4544 LUMEN OUTPUT, 35W, 4000K COLOUR TEMPERATURE AND 347V DRIVER. FIXTURES TO HAVE A WHITE FINISH COLOUR. PROVIDE ALL MOUNTING ACCESSORIES TO SUIT. PREMISE LIGHTING CS3-4354-3
C	2'x4' SURFACE MOUNTED FLAT PANEL LED LIGHT FIXTURES SUITABLE FOR GYPSUM CEILING INSTALLATION C/W 5290 LUMEN OUTPUT, 40W, 4000K COLOUR TEMPERATURE AND 347V DRIVER. FIXTURES TO HAVE A WHITE FINISH COLOUR. PROVIDE ALL MOUNTING ACCESSORIES TO SUIT. PREMISE LIGHTING FFH2-2440P40-3 WITH SURFACE MOUNT KIT
D	2'x4' RECESSED FLAT PANEL LED LIGHT FIXTURES SUITABLE FOR ACT CEILING INSTALLATION C/W 5290 LUMEN OUTPUT, 40W, 4000K COLOUR TEMPERATURE AND 347V DRIVER. FIXTURES TO HAVE A WHITE FINISH COLOUR. PROVIDE ALL MOUNTING ACCESSORIES TO SUIT. PREMISE LIGHTING FFH2-2440P40-3
	WALL MOUNTED OR PENDANT MOUNTED GREEN RUNNING MAN LED EXIT SIGN, SINGLE OR DOUBLE FACE, SUITABLE FOR 347V POWER CONNECTION. PROVIDE ALL MOUNTING ACCESSORIES TO SUIT. BEGHELLI (STELLA RM SERIES)
	WALL MOUNTED COMBO EXIT SIGN, SINGLE OR DOUBLE FACE, GREEN WITH RUNNING MAN SYMBOL, WITH TWO REMOTE HEADS (12V, 7W LED), SUITABLE FOR 347V POWER CONNECTIONS AND A 36W SELF BATTERY UNIT AS INDICATED ON THE DRAWINGS. PROVIDE ALL MOUNTING ACCESSORIES TO SUIT. BEGHELLI (STELLA COMBO RM SERIES)
	WALL MOUNTED OR PENDANT MOUNTED (TO BE MOUNTED AT THE SAME HEIGHT OF LIGHT FIXTURES IN THE AREA) EMERGENCY REMOTE HEADS, AS INDICATED ON THE DRAWINGS, C/W 24VDC, 7W LED MR16 LAMPS. PROVIDE ALL MOUNTING ACCESSORIES TO SUIT. BEGHELLI (STELLA BTMR SERIES)
	EMERGENCY BATTERY UNIT, C/W TWO (2) - 7W LED MR16 REMOTE HEADS, 347VAC-24VDC WITH CAPACITY OF 550W. UNITS SHALL BE C/W 10 YEARS MANUFACTURE WARRANTY. BEGHELLI (STELLA NOVA SERIES)

DRAWING LIST

E100	ELECTRICAL LEGEND, NOTES AND DETAILS
E101	DISTRIBUTION DIAGRAM, SCHEDULES AND DETAILS
E102	ELECTRICAL - NEW POWER LAYOUT
E103	ELECTRICAL - NEW RCP AND FIRE ALARM LAYOUT
E104	ELECTRICAL - DEMOLITION LAYOUT
E105	ELECTRICAL SPECIFICATIONS

ELECTRICAL LEGEND

- KEYPAD (SUPPLY & INSTALL BY PRINCESS AUTO) THIS ELECTRICAL CONTRACTOR TO PROVIDE 1/2" CONDUIT w/ PULL STRING FROM KEYPAD TO CEILING SPACE.
- SIREN, SUPPLIED AND INSTALLED BY OTHERS, THIS ELECTRICAL CONTRACTOR TO PROVIDE ALL REQUIRED ROUGH-INS TO SUIT.

COMMUNICATIONS SYSTEM

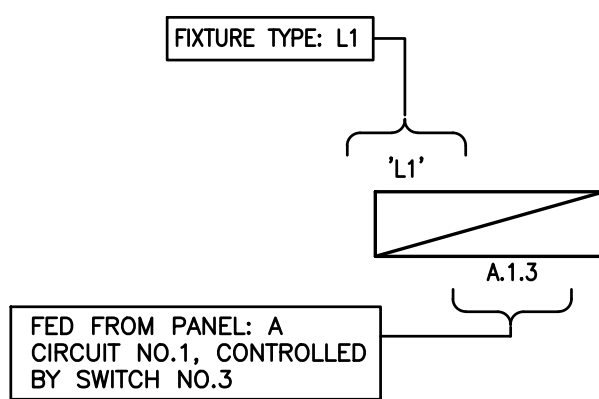
- DATA OUTLET C/W MPI DATA RING AND EMT CONDUIT WITH PULL STRING TO DATA RACK LOCATION IN I.T. ROOM. THIS ELECTRICAL CONTRACTOR TO PROVIDE ROUGH-IN OUTLET TO SUIT. INSTALLATION OF OUTLET AND CABLE BY OTHERS. # INDICATES NUMBER OF DATA DROPS. SIZE OF CONDUIT TO SUIT NUMBER OF CABLES.
- AUDIO/VIDEO OUTLET (VGA & HDMI) FOR COMPUTER CONNECTION TO PROJECTOR. PROVIDE ALL REQUIRED ROUGH-IN TO SUIT. SIZE OF CONDUIT TO SUIT NUMBER OF CABLES.
- POWERED VOLUME ATTENUATOR, THIS ELECTRICAL CONTRACTOR TO PROVIDE ROUGH-IN ONLY, COORDINATE ALL REQUIREMENTS WITH PRINCES AUTO'S VENDER
- PASSIVE VOLUME ATTENUATOR, THIS ELECTRICAL CONTRACTOR TO PROVIDE ROUGH-IN ONLY, COORDINATE ALL REQUIREMENTS WITH PRINCES AUTO'S VENDER
- PASSIVE VOLUME ATTENUATOR, THIS ELECTRICAL CONTRACTOR TO PROVIDE ROUGH-IN ONLY, COORDINATE ALL REQUIREMENTS WITH PRINCES AUTO'S VENDER
- SPEAKER SUPPLY & INSTALL BY PRINCESS AUTO

EQUIPMENT LEGEND

ALL ITEMS SUPPLIED AND INSTALLED BY PRINCESS AUTO

- COMPUTER TERMINAL
- LAPTOP
- TILL LOCATION
- PRINTER
- MULTI-FUNCTION PRINTER
- LABEL PRINTER
- PHONE
- SCALE

LIGHTING FIXTURE DESIGNATION AND CIRCUITING



ABBREVIATIONS

RT	RAIN TIGHT
AFF	ABOVE FINISHED FLOOR
WP	WEATHERPROOF
GFIC	GROUND FAULT INTERRUPTER CIRCUIT
E	EXISTING ELECTRICAL DEVICE TO REMAIN
R	EXISTING ELECTRICAL DEVICE TO BE REMOVED
R/R	EXISTING ELECTRICAL DEVICE TO BE REMOVED AND RE-INSTALLED.
R/E	EXISTING ELECTRICAL DEVICE TO BE RELOCATED
E/R	EXISTING ELECTRICAL DEVICE IN RELOCATED LOCATION
NL	NIGHT LIGHT
AD	AUTO DOOR
CL	CEILING MOUNTED
SN	LUMINATED SIGNAGE
MD	MOTORIZED DAMPER
JB	JUNCTION BOX

GENERAL NOTES

- THESE DRAWINGS ARE DIAGRAMMATIC REFERENCE DRAWINGS ONLY. BEFORE ANY ELECTRICAL EQUIPMENT IS ROUGHED IN, REFER TO ARCHITECTURAL DRAWING DETAILS AND ELEVATIONS OR DETAILS ON THE ELECTRICAL DRAWINGS FOR EXACT LOCATION. WHERE THIS DETAILED INFORMATION IS NOT SHOWN ON THE DRAWING, VERIFY THE EXACT LOCATION ON SITE.
- DETAILS ARE INTENDED TO BE FOR GENERAL ARRANGEMENT ONLY. THEY DO NOT SHOW ALL NECESSARY COMPONENTS, BUT ARE MERELY A GUIDE AS TO THE ORIENTATION OF EQUIPMENT WHERE IT IS REQUIRED.
- MAINTAIN THE INTEGRITY OF ALL FIRE SEPARATIONS. PROVIDE ALL NECESSARY PRODUCTS APPROVED BY RELEVANT AUTHORITY HAVING JURISDICTION, WHICH ARE REQUIRED TO GO AROUND AND IN CABLE THROUGH CONDUIT, ETC., WHICH PASS THROUGH FIRE RATED ASSEMBLIES TO RETAIN THE FIRE RATING OF THESE ASSEMBLIES.
- ROOFING WORK, WHERE ROOF REVISIONS AND/OR REPLACEMENTS ARE PART OF THE PROJECT, INCLUDE FOR DISCONNECTING, LIFTING, OR TEMPORARILY REMOVING ELECTRICAL EQUIPMENT AND ELECTRICAL CONNECTIONS TO OTHER ROOF MOUNTED EQUIPMENT AS REQUIRED TO PERMIT COMPLETION OF THE ROOFING WORK, AND FOR RE-INSTALLING/RE-CONNECTING THE EQUIPMENT WHEN THE ROOFING WORK IS COMPLETE.
- HAZARDOUS MATERIALS AND WASTE, IF HAZARDOUS MATERIALS AND/OR WASTE NOT LISTED IN THE SPECIFICATION IS FOUND, STOP THE ASSOCIATED WORK AND NOTIFY THE OWNER AND CONSULTANT IMMEDIATELY AND AWAIT DIRECTIONS.
- DILLING OF FLOORS, WALLS AND CEILINGS SHALL BE BY THIS CONTRACTOR. OBTAIN WRITTEN APPROVAL FOR ALL LOCATIONS FROM THE GENERAL CONTRACTOR.
- CUTTING EFFECTING STRUCTURAL INTEGRITY OF THE BUILDING SHALL NOT BE ALLOWED WITHOUT PRIOR APPROVAL FROM THE STRUCTURAL ENGINEER.
- PROVIDE FIRE RATED PATCH AROUND PENETRATION POINTS FROM ANY LOCATIONS WHERE CONDUITS PASS THROUGH FIRE RATED STRUCTURES.
- LIMIT ALL USE OF Bx CABLE FOR SHORT RUNS IN CEILING SPACE THAT SHALL NOT EXCEED 10 FT. USE CONDUIT FOR ALL OTHER RUNS INCLUDING VERTICAL RUNS AND IN INACCESSIBLE CEILING AREAS.
- ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE NATIONAL BUILDING CODE AND NATIONAL SAFETY CODE STANDARDS.
- ALL CONDUIT SHALL BE EMT UNLESS OTHERWISE NOTED. USE WEATHERPROOF PVC CONDUIT FOR ALL OUTDOOR RUNS.
- PROVIDE COMPLETE LABELING INDICATING PANEL & BREAKER NUMBER ON ALL FACES OF RECEPTACLES, SWITCHES & JUNCTION BOX COVERS/PLATES & RESPECTIVE POWER CONNECTIONS. ENSURE FONT SIZE OF 18 PT. LABEL MECHANICAL & OTHER EQUIPMENT. DISCONNECT SWITCHES SHALL STATE LOCATION OF ELECTRICAL PANELS PROVIDING POWER.
- NO UNDER FLOOR CONDUITS ARE PERMITTED TO BE INSTALLED IN THE STORE UNLESS OTHERWISE IS NOTED ON THE DRAWINGS.
- CONTRACTOR TO REPORT ANY SITE CONDITIONS THAT REQUIRE CHANGES IN THE LAYOUT.
- PRINCESS AUTO HAS PREFERRED I.T. CABLING INSTALLER WHO IS TO WORK WITH CONTRACTOR TO COORDINATE INSTALLATION.
- COORDINATE ROUGH-IN REQUIREMENTS AND 110V POWER SUPPLY FOR A THEFT PROTECTION SYSTEM (EAS SECURITY) TO BE INSTALLED BY PRINCESS AUTO'S PREFERRED INSTALLER. PROVIDE ALL NECESSARY CONDUITS, ACCESS PANELS AND POWER SUPPLY. PRINCESS AUTO'S PREFERRED INSTALLER WILL SUPPLY, INSTALL, WIRE AND CONNECT THE EAS SECURITY SYSTEM.
- COORDINATE ROUGH-IN REQUIREMENTS AND 120V POWER SUPPLY FOR A PUBLIC ADDRESS SYSTEM TO BE INSTALLED BY PRINCESS AUTO'S PREFERRED INSTALLER. PROVIDE ALL NECESSARY CONDUITS, JUNCTION BOXES AND PULL BOXES. PRINCESS AUTO'S PREFERRED INSTALLER WILL SUPPLY, INSTALL, WIRE AND CONNECT PUBLIC ADDRESS SYSTEM EQUIPMENT.
- COORDINATE ROUGH-IN REQUIREMENTS FOR CCTV CABLING AND EQUIPMENT WITH PRINCESS AUTO'S PREFERRED INSTALLER. PROVIDE ALL NECESSARY CONDUITS, JUNCTION BOXES AND PULL BOXES.
- COORDINATE INSTALLATION OF ROUGH-INS FOR DATA, TELECOMMUNICATION AND SECURITY CABLING BY PRINCESS AUTO'S PREFERRED INSTALLER. PROVIDE ALL NECESSARY CONDUITS, JUNCTION BOXES AND PULL BOXES AND INSTALL SIMULTANEOUSLY (OR JUST PRIOR) WITH IT, DATA AND TELECOMMUNICATION TO ENSURE ALL CONDUIT IS PROPERLY LOCATED.

ELECTRICAL LEGEND

POWER SYSTEM

- DUPLEX RECEPTACLE 15A, 125V OR AS NOTED IN PANEL SCHEDULE
- QUAD RECEPTACLE 15A, 125V OR AS NOTED IN PANEL SCHEDULE
- 120V, 20A GFCI DUPLEX RECEPTACLE MOUNTED IN A WEATHERPROOF BOX FOR MECHANICAL UNITS ON THE ROOF. INTERMATIC CAT# WP1000C
- PAC POLE FOR DATA AND ELECTRICAL CABLING FROM CEILING (COORDINATE DROPS WITH CORRESPONDING SYMBOL REQUIREMENT)
- SPECIAL RECEPTACLE, REFER TO PLAN AND PANEL SCHEDULES FOR VOLTAGE AND AMPERAGE, COORDINATE TYPE WITH EQUIPMENT SUPPLIER
- DIRECTION POWER CONNECTION
- DIRECTION POWER CONNECTION C/W DISCONNECT SWITCH
- JUNCTION BOX
- PULL BOX
- UNFUSED DISCONNECT SWITCH
- FUSED DISCONNECT SWITCH
- ELECTRICAL PANEL, RECESSED OR SURFACE MOUNTED
- ELECTRICAL DISTRIBUTION PANELBOARD
- VARIABLE FREQUENCY DRIVE
- TRANSIENT VOLTAGE SURGE SUPPRESSOR UNIT
- TRANSFORMER
- CONTROL PANEL
- SINGLE PHASE MOTOR
- THREE PHASE MOTOR
- DOOR RELEASE PUSH BUTTON
- CIRCUIT BREAKER
- EBBH - ELECTRIC BASEBOARD HEATER, SUPPLIED AND INSTALLED BY MECHANICAL CONTRACTOR WIRING BY THIS ELECTRICAL CONTRACTOR.

LIGHTING SYSTEM

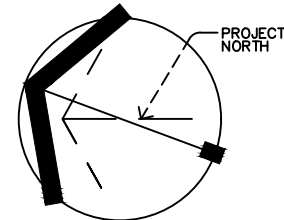
- 2'x4' LIGHTING FIXTURE, CEILING MOUNTED
- 1'x4' LIGHTING FIXTURE, CEILING MOUNTED
- 1'x4' LIGHTING FIXTURE, WALL MOUNTED
- 2'x4' LIGHTING FIXTURE AS NIGHT LIGHT, CEILING MOUNTED
- 1'x4' LIGHTING FIXTURE AS NIGHT LIGHT, CEILING MOUNTED
- 1'x4' LIGHTING FIXTURE AS NIGHT LIGHT, WALL MOUNTED
- WALL MOUNTED LIGHTING FIXTURE
- POT LIGHT CEILING MOUNTED
- CEILING MOUNTED EXIT SIGN, ARROW DENOTES DIRECTION
- WALL MOUNTED EXIT SIGN, ARROW DENOTES DIRECTION
- EMERGENCY LIGHT
- BATTERY UNIT C/W DOUBLE LIGHT HEADS
- BATTERY UNIT
- SINGLE POLE SWITCH 15A, 125V
- THREE-WAY SWITCH, 15A, 125V
- LIGHTING DIMMING SWITCH, 125V
- DOUBLE GANG SINGLE POLE SWITCHES
- TRIPLE GANG SINGLE POLE SWITCHES
- PHOTOCCELL
- DIGITAL TIMER
- RELAY
- CEILING MOUNTED ADAPTIVE TECHNOLOGY OCCUPANCY SENSORS SHALL BE HUBBELL DUAL TECHNOLOGY H-MOSS OCCUPANCY SENSORS A1D SUITABLE FOR 120V OR 347V AS REQUIRED. SENSOR SHALL BE C/W POWER PACK AND ALL NECESSARY WRING ACCESSORIES AND SUITABLE FOR 500, 1000 OR 2000 SQ. FT. AS REQUIRED. PROVIDE INDIVIDUAL TIME AND SENSOR ADJUSTMENT TO CLIENT'S REQUIREMENTS.
- MOTION SENSOR LIGHT SWITCH SUITABLE FOR POWER PACK SYSTEM
- MOTION SENSOR LIGHT SWITCH SHALL BE HUBBELL H-MOSS OCCUPANCY SENSORS A1D277W1 SUITABLE FOR 120V. SENSOR SHALL BE MANUAL "ON" WITH AUTO-OFF FUNCTION AND C/W FIELD ADJUSTABLE VIEWING ANGLE AND ADAPTIVE TECHNOLOGY. PROVIDE INDIVIDUAL TIME AND SENSOR ADJUSTMENT TO CLIENT'S REQUIREMENTS.

FIRE ALARM SYSTEM

- MANUAL PULL STATION
- FIXED HEAT DETECTOR
- FIRE ALARM SMOKE DETECTOR COMBINED PHOTOELECTRIC AND HEAT DETECTOR.
- DUCT SMOKE DETECTOR
- FIRE ALARM BELL
- CEILING MOUNTED STROBE LIGHT
- WALL MOUNTED STROBE LIGHT
- SPRINKLER SYSTEM WATER FLOW SWITCH
- SPRINKLER SYSTEM ALARM CHECK VALVE/SUPERVISED VALVE
- LOW/HIGH PRESSURE SWITCH
- FIRE ALARM CONTROL PANEL
- FIRE ALARM ANNUNCIATOR PANEL

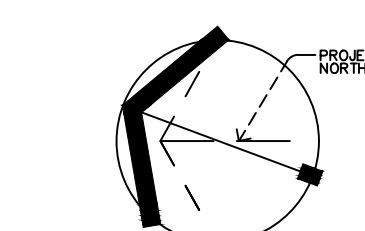
SECURITY SYSTEM

- SECURITY CONTROL PANEL
- SECURITY CAMERA (SUPPLY & INSTALL BY PRINCESS AUTO) THIS ELECTRICAL CONTRACTOR TO PROVIDE ROUGH-IN FOR ALL EXTERIOR CAMERAS ONLY, UNLESS NOTED OTHERWISE. COORDINATE ALL REQUIREMENTS WITH PRINCESS AUTO
- ELECTRIC DOOR STRIKE, COORDINATE ALL REQUIREMENTS WITH DOOR HARDWARE SCHEDULE AND SUPPLIER
- RECESSED DOOR CONTACT (SUPPLY & INSTALL BY PRINCESS AUTO) THIS ELECTRICAL CONTRACTOR TO PROVIDE 1/2" CONDUIT w/ PULL STRING FROM TOP OF NON-HINGED SIDE OF DOOR UP TO CEILING SPACE
- CARD ACCESS READER (SUPPLY & INSTALL BY PRINCESS AUTO) THIS ELECTRICAL CONTRACTOR TO PROVIDE 1/2" CONDUIT w/ PULL STRING FROM THE NON-HINGED SIDE OF DOOR TO CEILING STUD OUT



NO.	DATE	BY	REVISIONS
01	01	01	ISSUED FOR REVIEW & COMMENT
02	02	02	ISSUED FOR PERMIT
03	03	03	ISSUED FOR TENDER

DATE:	NOVEMBER 2020
DRAWN BY:	F.K.
CHECKED BY:	J.L.K.
COMM. NO.	20-063



#	DATE	ISSUES & REVISIONS
03	NOV 03, 2020	ISSUED FOR TENDER
02	NOV 02, 2020	ISSUED FOR PERMIT
01	OCT 23, 2020	ISSUED FOR REVIEW & COMMENT

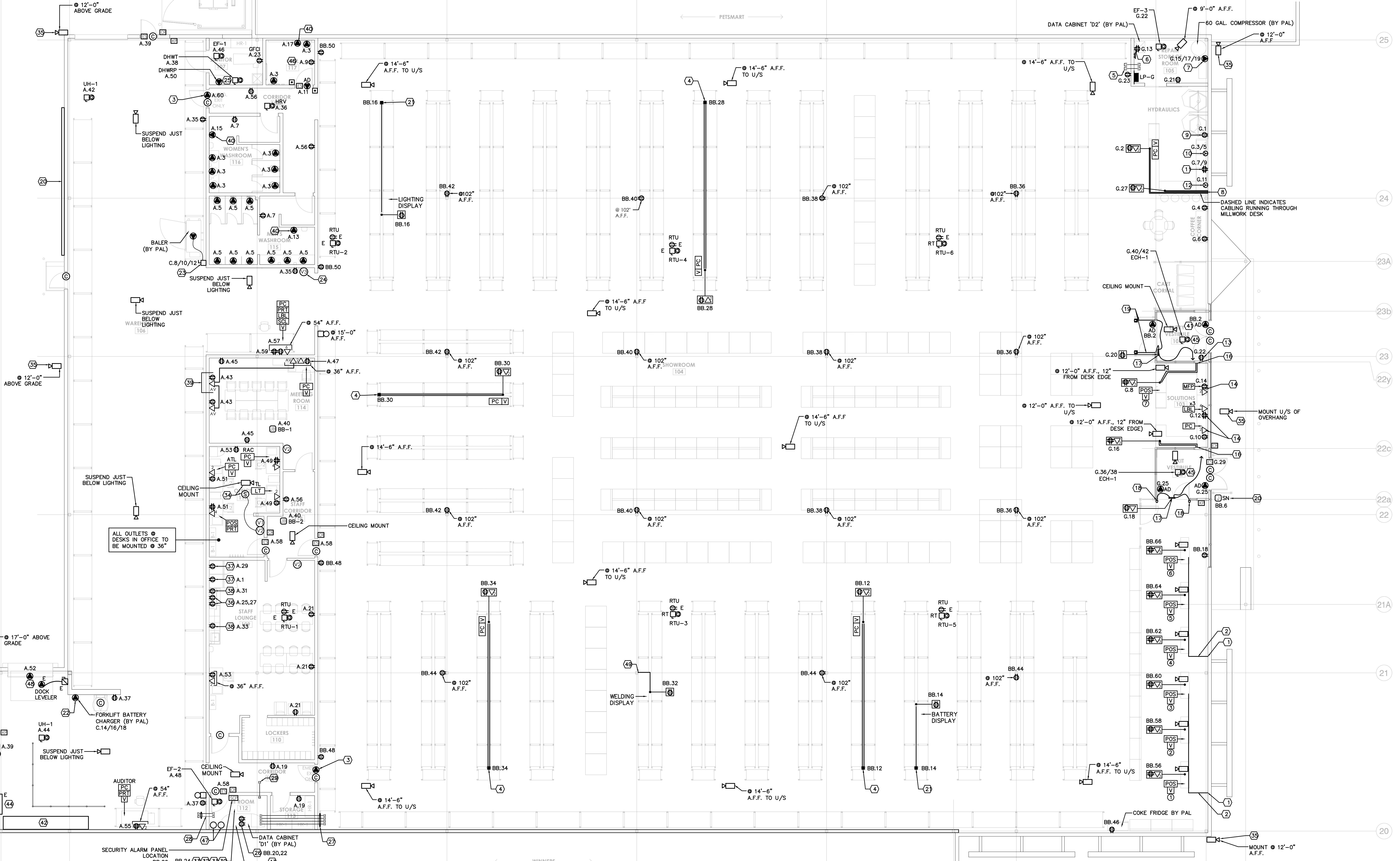
ELECTRICAL - NEW POWER LAYOUT
RIOCAN THICKSON RIDGE
PRINCESS AUTO - STORE 22
UNIT 8 - 1629 VICTORIA STREET EAST, ON LIN 9L4

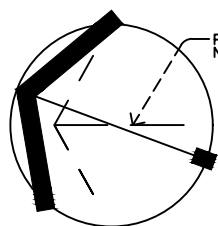
DATE: NOVEMBER 2020
DRAWN BY: F.K.
CHECKED BY: J.L.K.
COMM. NO. 20-063

E102
CONTRACTOR SHALL CHECK AND VERIFY
ALL DIMENSIONS ON SITE.
DO NOT SCALE DRAWINGS.

- GENERAL NOTES:
- COORDINATE EXACT LOCATION AND MOUNTING HEIGHT OF ALL POWER AND DATA OUTLETS WITH ARCHITECTURAL DRAWINGS.
 - PROVIDE ALL REQUIRED WIRING AND CONDUITS FOR ALL FANS' SPEED CONTROLLER. COORDINATE REQUIREMENTS WITH MECHANICAL CONTRACTOR.
 - REPORT ANY SITE CONDITIONS THAT REQUIRE CHANGES IN THE LAYOUT.
 - PRINCESS AUTO HAS PREFERRED I.T. CABLING INSTALLER WHO IS TO WORK WITH THIS CONTRACTOR TO COORDINATE INSTALLATION.
 - COORDINATE ROUGH-IN REQUIREMENTS AND 120V POWER SUPPLY FOR A THEFT PROTECTION SYSTEM (EAS SECURITY) TO BE INSTALLED BY PRINCESS AUTO'S PREFERRED INSTALLER. PROVIDE ALL NECESSARY CONDUITS, ACCESS PANELS AND POWER SUPPLY. PRINCESS AUTO'S PREFERRED INSTALLER WILL SUPPLY, INSTALL, WIRE AND CONNECT THE EAS SECURITY SYSTEM.
 - COORDINATE ROUGH-IN REQUIREMENTS AND 120V POWER SUPPLY FOR A PUBLIC ADDRESS SYSTEM TO BE INSTALLED BY PRINCESS AUTO'S PREFERRED INSTALLER. PROVIDE ALL NECESSARY CONDUITS, JUNCTION BOXES AND PULL BOXES. PRINCESS AUTO'S PREFERRED INSTALLER WILL SUPPLY, INSTALL, WIRE AND CONNECT PUBLIC ADDRESS SYSTEM EQUIPMENT.
 - COORDINATE ROUGH-IN REQUIREMENTS FOR CCTV CABLING AND EQUIPMENT WITH PRINCESS AUTO'S PREFERRED INSTALLER. PROVIDE ALL NECESSARY CONDUITS, JUNCTION BOXES AND PULL BOXES.
 - COORDINATE INSTALLATION OF ROUGH-INS FOR DATA, TELECOMMUNICATION AND SECURITY CABLING BY PRINCESS AUTO'S PREFERRED INSTALLER. PROVIDE ALL NECESSARY CONDUITS, JUNCTION BOXES AND PULL BOXES AND INSTALL SIMULTANEOUSLY (OR JUST PRIOR) WITH IT, DATA AND TELECOMMUNICATION TO ENSURE ALL CONDUIT IS PROPERLY LOCATED.
 - IT IS THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE THE VOLTAGE DROPS FOR ALL BRANCH CIRCUITS (POWER CIRCUITS, LOW VOLTAGE CIRCUITS AND ETC.) AND ENSURE CORRECT WIRE SIZES ARE SELECTED AND USED.

- KEY NOTES:
- PROVIDE 1" CONDUIT FROM OPEN JOIST SPACE DOWN WALL FOR POWER TO NEAREST 120V POWER JB WITH PULL STRING (LABEL CIRCUIT AT JB LOCATION). PROVIDE 3x1" CONDUITS FOR DATA C/W PULL STRING (ALL CONDUITS SHALL BE SURFACE MOUNTED). ENSURE TO COORDINATE CONDUIT LOCATIONS AND HEIGHTS WITH PRINCESS AUTO SIGNAGE AND VENDOR: CANEM.
 - CANEM TO RUN POWER & DATA CABLING THROUGH CONNECTRAC FLOOR MOUNTED WIREWAY (BY CANEM) AND INSTALL OUTLETS IN MILLWORK DESKS UNDER COUNTER. THIS ELECTRICAL CONTRACTOR TO COORDINATE SCOPE WITH CANEM.
 - PROVIDE A DEDICATED 120VAC NON-SWITCHED POWER CONNECTION ABOVE DOOR FOR DELAYED EGRESS EXIT DEVICE. PROVIDE 1-18/2c FROM THE POWER SUPPLY OVER THE DOOR TO THE FIRE ALARM CONTROL PANEL FOR A "RELEASE ON FIRE". PROVIDE FINAL CONNECTION TO SECURITY ALARM SYSTEM.
 - PROVIDE 120V POWER JB (LABEL CIRCUIT AT JB LOCATION) AND 1" CONDUIT FOR DATA WITH PULL STRING IN JOIST SPACE. CANEM TO PROVIDE NEW PAC POLE FROM OPEN JOIST SPACE TO 96" A.F.F. (TO TOP OF RACKING) C/W 3/4" CONDUIT FOR POWER AND 1" CONDUIT FOR DATA. CANEM TO INSTALL OUTLETS IN MILLWORK / RACKING. THIS ELECTRICAL CONTRACTOR TO COORDINATE SCOPE WITH CANEM.
 - TO PROVIDE TWO (2) 4" CONDUIT SLEEVES STUBBED FROM DATA CABINET LOCATION UP AND OUT 6" INTO SHOWROOM JOIST SPACE.
 - TO INSTALL A 20A QUADPLEX TERMINATED IN A JUNCTION BOX MOUNTED ON WALL AT DATA CABINET LOCATION AT 6'-6" A.F.F. AND INSTALL A BOND BUSBAR NEAR THE JUNCTION BOX. PRINCESS AUTO TO SUPPLY AND INSTALL DATA CABINET AT 6'-6" A.F.F. TO U/S OF CABINET.
 - PROVIDE ONE 30A 208V POWER SUPPLY ON A DEDICATED CIRCUIT FOR HARDWARE CONNECTION TO PRINCESS AUTO SUPPLIED COMPRESSOR.
 - PROVIDE CONDUIT STUB IN WALL @ 12" A.F.F. FOR POWER TO NEAREST 120V POWER JUNCTION BOX WITH PULL STRING AND LABEL CIRCUIT AT JUNCTION BOX LOCATION. PROVIDE 1" CONDUIT STUB IN WALL AT 12" A.F.F. FOR DATA CABLING UP TO OPEN CEILING SPACE WITH PULL STRING. REFER TO PLAN FOR EXACT LOCATION.
 - PROVIDE A 15A 120V OUTLET @ 24" A.F.F. FOR PRINCESS AUTO SUPPLIED FUME EXTRACTOR (INSTALLED BELOW COUNTER). REFER TO PLAN FOR EXACT LOCATION AND MILLWORK SHOP DRAWINGS.
 - PROVIDE A 6-20R OR 6-20RA (208Y 20A NON-TWISTLOCK RECEPTACLE) HUBBELL 5401 OR EQUIVALENT @ 54" A.F.F. FOR PRINCESS AUTO SUPPLIED HOSE CRIMPER (ON COUNTER). REFER TO PLAN FOR EXACT LOCATION.
 - PROVIDE A 6-15R (208V 15A NON-TWISTLOCK RECEPTACLE) HUBBELL 5061 OR EQUIVALENT @ 54" A.F.F. FOR PRINCESS AUTO SUPPLIED HOSE CUTTER (ON COUNTER). REFER TO PLAN FOR EXACT LOCATION.
 - PROVIDE A QUADPLEX RECEPTACLE @ 54" A.F.F. REFER TO PLAN FOR EXACT LOCATION.
 - OUTLET MOUNTED @ 96" A.F.F. FOR PRINCESS AUTO SUPPLIED "OPEN" SIGN.
 - BOTH POWER AND DATA OUTLETS MOUNTED @ 24" A.F.F. CONTRACTOR TO ENSURE THE LOCATIONS OF THE OUTLETS ARE COORDINATED WITH MILLWORK.
 - BOTH POWER AND DATA OUTLETS MOUNTED @ 48" A.F.F. CONTRACTOR TO ENSURE THE LOCATIONS OF THE OUTLETS ARE COORDINATED WITH MILLWORK.
 - PROVIDE 3/4" CONDUIT STUB FOR POWER IN WALL @ 12" A.F.F. TO NEAREST 120V POWER JUNCTION BOX WITH PULL STRING AND LABEL CIRCUIT AT JUNCTION BOX LOCATION. PROVIDE 1" CONDUIT STUB FOR DATA IN WALL @ 12" A.F.F. WITH PULL STRING AND STUB CONDUIT UP WITHIN WALL TO OPEN CEILING SPACE. REFER TO PLAN FOR EXACT STUB LOCATIONS.
 - PROVIDE A 120 VAC DUPLEX RECEPTACLE ON A DEDICATED CIRCUIT AND DATA DROP FOR EAS CONTROL PANEL IN CEILING OF VESTIBULE. PROVIDE A 3/4" CONDUIT W/ PULL STRING ALONG EXTERIOR WALL CONNECTING EACH CONTROL PANEL IN VESTIBULE CEILING. REFER TO PRINCESS AUTO'S EAS (ELECTRONIC ARTICLE SURVEILLANCE) INSTALLATION MANUAL FOR ADDITIONAL INFO.
 - PROVIDE A 1" ACCESS HOLE @ 54" A.F.F. ON EACH VERTICAL MULLION OF DOOR WITH A PULL STRING UP TO CEILING SPACE. AT ENTRY TO CEILING SPACE, PROVIDE A CONDUIT/FLEX WITH PULL STRING TO EAS CONTROL PANEL LOCATION. PRINCESS AUTO TO SUPPLY AND INSTALL MULLION MOUNTED EAS ANTENNAS. REFER TO PRINCESS AUTO'S EAS (ELECTRONIC ARTICLE SURVEILLANCE) INSTALLATION MANUAL FOR ADDITIONAL INFO.
 - PROVIDE 120V POWER JB (LABEL CIRCUIT AT JB LOCATION) IN JOIST SPACE. CANEM TO PROVIDE NEW PAC POLE FROM OPEN JOIST SPACE TO 96" A.F.F. (TOP OF RACKING) C/W 3/4" CONDUIT FOR POWER. CANEM TO INSTALL OUTLETS IN MILLWORK/RACKING. THIS ELECTRICAL CONTRACTOR TO COORDINATE SCOPE WITH CANEM.
 - PROVIDE ONE (1) 20A 600V 3-PHASE POWER SUPPLY @ 54" A.F.F. FOR HARDWIRED CONNECTION TO PRINCESS AUTO'S FORKLIFT BATTERY CHARGER.
 - PROVIDE ONE (1) 30 A 600V 3-PHASE POWER SUPPLY @ 54" A.F.F. TERMINATED IN AN UNUSED DISCONNECT SWITCH FOR PRINCESS AUTO'S BALER.
 - PROVIDE CONDUIT W/ PULL STRING FROM CEILING SPACE TO ATTENUATOR LOCATION C/W SINGLE GANG LOW VOLTAGE RING.
 - POWER CONNECTIONS FOR HOT WATER TANK AND IT'S PUMP.
 - PROVIDE TWO (2) 20A 120V OUTLETS TERMINATED IN A JUNCTION BOX IN THE CEILING SPACE OF THE I.T. ROOM FOR DATA CABINET.
 - PROVIDE FOUR (4) 2" CABLE ROUTES OUT OF THE I.T. ROOM IN AN ACCESSIBLE SPACE FOR THE MAIN SHOWROOM AREA DATA CABLING.
 - PROVIDE TWO (2) 2" CABLE ROUTES OUT OF THE I.T. ROOM IN AN ACCESSIBLE SPACE FOR THE OFFICE AREA DATA CABLING.
 - PROVIDE ONE (1) 2" CABLE ROUTES OUT OF THE I.T. ROOM IN AN ACCESSIBLE SPACE FOR THE OFFICE AREA DATA CABLING.
 - PROVIDE A 4' x 8' x 3/4" PAINTED PLYWOOD BACKBOARD.
 - PROVIDE A 3/4" CONDUIT INCLUDING 3-18/2c FROM MAIN FIRE ALARM CONTROL PANEL TO THE BACKBOARD IN I.T. ROOM FOR PRINCESS AUTO'S INTRUSION DETECTION SYSTEM. G.C. TO ALSO PROVIDE A CABLE ROUTE FOR TWO (2) CABLES FROM MAIN FIRE ALARM CONTROL PANEL TO I.T. ROOM.
 - PROVIDE 120VAC NON-SWITCHED WRED CONNECTION TO FOUR (4) ELECTRICAL BOXES AT PLYWOOD BACKER FOR PRINCESS AUTO'S INTRUSION DETECTION SYSTEM AND ACCESS CONTROL SYSTEM.
 - PROVIDE ROUGH-IN FOR ANY CEILING MOUNTED EQUIPMENT THROUGH GWS CEILING AND SECURITY WIRE MESH.
 - PROVIDE 1 GANG WATERPROOF BOX AT ALL EXTERIOR CAMERA LOCATIONS CONNECTED TO A 4 SQUARE JUNCTION BOX MOUNTED INSIDE WITH A 3/4" SLEEVE THROUGH WALL. ENSURE TO SEAL AS APPLICABLE TO MAINTAIN MOISTURE BARRIER. PROVIDE A 3/4" CONDUIT STUB FROM THE INTERIOR JUNCTION BOX UP TO OPEN CEILING SPACE. ENSURE TO PROVIDE IN ACCESSIBLE LOCATION AND CONSULT WITH PRINCESS AUTO FOR MOUNTING HEIGHTS AND EXACT CAMERA LOCATIONS.
 - PROVIDE MICROWAVE OUTLET IN CABINET. COORDINATE LOCATION WITH MILLWORK SHOP DRAWINGS.
 - PROVIDE DUPLEX OUTLET AND AV CONNECTION @ 54" A.F.F. FOR WALL MOUNTED TV (TV BY PAL). PROVIDE IN-WALL / IN-CEILING CONDUITS BETWEEN AV OUTLETS AS NOTED ON DRAWINGS.
 - PROVIDE POWER SUPPLY AND CONNECTION TO DYSON HAND DRIVER (SUPPLY AND INSTALL BY THIS CONTRACTOR.)
 - RE-USE EXISTING POWER CONNECTION TO EXISTING AUTO DOOR TO FEED NEW AUTODOOR SYSTEM. EXTEND EXISTING WIRING AND CONDUITS TO SUIT.
 - ELECTRICAL DISTRIBUTION, REFER TO SINGLE LINE DIAGRAM FOR DETAILS.
 - PROVIDE A GROUND BAR C/W #6 WIRING FOR DATA CABINET.
 - EXISTING PLYWOOD BACKBOARD
 - 4.0kW CEILING MOUNTED ELECTRIC HEATER, SUPPLIED AND INSTALLED BY MECHANICAL CONTRACTOR, WIRED BY THIS ELECTRICAL CONTRACTOR.
 - CONTRACTOR TO PROVIDE A FULLY FUNCTIONAL UNIVERSAL WASHROOM TO SUIT LATEST QBC REQUIREMENTS. REFER TO DETAIL 1/E100 FOR DETAILS.
 - EXTEND EXISTING CONDUITS FOR INCOMING TELEPHONE AND FIBER SERVICE.
 - POWER CONNECTION FOR OVERHEAD DOOR'S SAFETY WARNING BUZZER, SIGN PACKAGE AND COMMUNICATION LIGHT SYSTEM SUPPLIED BY GC AND INSTALLED BY THIS CONTRACTOR. CONTRACTOR TO PROVIDE ALL REQUIRED WIRING AND CONDUITS TO SUIT. COORDINATE LOCATION AND ALL REQUIREMENTS WITH DOOR SUPPLIER.
 - PROVIDE 120V POWER JB (LABEL CIRCUIT AT JB LOCATION) IN JOIST SPACE. PROVIDE 3/4" CONDUIT FOR POWER AND RUN DOWN THE COLUMN. CANEM TO INSTALL OUTLETS IN MILLWORK/RACKING. THIS ELECTRICAL CONTRACTOR TO COORDINATE SCOPE WITH CANEM.





#	DATE	ISSUES & REVISIONS
01	01 NOV 02, 2020	ISSUED FOR REVIEW & COMMENT
02	01 NOV 02, 2020	ISSUED FOR PERMIT
03	01 NOV 03, 2020	ISSUED FOR TENDER

ELECTRICAL - NEW RCP AND FIRE ALARM LAYOUTS
RIOCAN THICKSON RIDGE
PRINCESS AUTO - STORE 22
UNIT 8 -1629 VICTORIA STREET EAST, ON LIN 9L4

DATE: NOVEMBER 2020
DRAWN BY: F.K.
CHECKED BY: J.L.K.
COMM. NO. 20-063

E103

CONTRACTOR SHALL CHECK AND VERIFY
ALL DIMENSIONS ON SITE.
DO NOT SCALE DRAWINGS.

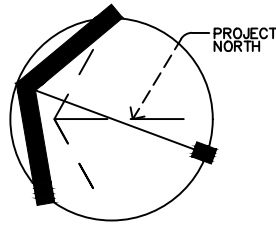
GENERAL NOTES:

- COORDINATE EXACT LOCATION AND MOUNTING HEIGHT OF ALL LIGHT FIXTURES WITH ARCHITECTURAL DRAWINGS.
- PROVIDE CONTACTOR AND CONTROLS FOR ALL LIGHTING NOT CONTROLLED BY A SWITCH. CONFIRM EXTENT OF INDIVIDUAL CONTROLS WITH OWNER. ALLOW FOR MINIMUM NINE (9) - CONTROL ZONES.
- COORDINATE LOCATION OF ALL EMERGENCY REMOTE HEADS AND EXIT SIGNS WITH RACKS AND SECURITY CAMERAS TO ENSURE THERE ARE NO CONFLICTS.
- CONTRACTOR TO ALLOW FOR THE SUPPLY AND INSTALLATION OF THREE (3) - ADDITIONAL EXIT SIGN DURING CONSTRUCTION AT THE DISCRETION OF THE ARCHITECT OR INSPECTOR.
- ALL EXIT SIGNS AND EMERGENCY LIGHTING INSIDE THE SALES AREA SHALL BE PENDANT MOUNTED. PROVIDE ALL REQUIRED MOUNTING ACCESSORIES TO SUIT. COORDINATE MOUNTING HEIGHT WITH ARCHITECT PRIOR TO INSTALLATION.
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE THE VOLTAGE DROPS FOR ALL BRANCH CIRCUITS (LIGHTING CIRCUITS, FIRE ALARM CIRCUITS AND ETC.) AND ENSURE CORRECT WIRE SIZES ARE SELECTED AND USED.

KEY NOTES:

- APPROXIMATE LOCATION OF MASTER SWITCH FOR SHOWROOM AND WAREHOUSE LIGHTING, FINAL LOCATION TO BE COORDINATED WITH ARCHITECTURAL DRAWINGS.
- APPROXIMATE LOCATION OF CEILING MOUNTED PROJECTOR (SUPPLIED AND INSTALLED BY PAL) FINAL LOCATION TO BE COORDINATED WITH ARCHITECTURAL DRAWINGS.
- 30" GWB BULKHEAD FROM TOP OF GLAZING TO 14"-6" A.F.F. TO CONCEAL LIGHTING, HVAC, ETC.
- FIRE ALARM STROBE
- APPROXIMATE LOCATION OF EAS CONTROL PANEL (PANEL TO BE LOCATED IN OPEN CEILING SPACE ABOVE VESTIBULE) - FINAL LOCATION TO BE COORDINATED WITH ARCHITECTURAL DRAWINGS.
- PROVIDE 18" X 18" X 6" JUNCTION BOX IN CEILING SPACE ON INSIDE FACE OF GWB BULKHEAD IN CLOSE PROXIMITY TO ACCESS HATCH ACCESSIBLE FROM TOP OF CEILING.
- EMERGENCY REMOTE HEADS INSIDE THE SALES AREA SHALL BE SUSPENDED AT 15'-6" A.F.F TO U/S OF FIXTURE.
- EXIT SIGNS LOCATED IN SALES AREA SHALL BE SUSPENDED AT 15'-6" A.F.F TO U/S OF FIXTURE.
- EMERGENCY REMOTE HEADS AND EXIT SIGNS LOCATED IN WAREHOUSE AREA SHALL BE SUSPENDED AT 16'-6" A.F.F TO U/S OF FIXTURE.
- ALL WALL MOUNTED EXIT SIGNS ABOVE DOORS SHALL BE MOUNTED AT 12'-0" A.F.F.
- EXISTING FIRE ALARM CONNECTIONS FOR EXISTING SPRINKLER SYSTEM TO REMAIN AS IS.
- EXISTING MAIN FIRE ALARM PANEL LOCATED IN EXISTING MAIN ELECTRICAL ROOM.
- EXIT SIGN SHALL BE MOUNTED ABOVE DOOR BUT BELOW 8'-0" A.F.F.
- CONTRACTOR TO ALLOW FOR CLEANING AND REPLACING ANY DAMAGED EXTERIOR LIGHTING.

ELECTRICAL - NEW RCP AND FIRE ALARM LAYOUT
SCALE: 1/8"=1'-0"



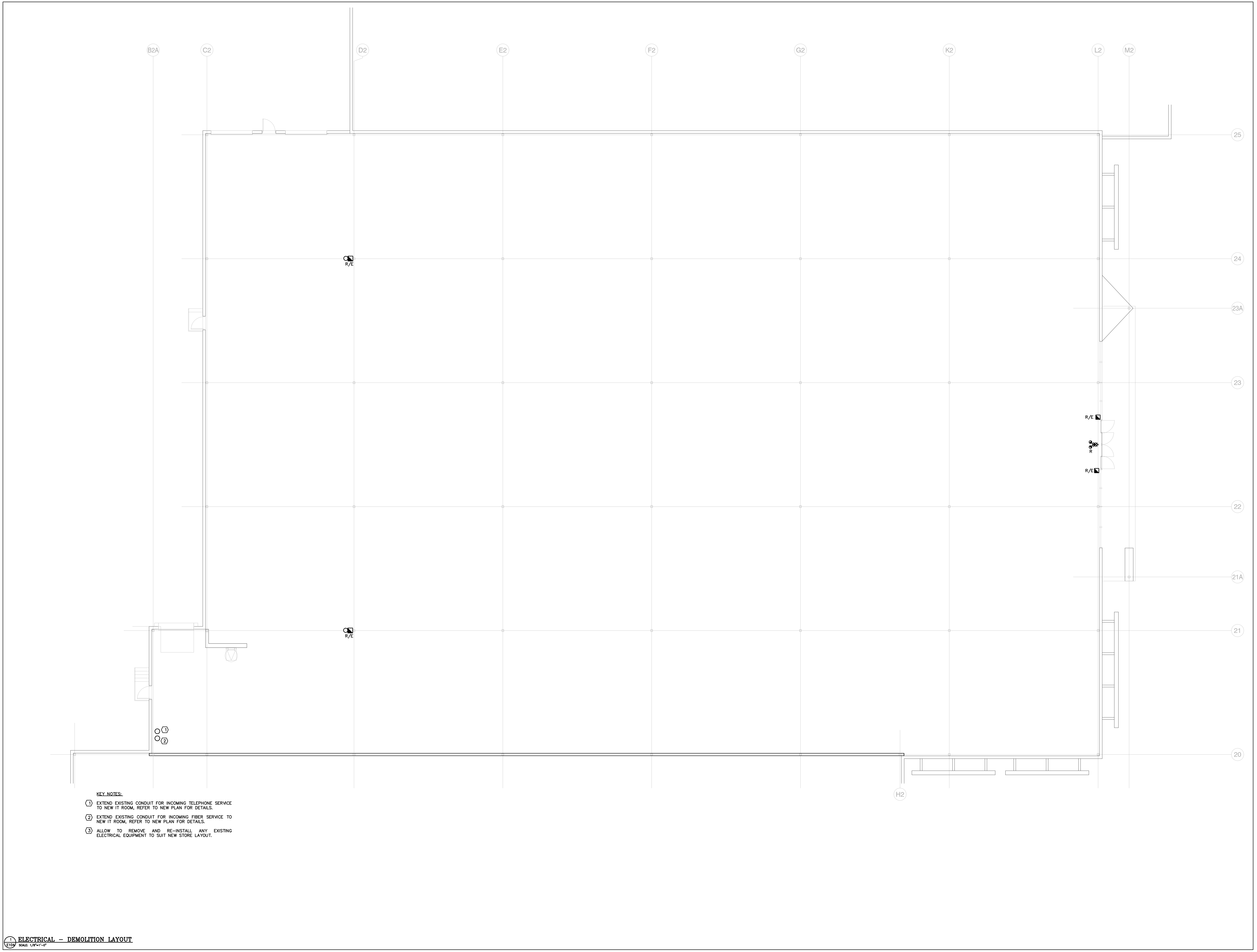
#	DATE	ISSUES & REVISIONS
03	NOV 03, 2020	ISSUED FOR TENDER
02	NOV 02, 2020	ISSUED FOR PERMIT
01	OCT 23, 2020	ISSUED FOR REVIEW & COMMENT

ELECTRICAL – DEMOLITION LAYOUT
RIOCAN THICKSON RIDGE
PRINCESS AUTO – STORE 22
UNIT 8 –1629 VICTORIA STREET EAST, ON LIN 9L4

DATE:	NOVEMBER 2020
DRAWN BY:	F.K.
CHECKED BY:	J.L.K.
COMM. NO.	20-063

E104

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DO NOT SCALE DRAWINGS.



KEY NOTES.

- 1 EXTEND EXISTING CONDUIT FOR INCOMING TELEPHONE SERVICE TO NEW IT ROOM, REFER TO NEW PLAN FOR DETAILS.
- 2 EXTEND EXISTING CONDUIT FOR INCOMING FIBER SERVICE TO NEW IT ROOM, REFER TO NEW PLAN FOR DETAILS.
- 3 ALLOW TO REMOVE AND RE-INSTALL ANY EXISTING ELECTRICAL EQUIPMENT TO SUIT NEW STORE LAYOUT.

GENERAL

1.1. REFER TO THE PROJECT GENERAL CONDITIONS, TENDER FORMS, ARCHITECTURAL SPECIFICATIONS AND DRAWINGS, ETC. PRIOR TO SUBMITTING BID, CAREFULLY EXAMINE THE SITE CONDITIONS TO ENSURE THE BID INCLUDES FOR EVERYTHING NECESSARY FOR COMPLETION OF WORK IN ACCORDANCE WITH THESE PLANS AND SPECIFICATIONS.

1.2. REFER TO ARCHITECTURAL MILLWORK DRAWINGS FOR EXACT DIMENSIONING RELATED TO ELECTRICAL DEVICES (SWITCHES, POWER AND COMMUNICATION OUTLETS, FLOOR MONUMENTS, ETC.)

2. CODES AND BY-LAWS

2.1. COMPLY WITH LAWS, REGULATIONS AND CODES OF AUTHORITIES HAVING JURISDICTION. PERFORM WORK IN ACCORDANCE WITH LOCAL APPLICABLE GOVERNING CODES AND AUTHORITIES INCLUDING THE NATIONAL BUILDING CODE (NBC)

3. PERMITS, CERTIFICATES AND FEES

3.1. PAY FOR AND OBTAIN PERMITS, INSPECTION AND CERTIFICATES TO COMPLETE WORK, KEEP COPY OF SUCH PERMITS AND CERTIFICATES, ETC., ON JOB SITE. WHERE WORK INVOLVES ELECTROMAGNETIC LOCK WORK, PROVIDE PERMITS AS REQUIRED BY LOCAL AUTHORITY HAVING JURISDICTION.

4. OWNER'S GUIDELINES FOR TENANT CONSTRUCTION

4.1. SHALL BE STRICTLY ADHERED TO BY THIS CONTRACTOR.

4.2. WORK WHICH MAY CAUSE NOISE DISTURBANCES MUST BE SCHEDULED AT TIMES APPROVED BY OWNER AND/OR LANDLORD. COORDINATE WORK WITH TRADES TO MINIMIZE NOISE DISTURBANCES.

5. SCOPE OF WORK

5.1. INCLUDES BUT IS NOT LIMITED TO, SUPPLY LABOUR, TOOLS, SERVICES AND EQUIPMENT, AND PROVIDE MATERIALS REQUIRED TO COMPLETE INSTALLATION AND/OR RELOCATION, AND TESTING OF ALL SYSTEMS IN ACCORDANCE WITH THIS SPECIFICATION AND DRAWINGS, INCLUDING:

5.1.1. DEMOLITION AND PROVISION OF NEW ELECTRICAL SYSTEMS AS INDICATED ON DRAWINGS. POWER DISTRIBUTION INCLUDING ALL CONDUITS, OUTLET BOXES, FLOOR BOXES, WRING, DEVICES AS INDICATED ON THE LAYOUT DRAWINGS.

5.1.2. RELOCATION OF EXISTING LUMINAIRES AND PROVISION OF NEW LUMINAIRES AS INDICATED ON DRAWINGS, INCLUDING LIGHTING CONTROL DEVICES.

5.1.3. PROVISION OF EXT LIGHT SYSTEMS AND EMERGENCY BATTERY UNITS / REMOTE HEDS INCLUDING ASSOCIATED CONDUITS AND WIRING TO FORM A COMPLETE EMERGENCY LIGHTING SYSTEM.

5.1.4. RELOCATION AND PROVISION OF NEW FIRE ALARM DEVICES AS INDICATED.

5.2. UNLESS NOTED OTHERWISE, ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR THE REMOVAL OF ALL WIRING, CABLES AND ELECTRICAL DEVICES EXISTING IN WALLS TO BE DEMOLISHED AND REMOVAL OF ALL OTHER REDUNDANT ELECTRICAL DEVICES NOT IN PLANS, OUT BOXES AND CAP UNLESS INSTRUCTIONS TO OUSTH AND REMOVE UNUSED WIRING BACK TO PANELBOARD. REVISE PANELBOARD DIRECTORIES IF AFFECTED BY WORK. OBSOLETE MATERIALS, WHICH ARE DISCONNECTED AND ARE NOT TO BE RELOCATED OR REUSED, WILL BECOME THE PROPERTY OF THIS CONTRACTOR. REMOVE FROM SITE AND DISPOSE.

5.3. PROVIDE JUNCTION BOXES, OUTLET BOXES, WIRING, PLATES, ETC., AS NECESSARY FOR COMPLETE RELOCATION OF DEVICES. CLEAN AND RELAMP RELOCATED LUMINAIRES. REPLACE EXISTING BALLASTS WHEN RELOCATION WORK IS COMPLETE, CONFIRM RELOCATED DEVICES ARE IN PROPER WORKING ORDER.

5.4. WHERE EXISTING SERVICES PASS THROUGH OR ARE IN AN AREA TO SERVE ITEMS WHICH ARE TO REMAIN, MAINTAIN SERVICES. INCLUDE FOR RE-ROUTING SEE EXISTING SERVICES CONCEALED BEHIND FINISHES AND WHICH BECOME EXPOSED DURING RENOVATION WORK, SO AS TO BE CONCEALED BEHIND FINISHES.

5.5. IN AREAS WHICH ARE NOT BEING ARCHITECTURALLY RENOVATED AND WHICH DIVISION 28, 27, 28 MUST RUN SERVICES THROUGH, BE RESPONSIBLE FOR REMOVAL AND RELOCATION OF ARCHITECTURAL CEILING TILES, MECHANICAL EQUIPMENT, ETC., AS REQUIRED FOR INSTALLATION OF WORK. SECURELY SUPPORT ANY DEVICE/LUMINAIRE BEING EXPOSED DUE TO REMOVAL OF CEILING TILES OR MEANS. PRIOR TO REMOVAL OF CEILING TILES OR OTHER DEVICES, INSPECT FOR DAMAGES/WORKING ORDER AND REPORT ANY DEFICIENCIES TO OWNER PRIOR TO START OF WORK.

5.6. ANY FIRE ALARM, SECURITY SYSTEM OR COMMUNICATION SYSTEM (IF APPLICABLE) DEVICE THAT HAS BEEN WORKED ON OR RELOCATED SHALL BE TESTED AND VERIFIED BY THE OWNER'S AUTHORIZED CONTRACTOR AFTER COMPLETION OF WORK. INCLUDE IN BID FOR ALL COSTS.

5.7. ENSURE ALL EXISTING CEILING MOUNTED FIRE ALARM BELLS/SPEAKERS ARE SECURELY ATTACHED TO CEILING/WALL AND ARE FLUSH WITH CEILING TILES AS REQUIRED.

6. CHANGES TO SCOPE OF WORK

6.1. NO CHARGE FOR MATERIAL AND LABOUR SHALL BE ADDED TO THE CONTRACT FOR OUTLETS MOVED WITHIN TEN (10) FEET FROM THE LOCATION SHOWN ON THE PLANS PRIOR TO ROUGH-IN.

6.2. ADDITION OR DELETION OF WORK SHALL BE PRICE BASED ON INDUSTRY STANDARD LABOUR RATES. MATERIAL PRICES STANDARD TRADE DISCOUNTS. LABOUR UNITS SHALL NOT EXCEED NECA 1, MARK-UP SHALL NOT EXCEED TEN PERCENT (10%) FOR OVERHEAD AND FIVE PERCENT (5%) FOR PROFIT.

7. COORDINATION AND COOPERATION

7.1. COORDINATE WORK WITH ALL TRADES TO ENSURE A PROPER AND COMPLETE INSTALLATION.

7.2. THIS CONTRACTOR IS RESPONSIBLE FOR OBTAINING ACCURATE DIMENSIONS FROM THE ARCHITECTURAL DRAWINGS AND WITH ALL AFFECTED TRADES PRIOR TO INSTALLATION. VERIFY THE LOCATION OF EXISTING MECHANICAL AND ELECTRICAL SERVICES IN THE CEILING SPACE OF THIS FLOOR, AND IN THE CEILING SPACE OF THE FLOOR BELOW WHERE NEW SERVICES ARE REQUIRED TO PASS THROUGH THAT SPACE.

7.4. THIS CONTRACTOR SHALL COORDINATE AND PROVIDE TEMPORARY POWER SERVICES AND LIGHTING TO OTHER TRADES THROUGHOUT DURATION OF CONSTRUCTION.

8. HAZARDOUS MATERIALS

8.1. IF AT ANY TIME DURING COURSE OF WORK ASBESTOS MATERIALS ARE ENCOUNTERED OR SUSPECTED, STOP WORK IMMEDIATELY AND REPORT TO THE GENERAL CONTRACTOR. IN ACCORDANCE WITH NATIONAL BUILDING CODE REGULATION TO GENERAL CONTRACTOR, DO NOT RESUME WORK IN AFFECTED AREA WITHOUT APPROVAL FROM GENERAL CONTRACTOR.

8.2. MATERIALS CONTAINING PCBs OR MERCURY SHALL BE PROPERLY DISPOSED OF OFFSITE IN ACCORDANCE WITH LOCAL GOVERNING AUTHORITY REGULATIONS.

9. INTERRUPTIONS TO AND SHUT-DOWNS OF EXISTING SERVICES AND SYSTEMS

9.1. COORDINATE WITH BUILDING'S OPERATING STAFF AND OBTAIN A OWNER'S WRITTEN APPROVAL TO PERFORM WORK WITH DISRUPTIONS TO EXISTING BASE BUILDING SYSTEMS AND SERVICES AT ACCEPTABLE TIMES. INCLUDE FOR COSTS OF PREMIUM TIME TO PERFORM WORK DURING NIGHTS, WEEKENDS OR OTHER TIME OUTSIDE OF NORMAL WORKING HOURS, AS NECESSARY TO MAINTAIN SERVICES IN OPERATION OR WITH MINIMUM INTERRUPTIONS.

10. CUTTING, PATCHING AND CORE DRILLING

10.1. PILE SLEEVES SHALL BE PROVIDED THROUGH FIRE-RATED WALL AND FLOORS.

10.2. IN FIRE RATED CONSTRUCTION, PACK AND SEAL VOID BETWEEN OPENING AND PIPE, JOINTS OR CONDUIT FOR LENGTH OF PENETRATION WITH ASBESTOS FREE MORTAR AND INTUMESCENT UL/C LISTED AND LABELED MATERIALS. MAKE WATER/TIGHT AND INSTALL FIRESTOP AND SMOKE SEAL MATERIALS IN ACCORDANCE TO UL/C CERTIFICATION AND MANUFACTURER'S REQUIREMENTS TO PROVIDE FIRESTOP RATINGS. SEPARATION OF OPENINGS IN ACCORDANCE WITH GOVERNING BUILDING CODE REQUIREMENTS.

10.3. CUTTING OR CORE DRILLING OF CONCRETE STRUCTURE IS PERMITTED ONLY WITH THE APPROVAL OF THE LANDLORD, LANDLORDS STRUCTURAL CONSULTANT AND X-RAY INSPECTION. COORDINATE WITH CONCRETE AND STEEL JOINT TENDERS. WORK TO BE PERFORMED OUTSIDE OF NORMAL WORKING HOURS. OBTAIN WRITTEN APPROVAL FROM LANDLORD PRIOR TO ANY DRILLING, CORING OR X-RAYING. ANY DRILLING, CORING OR X-RAYING IS TO BE PERFORMED BY BASE BUILDING CONTRACTOR AND TO BE INCLUDED IN TENDER PRICE.

11. NOISE AND VIBRATION

11.1. ELECTRICAL EQUIPMENT SHALL OPERATE WITHOUT OBJECTIONABLE NOISE OR VIBRATION. IF, IN THE OPINION OF THE CONSULTANT, THE EQUIPMENT OPERATES WITH NOISE OR VIBRATION, THEN THE EQUIPMENT SHALL BE REPLACED OR NOISE OR VIBRATION ELIMINATED.

11.2. CONNECTION TO NOISE-PRODUCING AND VIBRATING EQUIPMENT SHALL BE MADE WITH LIQUID-TIGHT FLEXIBLE CONDUIT AND ASSOCIATED CONNECTORS. THIS INCLUDES TRANSFORMERS, DIMMING EQUIPMENT RACKS, CONVERTERS, AND MOTORS. USE A MINIMUM OF 1m (3FT) OF FLEXIBLE CABLE WITH SLACK AT EACH DEVICE.

11.4. VIBRATION ISOLATORS SHALL BE PROVIDED WHERE INDICATED OR REQUIRED. PROVIDE RUBBER ISOLATORS WHEN WALL MOUNTED OR SUSPENDED AND 12mm (1/2") HIGH DENSITY NEOPRENE SANDWICH PADS (TYPE MWP) WHEN FLOOR MOUNTED.

12. ACCESS DOORS AND PANELS

12.1. ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR THE COORDINATION OF LOCATION OF ACCESS DOORS AND/OR PANELS TO GIVE ACCESS TO NEW AND EXISTING ELECTRICAL EQUIPMENT OR SYSTEMS AND OTHER SIMILAR ELECTRICAL WORK WHICH MAY NEED MAINTENANCE OR REPAIR BUT WHICH IS CONCEALED IN INACCESSIBLE CONSTRUCTION.

12.2. ACCESS DOORS AND/OR PANELS WILL BE SUPPLIED AND INSTALLED BY BASE BUILDING CONTRACTOR. PROVIDE INSTALLATION OF ELECTRICAL WORK, PREPARE ON A SET OF REFLECTED CEILING PLANS, COMPLETE LAYOUTS OF ALL CEILING ACCESS DOORS WHICH ARE REQUIRED TO ACCESS NEW LAYOUTS, WORK FOR APPROVAL AND SHOW THE EXACT SIZES AND LOCATIONS OF SUCH CEILING ACCESS DOORS.

13. INSPECTION OF WORK

13.1. CONSULTANT SHALL AT ALL TIMES HAVE ACCESS TO WORK AND SHALL BE ADVISED AT AGREED UPON TIMES OF STAGES OF WORK.

13.2. WHERE STANDARDS OF WORK ARE SPECIFIED OR IMPLIED AND WORK DOES NOT COMPLY WITH PERFORMANCE SPECIFIED OR IMPLIED, SUCH DEFICIENCY SHALL BE CORRECTED AS DIRECTED BY CONSULTANT. ANY SUBSEQUENT TESTING TO VERIFY PERFORMANCE SHALL BE DONE AT CONTRACTOR'S EXPENSE. ANY CHARGES FOR OWNER'S STAFF, CONSULTANT OR OTHER PERSONNEL RELATED TO SUCH RETESTING SHALL ALSO BE AT EXPENSE OF CONTRACTOR.

14. PRODUCTS AND MATERIALS

14.1. CSA, UL, UL/C AND CSA APPROVALS SHALL BE PROVIDED BY THE MANUFACTURER AND REQUIRED BY FEDERAL, PROVINCIAL OR LOCAL AUTHORITIES.

14.2. PRODUCTS LISTED AND/OR SPECIFIED REQUIRED FOR THE PERFORMANCE OF THE WORK SHALL BE IDENTIFIED WITH THE MANUFACTURER'S NAME AND A UNIFORM PATTERN THROUGHOUT. EXCEPT OTHERWISE NOTED, ALL MATERIALS AND PRODUCTS SHALL BE EQUIVALENT TO THE BASE BUILDING MATERIALS.

14.3. ENSURE PRODUCTS AND MATERIALS SUPPLIED FROM MANUFACTURERS OTHER THAN THE BASE SPECIFIED MANUFACTURERS ARE EQUIVALENT TO THE SPECIFIED ONES. ALTERNATIVES TO THE PRODUCTS AND MATERIALS SPECIFIED HEREIN AND/OR ON THE DRAWING MAY BE SUBMITTED SEPARATELY SHOWING ANY CHANGE TO THE BASE CONTRACT PRICE FOR THEIR SUBSTITUTION.

15. CONDUIT

15.1. EMT, GALVANIZED, COLD ROLLED STEEL TUBING TO CSA C22.2 NO. 83M, STEEL STEP SCREW FITTINGS.

15.2. LIQUIDTIGHT FLEXIBLE STEEL CONDUIT WITH PVC COVER TO CSA C22.2 NO. 56.

15.3. RIGID, SCHEDULE 40, PVC CONDUIT AND FITTINGS TO CAN/CSA C22.2 NO. 85M AND CSA C22.2 NO. 136.

15.4. USE LIQUIDTIGHT FLEXIBLE METAL CONDUIT FOR FINAL CONNECTIONS TO ROTATING EQUIPMENT AND DRY-TYPE TRANSFORMERS.

15.5. USE RIGID PVC CONDUIT IN CONCRETE SLABS.

15.6. USE EMT FOR ALL OTHER APPLICATIONS.

15.7. INSTALL, SUPPORT AND SECURE CONDUIT AND CONDUCTORS CONCEALED AND PROVIDE INSTALLATIONS IN ACCORDANCE WITH OESC AND LOCAL GOVERNING AUTHORITIES. PLAN AND COORDINATE LOCATIONS AND ROUTING OF SERVICES, WITH TRADES PRIOR TO INSTALLATION. IDENTIFY CONDUIT RUNS (I.E. TAG BOTH ENDS OF CONDUIT RUNS). EXPLOSIVE POWDER ACTUATED FASTENERS WILL NOT BE PERMITTED UNLESS SPECIFIC WRITTEN APPROVAL FOR THEIR USE AND TYPE HAS BEEN OBTAINED FROM LANDLORD. UNDER NO CIRCUMSTANCES USE CEILING SUSPENSION HANGERS OR GRIDS FOR SUSPENSION OF CONDUIT AND CONDUCTORS.

15.8. WHERE CONDUIT AND/OR CONDUCTORS ARE EXPOSED, ARRANGE SAME TO AVOID INTERFERENCE WITH OTHER WORK AND PARALLEL TO BUILDING LINES. WHERE HORIZONTAL CONDUITS AND/OR CONDUCTORS ARE EXPOSED, INSTALL AS HIGH AS POSSIBLE. DO NOT INSTALL CONDUIT AND/OR CONDUCTORS WITHIN 6" (150 MM) OF "HOT" PIPES OR EQUIPMENT UNLESS CONDUIT AND/OR CONDUCTORS ARE ASSOCIATED WITH EQUIPMENT. INDEPENDENTLY RUN CONDUIT AND CONDUCTORS MUST BE SUPPORTED FROM THE CEILING/WALL STRUCTURE.

15.9. ALL NON CONTINUOUS CONDUIT SYSTEMS FOR LAN CABLEING SHALL BE INSTALLED IN CONFORMANCE WITH THE CANADIAN WIRE CONNECTIONS CODE (CWC) AND THE NEAREST GROUNDING POINT. WHERE LAN CABLES ARE NOT RUN IN CONDUIT WITHIN CEILING SPACES, THEY SHALL BE RATED F76 AND SUPPORTED ON J HOOKS IN ACCORDANCE WITH MANUFACTURERS INSTALLATION GUIDELINES.

15.10. THE CONTRACTOR SHALL ADVISE THE CONSULTANT OF ANY COMMUNICATIONS CONDUIT LENGTHS IN EXCESS OF 70M PRIOR TO INSTALLATION.

15.11. INSTALL ALL WIRING IN CONDUIT UNLESS NOTED OTHERWISE, MINIMUM SIZE = 1/2" (16mm).

15.12. THE MINIMUM SIZE FOR TELECOMMUNICATIONS CONDUITS SHALL BE 3/4" (21mm).

15.13. MINIMUM SIZE CONDUIT FOR LAN SYSTEM SHALL BE 3/4" (21mm).

16. CABLE TRAYS

16.1. CABLE TRAY FITTINGS TO: EEMAC F5-1

16.2. CABLE TRAY SHALL BE cUL LISTED AND TYPE AND DIMENSIONS AS INDICATED ON DRAWINGS.

16.3. FITTINGS: HORIZONTAL ELBOWS, END PLATES, DROP OUTS, VERTICAL RISERS AND GROUPS. FEED THROUGH JOINTS AND REDUCED JOINTS. PROVIDE CONDUIT MANUFACTURED ACCESSORIES FOR CABLE TRAY SUPPORT, RADII ON FITTINGS TO SUIT APPLICATION AND INSTALLATION.

16.4. ACCEPTABLE MANUFACTURERS:

16.4.1. HUBBELL, LEGRAND CARLOFIL, CANADIAN ELECTRICAL RACEWAYS

16.5. HANGERS AND SUPPORTS

16.5.1. PROVIDE SUPPORTS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATION AND TO SUIT LOADING OF CABLE TRAYS.

16.6. EXECUTION

16.6.1. INSTALL COMPLETE CABLE TRAY SYSTEM

16.6

19.3. CONDUCTORS #14 TO #10 AWG: THERMOPLASTIC INSULATION TO CSA C22.2 NO. 75M. 190 NYLON 90 C, 600V INSULATION.

19.4. USE 200 NYLON CONDUCTORS FOR RECEPTACLE AND BRANCH CIRCUIT WIRING.

19.5. USE RW90 CONDUCTORS FOR ALL EQUIPMENT FEEDERS.

19.6. AC90 CABLE, 600 V, 90 C TO CSA 22.2 NO. 51.

19.7. REFER TO DRAWINGS FOR SIZING OF CONDUCTORS. GENERALLY, BRANCH CIRCUIT CONDUCTORS ARE ASSIGNED TO CONSULTANTS' DESIGNS. SUCH SIZES ARE MINIMUM REQUIREMENTS AND MUST BE INCREASED, TO SUIT LENGTH OF RUN AND VOLTAGE DROP. CONDUCTORS NOT SIZED ON DRAWINGS SHALL BE SIZED IN ACCORDANCE WITH OESC. MAXIMUM 2% VOLTAGE DROP IS PERMITTED.

19.8. CONDUCTORS FOR RUNS LONGER THAN 21M SHALL BE NO. 10 AWG AND FOR RUNS OF 21M OR MORE SHALL BE NO. 12 AWG. DO NOT USE CONDUCTORS SMALLER THAN NO. 12 AWG UNLESS OTHERWISE NOTED.

19.9. CONDUCTORS IN PLENUM SPACES AND IN RAISED FLOOR AREAS SHALL COMPLY WITH NATIONAL CULING CODE REQUIREMENTS WITH REGARDS TO FLAME AND SMOKE TEST F76 (PLENUM RATED).

19.10. USE AC90 CABLE FOR CONNECTIONS FROM CEILING BOXES TO LUMINAIRES IN CONCEALED CEILINGS. THE LENGTH OF AC90 CABLE FROM THE JUNCTION BOX TO THE LUMINAIRE NOT TO EXCEED 1200MM.

19.11. USE AC90 CABLE CONCEALED IN DRYWALL WALLS, PLASTER WALLS, BLOCK WALLS, STUD PARTITIONS FOR RECEPTABLES AND LIGHTING SWITCHES ONLY. THE LENGTH OF AC90 CABLE FROM THE JUNCTION BOX TO THE OUTLET NOT TO EXCEED 9600MM.

19.12. BX #12 MAY BE USED IN CEILING SPACE ON DOWN LENGTH TO RECEPTABLES IN PLENUM SPACE. BX RUNS SHALL NOT EXCEED 10' IN LENGTH AND SHALL NOT TERMINATE TO PANELS.

19.13. PROVIDE A 6MM POLYPROPYLENE PULL LINE IN EACH EMPTY CONDUIT.

19.14. MINIMUM CONDUCTOR SIZES: POWER (#12 AWG), LIGHTING (#12 AWG), CONTROL (#14 AWG)

20. WIREMAN

20.1 PROVIDE LOW-PROFILE, DURABLE WIREMAN AS INDICATED ON DRAWINGS

20.2 INSTALLATION SHALL REQUIRE NO CORE DRILLING OR TRENCHING.

20.3 COORDINATE POWER AND TELECOM COMPONENTS ACCORDING TO LOCATION AND ROUTING REQUIREMENTS. PROVIDE PRE-WIRED POWER COMPONENTS AS REQUIRED.

20.4 FINISHES SHALL BE REVIEWED AND CONFIRMED BY ARCHITECT

21. PANELBOARDS

21.1 PANELBOARDS TO CSA 22.1 NO 29.

21.2 ENCLOSURES: DEAD FRONT CONSTRUCTION, CODE GAUGE STEEL NEMA 2.

21.3 BUS: COPPER INCLUDING HALF CAPACITY GROUND BAR AND 200% NEUTRAL BAR. BRACED FOR MINIMUM INTERRUPTING CAPACITY OF 14KA RMS SYMMETRICAL.

21.4 CIRCUIT BREAKERS: BOLT-ON, QUICK-MAKE, QUICK-BREAK, THERMAL AND MAGNETIC TRIPS, TRIP INDICATING, TRIP FREE HANDLE, MINIMUM INTERRUPTING CAPACITY 14KA RMS SYMMETRICAL, TO CSA 22.2 NO. 5. MULTI-POLE BREAKERS TO HAVE COMMON HANDLE.

21.5 PROVIDE 2 KEYS PER PANEL BOARD, ALL PANELS KEYED ALIKE.

21.6 ACCEPTABLE MANUFACTURER: SQUARE D OR APPROVED EQUAL.

21.7 CONTRACTOR TO VERIFY AND MAKE NECESSARY ADJUSTMENTS TO ENSURE THAT LOADING ON EACH PHASE OF EXISTING AND NEW PANELBOARDS IS BALANCED. PROVIDE CONSULTANT WITH A PHASE LOADING REPORT. UNBALANCE LOAD SHALL BE LESS THAN 5%.

21.8 PROVIDE A CIRCUIT LOCK-ON DEVICE FOR FIRE ALARM, EMERGENCY LIGHTING, NIGHT LIGHTS, SECURITY AND EXIT LIGHTS CIRCUITS.

21.9 WHERE CIRCUITS ARE BEING ADDED TO EXISTING PANELBOARDS, PROVIDE BREAKERS OF TYPE TO MATCH EXISTING DEVICES. QUALITY AND STANDARDS OF BREAKERS SHALL MATCH EXISTING. CONFIRM REQUIREMENTS ON SITE PRIOR TO ORDERING.

22. WIRING DEVICES

22.1 SWITCHES: COMMERCIAL GRADE BACK AND SIDE WIRED, WITH GROUND SCREW TO CSA C22.2 NO 111, 15 AND 20 AMP AS REQUIRED, 1-POLE, 125V WHITE DECORATOR TYPE.

22.2 RECEPTABLES: COMMERCIAL GRADE BACK AND SIDE WIRED, WITH GROUND SCREW TO CSA C22.2 NO 111, 15 AND 20 AMP AS REQUIRED, 1-POLE, 125V WHITE DECORATOR TYPE.

22.3 SURGE PROTECTION DEVICE (SPD): TYPE 1 SURGE PROTECTIVE DEVICE. 100KA - 200KA PER PHASE RATING. MODEL TE02XD5154X421 MANUFACTURER: ADVANCED PROTECTION TECHNOLOGIES (APT), SEMENS, OR APPROVED EQUAL.

23. MOUNTING HEIGHTS AND DIMENSIONS

23.1 INSTALL THE FOLLOWING DEVICES/EQUIPMENT AT THE MOUNTING HEIGHTS INDICATED BELOW (DIMENSIONS ARE TO TOP OF DEVICE/EQUIPMENT UNLESS OTHERWISE SPECIFIED)

23.2 PANELBOARDS - 2000MM AFF

23.3 LIGHT SWITCH - 1200MM AFF

23.4 RECEPTACLE - FINISHED AREAS - 450MM AFF

23.5 RECEPTACLE - UNFINISHED AREAS - 1200MM AFF

23.6 LAN OUTLETS - FINISHED AREAS - 450MM AFF

23.7 LAN OUTLETS - UNFINISHED AREAS - 1200MM AFF

23.8 FURNITURE WHIP CONNECTIONS - 450MM AFF

23.9 FIRE ALARM PULL STATION - 1200MM AFF (CENTRE OF DEVICE)

23.10 FIRE ALARM END OF LINE DEVICE - 1400MM AFF

23.11 FIRE ALARM AUDIBLE DEVICES - 450MM BELOW CEILING

23.12 SHARED VISUAL DEVICES - THE ENTIRE LENS IS NOT LESS THAN 2000MM AND NOT MORE THAN 2400MM AFF

23.13 CARD READERS - 950MM AFF

23.14 EMERGENCY BATTERY UNITS - 450MM BELOW CEILING

23.15 STARTERS/DISCONNECT SWITCHES - 1800MM AFF

24. IDENTIFICATION NAMEPLATES

24.1 FOR EACH PIECE OF ELECTRICAL DISTRIBUTION EQUIPMENT FROM ELECTRICAL SOURCE TO SUBCIRCUIT DESIGNATED CONTRA BY THE OWNER/LANDLORD AND ONLY 1 ZONE. PROVIDE ENGRAVED LAMACOD IDENTIFICATION NAMEPLATES SECURED TO APPARATUS, WORDING TO INDICATE SOURCE OF ELECTRICAL SUPPLY AND COLOUR, FORMAT AND SIZE TO MATCH BASE EQUIPMENT.

24.2 PROVIDE REPLACEMENT BRANCH CIRCUIT DIRECTORY CARDS, NEATLY TYPEWRITTEN TO MATCH EQUIPMENT. PROVIDE APPROVED BY THE OWNER/LANDLORD AND ONLY 1 ZONE. PROVIDE ADHESIVE LABELS ON EACH POWER RECEPTACLE IDENTIFYING THE PANEL AND THE CIRCUIT NUMBER. UNLESS NOTED OTHERWISE, LABEL SHALL BE WHITE WITH BLACK LETTERING.

24.3 PROVIDE 'P'-TOUCH' LABELS ON ALL WIRING DEVICES TO REFLECT THE PANEL AND CIRCUIT NUMBERS. LABELS TO BE CLEAR WITH BLACK LETTERING, 5MM HIGH BOLD TYPE FACE.

25. GROUNDING

25.1 PROVIDE COMPLETE SYSTEM OF GROUNDING, WHICH COMPLIES WITH REQUIREMENTS OF AUTHORITIES HAVING JURISDICTION FOR ELECTRICAL WORK, INCLUDING REQUIRED GROUNDING SECTIONS OF OESC. CONTACT GROUNDING CONDUCTORS TO EXISTING BUILDING GROUND SYSTEM

26. FIRE ALARM SYSTEM

26.1 THE FIRE ALARM SYSTEM WORK, INCLUDING INTERCONNECTIONS SHALL BE PERFORMED BY THE CONTRACTOR'S DESIGNATED CONTRACTOR AS A SUB-CONTRACTOR TO THIS TRADE. TEST AND VERIFY ALL DEVICES UPON COMPLETION AND SUBMIT LETTER OF CERTIFICATION LISTING THE FLOOR, DEVICE AND THE DATE TESTED.

26.2 NEW WORK TO BE AN EXTENSION OF EXISTING SYSTEM. PROVIDE DEVICES TO MATCH EXISTING AND BE COMPLETELY COMPATIBLE WITH EXISTING SYSTEM. PERFORM WORK IN ACCORDANCE WITH LATEST EDITIONS OF CAN/ULC S524, -S536 AND -S537, AND LOCAL FIRE CODE HAVING JURISDICTION. UNLESS OTHERWISE NOTED, CONNECT ADDITIONAL DEVICES TO EXISTING ZONES SERVING AREA AND AS PER OESC REQUIREMENTS.

26.3 DURING WORK TO THE EXISTING FIRE ALARM SYSTEM THE TIME AND DURATION OF THE SYSTEM BEING APPROVED BY THE OWNER/LANDLORD AND ONLY 1 ZONE SHALL BE INTERRUPTED AT ANY 1 TIME. IN ALL AREAS WHERE THE RENOVATION WORK REQUIRES SHUTDOWN OF ANY PART OF THE FIRE ALARM PROTECTION SYSTEM, PROVIDE MANUAL FIRE ALARM PROTECTION (FIRE WARDEN) BY MEANS OF SUPERVISING THE AREA AS APPROVED BY GOVERNING AUTHORITIES. AT NO TIME SHALL THE FIRE ALARM SYSTEM BE OFF OR 1 ZONE BE LEFT INOPERATIVE OVERNIGHT. PROVIDE ALL REQUIRED BYPASS WIRING AND TEMPORARY WIRING AS MAY BE REQUIRED TO MAINTAIN ALL PARTS OF THE FIRE ALARM SYSTEM OPERATIVE DURING CONSTRUCTION AND ALTERATIONS.

26.4 PROVIDE FIRE ALARM PULL STATION AT LOCATIONS OF ELECTROMAGNETICALLY LOCKED DOOR. PULL STATIONS SHALL BE C/R/AUXILIARY CONTACTS FOR SUPPLY OF POWER TO SECURITY SYSTEM TO RELEASE LOCKS (FROM FIRE ALARM SYSTEM AND PULL STATION ACTIVATION). PROVIDE WIRING AND CONDUIT AND INTERCONNECTIONS TO SECURITY SYSTEM. CO-ORDINATE WORK WITH SECURITY SYSTEM CONTRACTOR. PROVIDE NATIONAL BUILDING CODE COMPLIANT MESSAGE SIGNAGE WITH PULL STATION FOR EMERGENCY EXIT, ADJACENT PULL STATION

26.5 COORDINATE WORK WITH MECHANICAL DIVISIONS WITH REGARDS TO SUPERSEDED WORK TO THE HEATING SYSTEMS, FIRE SUPPRESSION SYSTEMS, SUPERVISORY VALVES AND FLOW SWITCHES, BUILDING AUTOMATION SYSTEM, ETC.

PERFORM SUCH INTERCONNECTIONS TO STANDARDS OF EXISTING SYSTEMS AND DOCUMENT IN SHOP DRAWINGS.

26.6.FIRE ALARM SYSTEM TO BE VERIFIED AND A SIGNED VERIFICATION REPORT PROVIDED TO THE ENGINEER. TWO COPIES OF THE FIRE ALARM VERIFICATION REPORT ARE TO BE PROVIDED TO BROOKFIELD PROPERTIES MANAGER PRIOR TO TENANT OCCUPATION. PROJECT MANAGER IS TO BE NOTIFIED FORTY- EIGHT (48) HOURS PRIOR TO FIRE ALARM VERIFICATION TESTING.

27. CIRCUITRY

27.2.CIRCUITRY SHOWN ON PLANS IS FOR GROUPING PURPOSES ONLY. EXACT CIRCUITS ARE TO BE DETERMINED ON SITE BASED ON AVAILABILITY. RECORD FINAL CIRCUITRY ARRANGEMENT ON PANEL DIRECTORY AND ON AS-BUILT DRAWINGS.

27.3.POWER RECEPTACLES MOUNTED ON DEMISING/FIRE RATED PARTITIONS TO HAVE 2LB./SQ.FT SHEET LEAD BARRIER INSTALLED BEHIND AND EXTENDING 6' IN EACH SIDE OF THE OUTLET.

27.4.CIRCUITRY SHOWN ON PLANS AS EXISTING SHALL BE VERIFIED FOR CONTINUITY ON SITE. CONTRACTOR PRIOR TO COMMENCING NEW WORK, VERIFY THAT NO MORE THAN SIX (6) DUPLEX RECEPTACLES ARE CONNECTED TO ANY ONE CIRCUIT. RECORD EXISTING CIRCUITRY ON PANEL DIRECTORY AND ON AS-BUILT DRAWINGS.

28. LIGHTING SYSTEM

28.1.TEMPORARY LIGHTING SHALL BE PROVIDED THROUGHOUT THE PROJECT IN BOTH HARD CEILINGS AND IN T-BAR CEILING AREAS, WHERE REQUIRED BY THE GENERAL CONTRACTOR.

28.2.THROUGHOUT REVIEW CEILING TYPES, FINISHES AND CONSTRUCTION DETAILS WITH ARCHITECT/INTERIOR DESIGNER BEFORE PLACING LUMINAIRE ORDERS AND ENSURE BOXES, LAMP COVERS AND TEMPERATURES SHALL MATCH EXISTING STANDARDS PRIOR TO ROUGHING-IN AND INSTALL IN ACCORDANCE WITH APPLICABLE ARCHITECTURAL REFLECTED CEILING PLANS, LOCATIONS AND/OR WALL ELEVATIONS.

28.3.SUPPORT NEW AND/OR RELOCATED LUMINAIRES DIRECTLY TO CEILING SLAB STRUCTURE, NOT TO CEILING HANGERS, DUCTWORK, PIPING, CABLE TRAYS, ETC.

28.4.FLOUORESCENT LUMINAIRES, UNLESS NOTED OTHERWISE, SHALL BE CONNECTED TO EXISTING LIGHTING CIRCUITS SERVING THE SPACE OR AT ADJACENT CEILING JUNCTION BOXES. LAMP COVER TEMPERATURES SHALL MATCH EXISTING STANDARDS PRIOR TO SWITCHING WHERE INDICATED ON PLANS. MULTIPLE SWITCHES TO BE GANGED UNDER A COMMON COVERPLATE.

28.5.ALL LUMINAIRES, FLOUORESCENT AND INCANDESCENT, NEW AND EXISTING SHALL BE CIRCUITED TO MAINTAIN THE BUILDING LIGHTING SYSTEM ZONES (WHERE APPLICABLE).

28.6.WHERE AN EXISTING LIGHTING CIRCUIT SERVES MORE THAN ONE TENANT, PROVIDE RELAY(S) AS REQUIRED FOR INDEPENDENT CONTROL, AT DEMISING PARTITION AND INTERLOCK WITH THE BUILDING AUTOMATION SYSTEM. INSTALL RELAYS IN/ADJACENT TO THE EXISTING LIGHTING CONTROL PANEL IN THE 9TH FLOOR ELECTRICAL ROOM.

28.7.WHERE NEW INCANDESCENT LUMINAIRES ARE SHOWN CONNECTED TO EXISTING ONES, CONTRACTOR TO VERIFY LOAD ON CIRCUIT TO ENSURE THAT IT WILL NOT BE OVERTIRED.

28.8.MASTER SWITCHES SHALL CONSIST OF RELAYS OR MULTIPLE POLE RELAYS AS REQUIRED TO MEET NATIONAL BUILDING CODE REQUIREMENTS OF 1 LX PER MINIMUM. THE BASIC BUILDING LIGHTING CIRCUIT SERVING THE RESPECTIVE DESIGNATED AREA, MULTIPLE SWITCHES (TOGGLE, DIMMER, ETC.) SHALL BE GANGED UNDER A COMMON COVERPLATE.

28.9.PROVIDE SEPARATE NEUTRAL WIRING FOR EACH CIRCUIT SERVING LUMINAIRES LOCALLY CONTROLLED BY DIMMERS AND/OR SWITCHES.

29. LUMINAIR SCHEDULE

30.1.REFER TO LUMINAIR SCHEDULE AS INDICATED ON DRAWINGS.

31. LIGHTING CONTROLS

31.1.LIGHTING CONTROL SHALL BE AS INDICATED ON DRAWINGS.

31.2.WALL MOUNTED OCCUPANCY SENSOR SWITCH SHALL BE DUAL TECHNOLOGY TYPE WITH BUILT-IN OFF/AUTO/MANUAL SWITCH. FULL AUTO ADJUSTMENT SENSITIVITY AND TIMING ADJUSTMENT. PROGRAMMABLE WITH SELF-ADAPTIVE TECHNOLOGY. WAITSTOPPER MODEL DSW-301 OR APPROVED EQUAL. (OFFICES, STORAGE, ETC.)

32. EMERGENCY LIGHTING

32.2.EMERGENCY LIGHTING SHALL BE FED FROM THE EXISTING EMERGENCY CIRCUIT WHERE POSSIBLE. EMERGENCY CIRCUIT LOAD MUST NOT SURPASS 70% NEW EMERGENCY CIRCUITS ARE TO BE PROVIDED AS NECESSARY.

32.3.INCLUDE FOR AND PROVIDE TESTING OF EMERGENCY SYSTEM AND MEASUREMENT OF LIGHT LEVELS TO MEET NATIONAL BUILDING CODE REQUIREMENTS OF 1 LX PER MINIMUM. TO LUXX ABOVE. OBTAIN LOCAL INSPECTION APPROVALS. INCLUDE REQUIRED TEST LOGS. LAB AND SITE INSTRUMENTS, AND CHANGES AND DEVIATIONS INDICATED ON SUPPLEMENTAL DRAWINGS ISSUED WITH ADDENDUA, CHANGE NOTICES, AND SITE INSTRUCTIONS. MAINTAIN "AS-BUILT" WHITE PRINTS AT SITE FOR PERIODIC INSPECTIONS BY CONSULTANT THROUGHOUT DURATION OF WORK.

33. SHOP DRAWINGS AND OPERATING/MAINTENANCE INSTRUCTION MANUALS

33.1.SUBMIT SHOP DRAWINGS AND OPERATING/MAINTENANCE INSTRUCTION MANUALS FOR FIXTURES AND EQUIPMENT WITHIN 7 DAYS OF AWARD OF CONTRACT FOR REVIEW BY THE CONSULTANT AND OWNER.

33.2.PROPERLY IDENTIFY ELECTRONIC SHOP DRAWINGS FOR REVIEW AND SHOW IN DETAIL EQUIPMENT AND MATERIALS. ENDORSE EACH DRAWING; INCLUDE COMPANY NAME AND SUBMITTAL DATE.

34. RECORD DRAWINGS (AS-BUILTS)

34.1.WHEN WORK BEGINS AT SITE, CLEARLY AND ACCURATELY MARK ON A BOUND SET OF WHITE PRINTS OF CONTRACT DRAWINGS, ON A DAILY BASIS, ALL CHANGES AND DEVIATIONS FROM ROUTING AND LOCATIONS OF EQUIPMENT SHOWN ON CONTRACT DRAWINGS, CHANGES AND DEVIATIONS INCLUDING THOSE MADE BY ADDENDUA, CHANGE NOTICES, AND SITE INSTRUCTIONS, AND CHANGES AND DEVIATIONS INDICATED ON SUPPLEMENTAL DRAWINGS ISSUED WITH ADDENDUA, CHANGE NOTICES, AND SITE INSTRUCTIONS. MAINTAIN "AS-BUILT" WHITE PRINTS AT SITE FOR PERIODIC INSPECTIONS BY CONSULTANT THROUGHOUT DURATION OF WORK.

34.2.WHEN WORK ENDS AT SITE, UPDATE A COMPUTER FILE COPY OF CONTRACT DRAWINGS SET SO THAT IT REFLECTS ALL DEVIATIONS FROM ORIGINAL CONTRACT DOCUMENT DRAWINGS, THIS FORMING A TRUE "AS-BUILT" DRAWING DISK SET. RECORD ALL CHANGES MADE DURING CONSTRUCTION ON A SEPARATE RED LINE LOG. LAB AND SITE INSTRUMENTS, AND CHANGES AND DEVIATIONS INDICATED ON SUPPLEMENTAL DRAWINGS ISSUED WITH ADDENDUA, CHANGE NOTICES, AND SITE INSTRUCTIONS. MAINTAIN "AS-BUILT" WHITE PRINTS AT SITE FOR PERIODIC INSPECTIONS BY CONSULTANT THROUGHOUT DURATION OF WORK.

34.3.TWO SETS OF AS-BUILT DRAWINGS ARE TO BE PROVIDED TO THE LANDLORD INCLUDING AN ELECTRONIC COPY FOR FUTURE REFERENCE AND USE.

34.4.UPDATE LANDLORD'S DISTRIBUTION RISER DIAGRAMS POSTED IN ELECTRICAL ROOMS.

35. WARRANTY

35.1.WARRANTY WORK IS TO BE IN STRICT ACCORDANCE WITH CONTRACT DOCUMENTS AND FREE FROM DEFECTS FOR ONE (1) YEAR PERIOD FROM DATE OF WRITTEN ACCEPTANCE BY CONSULTANT. REPAIR AND/OR REPLACE ANY SUCH DEFECTS WHICH APPEAR WORK WITHIN WARRANTY PERIOD, ORDINARY WEAR AND TEAR AND MISFEIT, DAMAGE BY, OR CARELESSNESS OF OWNER'S STAFF OR AGENTS EXCLUDED, WITHOUT ADDITIONAL EXPENSE TO OWNER, WHERE SUCH DEFECTS OCCUR, BE RESPONSIBLE FOR COSTS INCURRED IN MAKING DEFINITIVE WORK GOOD, INCLUDING REPAIR OR REPLACEMENT OF BUILDING FINISHES, OTHER MATERIALS, OR DAMAGE TO OTHER EQUIPMENT CAUSED BY SUCH DEFECTS, OR BY SUBSEQUENT REPLACEMENT OR REPAIRS.

36. TESTING, COMMISSIONING, DEMONSTRATION OF USE & OPERATION OF SYSTEMS

36.1.ELECTRICAL SYSTEMS DEMONSTRATION WILL BE PERFORMED BY THE RESPECTIVE VENDOR/CONTRACTOR, TO THE OWNER, DEMONSTRATION TO TAKE PLACE AFTER SYSTEMS ARE TESTED AND/OR COMMISSIONED AND BEFORE TURNOVER OF SYSTEMS TO OWNER.

36.2.SUBMIT AMPERAGE READING FOR EACH PHASE OF EACH TRANSFORMER, AFTER LOADS HAVE BEEN BALANCED.

36.3.CONFIRMATION THAT ALL ELECTRICAL PANELS HAVE BEEN TAGGED WITH LAMCROID NAMEPLATES AND TYPED DIRECTORIES AND ALL PERMITS HAVE BEEN CLOSED.

37. FINAL ELECTRICAL SAFETY AUTHORITY CERTIFICATE

37.1.CERTIFICATE SHALL BE SUBMITTED UPON COMPLETION OF CONTRACT. FINAL PAYMENT SHALL BE SUBJECT TO RECEIPT OF THIS CERTIFICATE.

38. CLEANING UP

38.1.DURING CONSTRUCTION, KEEP SITE REASONABLY CLEAR OF RUBBISH AND WASTE MATERIALS. REMOVE RUBBISH AND DEBRIS, ARANGE AND PAY FOR REPAIR OF DAMAGES CAUSED AND LEAVE PREMISES AND WORK IN GOOD ORDER.

39. ELECTRICAL SHUT DOWNS

39.1.ALL ELECTRICAL SHUT DOWNS ARE TO BE COORDINATED WITH LANDLORD PROJECT MANAGER AND GENERAL CONTRACTOR A MINIMUM OF THREE (3) WEEKS PRIOR TO TIME OF PLANNED SHUT DOWN.