

**ELECTRICAL SPECIFICATIONS**  
**SCOPE OF WORK**

THE SCOPE OF WORK FOR THIS PROJECT IS TO SUPPLY AND INSTALL ALL REQUIRED ELECTRICAL ITEMS FOR A COMPLETE AND OPERATIONAL UPGRADE IN ACCORDANCE WITH THE INTENT OF THESE SPECIFICATIONS AND DRAWINGS AND ALL APPLICABLE CODES. THESE ITEMS INCLUDE BUT ARE NOT LIMITED TO THE FOLLOWING:  
 -REMOVE AND DISCARD ALL ELECTRICAL EQUIPMENT IN ACCORDANCE WITH THE DRAWINGS.  
 -REMOVE ALL WIRING OF DISCONNECTED EQUIPMENT BACK TO SOURCE AS INDICATED ON DRAWINGS.  
 -RELOCATE LIGHTING AND ELECTRICAL EQUIPMENT AS SHOWN ON DRAWINGS.  
 -PROVIDE WIRING FOR AUTOMATIC DOOR PUSHBUTTONS.  
 -REMOVE EXISTING FIRE ALARM PANEL AND INSTALL NEW FIRE ALARM PANEL. RECONNECT EXISTING DEVICES AND BELLS.  
 -SUPPLY, INSTALL AND CONNECT NEW SMOKE AND HEAT DETECTORS TO NEW FIRE ALARM PANEL USING ISOLATOR MODULES WHEN PASSING THROUGH A FIRE SEPARATION.  
 -SUPPLY, INSTALL AND CONNECT NEW REMOTE FIRE ALARM ANNUNCIATOR PANEL TO NEW FIRE ALARM PANEL.  
 -SUPPLY AND INSTALL COPPER CLAD MI CABLE FROM DISTRIBUTION PANEL TO ELEVATOR CONTROL CLOSET.  
 -SUPPLY AND INSTALL ALL LIGHTING INDICATED WITH CONTROL AS INDICATED.  
 -SUPPLY AND INSTALL ALL RECEPTACLES AS INDICATED.  
 -SUPPLY AND INSTALL ALL POWER FEEDER REQUIREMENTS FOR NEW MECHANICAL EQUIPMENT. ALL MECHANICAL EQUIPMENT SHALL BE COMPLETE WITH LOCAL DISCONNECT SWITCHES.  
 -SUPPLY AND INSTALL ALL NEW ELECTRIC HEATERS. REVIEW MECHANICAL DRAWINGS TO DETERMINE ALL REQUIREMENTS.  
 -SUPPLY AND INSTALL ALL EMERGENCY LIGHTING AS INDICATED.  
 -PROVIDE LABELING FOR ALL RECEPTACLES, PANELS AND SWITCHES. LABELING SHALL BE INDICATED ON "AS-BUILT" DRAWINGS. SWITCHES WHICH CONTROL CONTACTORS AND OTHER AREAS SHALL BE CLEARLY LABELED TO THE CONTRACT ADMINISTRATOR'S APPROVAL.  
 -THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER COORDINATION OF ALL ITEMS WITH OTHER TRADES TO ENSURE THAT ALL ITEMS REQUIRING ELECTRICAL ARE INSTALLED AS REQUIRED.

**EXECUTION SPECIFICATION**

THE CONTRACT INCLUDES THE FURNISHING OF LABOUR, MATERIAL, EQUIPMENT, AND SERVICES NECESSARY FOR A COMPLETE ELECTRICAL SYSTEM AS SHOWN ON THE DRAWINGS AND OPERATING TO THE COMPLETE SATISFACTION OF THE CONTRACT ADMINISTRATOR.

ALL ELECTRICAL WORK AND MATERIAL SHALL CONFORM WITH THE CURRENT RELEVANT AND/OR APPLICABLE BUILDING CODE, CANADIAN ELECTRICAL CODE AND TO THE SATISFACTION OF THE AUTHORITY HAVING JURISDICTION AND THE DESIGN PROFESSIONAL. FOR THE PURPOSE OF THIS SPECIFICATION INTERPRETATION OF THE WORD "CODE" SHALL MEAN ALL CODES, REGULATIONS AND REQUIREMENTS AS STATED ABOVE.

EXAMINE THE SITE, BUILDING AND LOCAL CONDITIONS AFFECTING WORK OF THIS CONTRACT. EXAMINE ARCHITECTURAL, STRUCTURAL, MECHANICAL AND ELECTRICAL CONDITIONS TO ENSURE WORK CAN BE PERFORMED WITHOUT CHANGES, AS SHOWN ON CONTRACT DRAWINGS. NO ALLOWANCES SHALL BE MADE LATER FOR NECESSARY CHANGES, UNLESS IT HAS BEEN BROUGHT TO CONTRACT ADMINISTRATORS ATTENTION IN WRITING, PRIOR TO CLOSING OF BID OPPORTUNITY.

APPLY FOR ALL PERMITS, SERVICES, FEES AND INSPECTIONS AND PAY FOR ALL FEES TO THE AUTHORITIES HAVING JURISDICTION. INCLUDE ALL COSTS IN BID OPPORTUNITY QUOTE.

OBTAIN APPROVALS FROM THE ELECTRICAL INSPECTION AUTHORITY AND NOTIFY THE CONTRACT ADMINISTRATOR OF ANY CHANGES REQUESTED BY THE INSPECTION AUTHORITY.

WHERE DOUBT EXISTS AS TO THE MEANING OF THE DRAWINGS OR SPECIFICATIONS, OBTAIN CLARIFICATION PRIOR TO BID CLOSING IN ACCORDANCE WITH B4.

ALL MATERIALS USED SHALL BE NEW, OF THE TYPE SPECIFIED, AND APPROVED BY CERTIFICATION AGENCY RECOGNIZED BY THE AUTHORITY HAVING JURISDICTION, AND FREE FROM DEFECTS.

ALL ELECTRICAL EQUIPMENT INSTALLED OR CONNECTED SHALL BE IDENTIFIED BY MEANS OF WHITE LAMICOD LABELS c/w MINIMUM 3/8" BLACK LETTERING.

CLEAN ALL EQUIPMENT DURING CONSTRUCTION AND AGAIN ON COMPLETION OF THE CONTRACT.

REMOVE ALL SURPLUS MATERIALS, CUTTINGS, PACKAGING AND DEBRIS FROM THE SITE DURING THE PROGRESS AND AT FINAL COMPLETION OF THE WORK.

EXECUTE WORK IN A FIRST-CLASS AND WORKMANLIKE MANNER.

COORDINATE WITH ALL TRADES AND ARRANGE EQUIPMENT IN PROPER RELATION WITH OTHER APPARATUS, DUCTS, PIPES, ETC. AND WITH BUILDING CONSTRUCTION AND ARCHITECTURAL FINISHES.

ALL RECEPTACLE COVER PLATES, SWITCH COVER AND EXHAUST FAN SWITCH COVERS TO BE c/w LAMACOD LABELS INDICATING PANEL NAME AND CIRCUIT NUMBERS

BUILDING ENVELOPE PENETRATION OF ANY ELECTRICAL COMPONENT (I.E. CONDUIT, BOXES, CABLES, ETC.) SHALL BE EXECUTED SO INTEGRITY OF ASSEMBLY IS NOT COMPROMISED. PROVIDE ADEQUATE SEALING, COVERS, GASKETS, CAPS, ETC. COORDINATE WORK AND REQUIREMENTS WITH ALL OTHER RELEVANT CONTRACTORS, ARCHITECT, ENVELOPE CONSULTANT AND OTHER RELEVANT CONSULTANTS AND CONTRACTORS.

DRAWINGS ARE DIAGRAMMATIC ONLY AND DO NOT SHOW ALL DETAILS. INFORMATION INVOLVING ACCURATE MEASUREMENTS OF THE BUILDING, STRUCTURAL STEEL, EXISTING WALLS, ETC. ARE TO BE TAKEN IN THE FIELD. THE CONTRACTOR SHALL MAKE, WITHOUT ADDITIONAL EXPENSE TO THE CITY NECESSARY CHANGES OR ADDITIONS TO RUNS TO ACCOMMODATE STRUCTURAL OR ARCHITECTURAL CONDITIONS.

LOCATION OF DEVICES MAY BE ALTERED WITHOUT CHARGE TO THE CITY, PROVIDED THE CHANGE IS MADE BEFORE FINAL INSTALLATION. IT DOES NOT NECESSITATE ADDITIONAL MATERIALS, AND ALL SUCH CHANGES ARE RATIFIED BY THE CITY'S REPRESENTATIVE. RECORD CHANGES ON RECORD SET OF DRAWINGS.

DRAWING SHOWS GENERAL LOCATION FOR EQUIPMENT AND CIRCUITS; INSTALL THEM IN SUCH A WAY AS TO CONSERVE HEADROOM AND INTERFERE AS LITTLE AS POSSIBLE WITH THE FREE USE OF SPACE THROUGH WHICH THEY PASS.

ALL PAINTING AND PATCHING SHALL BE DONE BY QUALIFIED LABOURERS.

ALL PENETRATIONS THROUGH FIRE SEPARATIONS SHALL BE RATED TO MATCH FIRE RATING.

1M SHALL BE KEPT CLEAR IN FRONT OF ALL ELECTRICAL PANELS AS PER CEC.

INSTALL ALL EQUIPMENT IN ACCORDANCE WITH MANUFACTURERS' INSTRUCTIONS, THE CANADIAN ELECTRICAL CODE AND ALL OTHER AUTHORITIES HAVING JURISDICTION. CONTRACTOR SHALL COORDINATE WITH OTHER TRADES TO ENSURE PROPER INSTALLATION.

CONTRACTOR SHALL KEEP AN ONGOING SET OF 'RECORD' DRAWINGS ON SITE FOR REVIEW BY THE CITY OR CONTRACT ADMINISTRATOR AT ANY TIME. DRAWINGS TO BE TURNED OVER UPON COMPLETION OF PROJECT.

CONDUITS SHALL NOT HAVE MORE THAN ONE VOLTAGE LEVEL OF WIRING RUNNING WITHIN THEM.

**SUBMITTALS**

SUBMIT PRODUCT DATA FOR ALL EQUIPMENT. ACCEPTABLE MATERIALS SHALL BE AS SPECIFIED, CODE APPROVED OR THE CITY APPROVED. ALL MATERIAL SHALL BE NEW, UNLESS SPECIFIED OTHERWISE.

LIGHTING FIXTURES LISTED ARE PREFERRED. CONTRACTOR MAY, HOWEVER, SUBMIT ALTERNATES ONE WEEK PRIOR TO CLOSING OF BID OPPORTUNITY TO CONTRACT ADMINISTRATOR FOR APPROVAL AS EQUIVALENT. SUBMISSION SHALL INCLUDE FOOT CANDLE (FC) DISTRIBUTION WITH STATED LIGHT LOSS FACTOR (LLF).

SHOP DRAWINGS FOR ELECTRICAL EQUIPMENT/MATERIALS SHALL BE SUBMITTED FOR REVIEW BY THE CONTRACT ADMINISTRATOR BEFORE MANUFACTURING AND INSTALLATION CAN PROCEED.

SUBMIT TO THE CONTRACT ADMINISTRATOR UPON COMPLETION OF THE CONTRACT, ONE MARKED UP SET OF RECORD DRAWINGS AND THREE SETS OF MAINTENANCE MANUALS FOR LIGHT FIXTURES, LAMPS, AND FIRE ALARM EQUIPMENT.

AFTER WORK IS COMPLETED, FURNISH TO THE CITY A WRITTEN GUARANTEE THAT FOR ONE YEAR FROM DATE OF ACCEPTANCE, ANY DEFECTS IN MATERIALS OR WORKMANSHIP WILL BE CORRECTED AT NO COST TO THE CITY. SUBMIT COPY OF GUARANTEE TO THE CONTRACT ADMINISTRATOR.

SUBMIT COPIES OF FIRE ALARM VERIFICATION AND TESTING REPORT TO THE CONTRACT ADMINISTRATOR PRIOR TO FINAL ACCEPTANCE. THESE SHALL BE PROVIDED THREE WORKING DAYS BEFORE CONTRACT ADMINISTRATOR'S FINAL OCCUPANCY REVIEW.

**COORDINATION**

THE CONTRACTOR IS RESPONSIBLE TO DETERMINE THE SCOPE OF WORK REQUIRED FOR EACH TRADE. WORK SHALL BE DONE BY THE APPROPRIATE SKILLED TRADE. ALL TRADES MUST COORDINATE WORK TO ENSURE THAT THE ENTIRE SCOPE OF THE PROJECT IS COVERED. THERE SHALL BE NO ALLOWANCES PROVIDED FOR ITEMS WHICH RESULT FROM A FAILURE TO COORDINATE. THE CONTRACTOR WILL REVIEW THE DRAWINGS WITH ALL TRADES PRIOR TO BID OPPORTUNITY SUBMISSION TO RESOLVE ALL COORDINATION ISSUES.

RESPONSIBILITY TO DETERMINE WHICH DIVISION OR SECTION PROVIDES VARIOUS PRODUCTS AND WORK, RESTS WITH THE CONTRACTOR. ADDITIONAL COMPENSATION WILL NOT BE CONSIDERED BECAUSE OF DIFFERENCES IN INTERPRETATION OF TECHNICAL PROVISIONS.

THE CONTRACTOR SHALL COORDINATE WITH THE THE CITY DURING ANY DEMOLITION AND CONSTRUCTION PHASES OF THE WORK FOR ALL TEMPORARY ELECTRICAL CONNECTIONS REQUIRED AND FOR THE REMOVAL OF EXISTING POWER SERVICES AND THE INSTALLATION OF NEW SERVICES. CONTRACTOR SHALL COMPLETE ALL PRELIMINARY WORK PRIOR TO ANY POWER OUTAGES.

CONTRACTOR SHALL COORDINATE, NOTIFY AND ARRANGE WITH THE THE CITY, CONTRACTOR AND CONSULTANT ALL STAGING REQUIREMENTS TO MINIMIZE ALL POWER DISRUPTIONS AND ANY POWER OUTAGES NECESSARY TO COMPLETE THE WORK AT NO ADDITIONAL COST.

**PRODUCT SPECIFICATIONS:**

**CONDUIT, WIRE AND CONNECTIONS**

DRAWINGS ARE SCHEMATIC ONLY. CONDUIT RUNS SHOWN INDICATE POINTS TO BE JOINED. RUNS MAY BE ALTERED BY THE CONTRACTOR TO SUIT ACTUAL FIELD CONDITIONS. ELECTRICAL DRAWINGS ONLY GIVE INDICATION OF OTHER TRADES EQUIPMENT.

WIRING DEVICES IN FINISHED AREAS SHALL BE RECESSED MOUNTED AND FOR ALL UNFINISHED AREAS MAY BE SURFACE MOUNTED.

A WARNING SIGN SHALL BE PLACED NEAR ALL MOTORS WITH THE FOLLOWING WORDING: "DO NOT SERVICE UNTIL DISCONNECTS ARE LOCKED OFF".

TEST SYSTEM AND RECORD SAME FOR THE CONTRACT ADMINISTRATOR'S APPROVAL:

- VOLTAGE DROP
- PHASE BALANCE
- INSULATION RESISTANCE
- GROUND RESISTANCE

ALL WIRE AND CABLE SHALL BE COPPER, 98% CONDUCTIVITY, COLOUR CODED, NEW AND MARKED AS PER CODE REQUIREMENTS AND INSTALLED IN RACEWAYS. WIRES SHALL BE RATED MINIMUM 600V TYPE TWH OR R90X-LINK.

ALL WIRING SHALL BE SIZED AS PER CODE MINIMUM ALLOWABLE WIRE SIZE IS #12 AWG. USE MINIMUM #14 AWG FOR LIGHT FIXTURE CONNECTIONS. CONDUCTORS #8 AWG AND LARGER TO BE STRANDED. ALL WIRES INSTALLED IN CONDUIT SHALL BE PULLED IN AT THE SAME TIME. ONLY APPROVED PULLING LUBRICANT SHALL BE USED. COLOUR CODE CONDUCTORS WITH DIFFERENT COLOURS FOR EACH PHASE, NEUTRAL, GROUND AND BOND WIRES AS REQUIRED BY CODE.

MAXIMUM VOLTAGE DROP SHALL BE AS PER CODE REQUIREMENTS.

ALL CONDUITS, CABLES AND WIRES, ETC., TO BE RATED EITHER FT1 FOR COMBUSTIBLE BUILDINGS, FT4 FOR NON COMBUSTIBLE BUILDINGS AND FT6 FOR PLENUM AND AS REQUIRED BY THE CODE.

ALL WIRE CONNECTIONS TO BE SECURELY FASTENED BY MEANS OF APPROVED CONNECTORS.

ALL NON-CURRENT CARRYING METAL PARTS SHALL BE GROUNDED AND/OR BONDED IN ACCORDANCE WITH THE CODE.

OPENINGS IN ALL ELECTRICAL METAL BOXES SHALL BE PUNCHED OR CUT. BURNING OF HOLES SHALL NOT BE PERMITTED.

INSTALL ALL CONDUITS, ETC. TO ACCOUNT FOR EXPANSION AND INSTALL APPROVED EXPANSION JOINTS WHERE REQUIRED.

RACEWAYS SHALL BE RIGID METAL CONDUITS, EMT OR FLEXIBLE CONDUIT AS SHOWN ON THE DRAWINGS, ALL CONDUIT INSTALLED IN CONCRETE FLOOR SHALL BE RIGID PVC OR RIGID GALVANIZED STEEL CONDUIT c/w BOND CONDUCTOR.

EMT COUPLINGS AND CONNECTORS TO BE T & B STEEL, TAPE ALL JOINTS FOR ALL IN-SLAB INSTALLATIONS. STEEL SHALL BE USED ABOVE GRADE.

ALL CONDUITS MUST BE SECURELY FASTENED WITH APPROVED CLIPS AND SCREWS IN PARTITIONS AND CADDY CLIPS IN CEILING. NAILS SHALL NOT BE ACCEPTED.

EXPOSED CONDUITS IN FINISHED AREAS SHALL NOT BE ACCEPTED UNLESS APPROVED BY THE CONTRACT ADMINISTRATOR. WHERE CONDUITS RUN EXPOSED ON EXISTING SURFACES PAINT TO MATCH WALL FINISH.

CONDUITS MOUNTED EXPOSED UP TO 5'-0" A.F.F. SHALL BE RIGID STEEL GALVANIZED STANDARD WEIGHT WITH GALVANIZED THREADED COUPLINGS.

PROVIDE OUTLET BOXES FOR CONNECTING TO DEVICES AND EQUIPMENT AS REQUIRED OR AS INDICATED ON DRAWINGS. LOCATIONS OF OUTLETS MAY BE CHANGED UP TO 15'-0" WITHOUT EXTRA CHARGE PROVIDED THAT INSTRUCTIONS FOR CHANGE ARE ISSUED BEFORE INSTALLATION OF THE OUTLET.

ALL CONDUIT, CONDUCTORS, WIRES, ETC. SHALL BE LABELLED IN INDELEIBLE INK AT PANEL AND JUNCTION BOXES INDICATING DEVICE FED, PANEL NAME AND CIRCUIT NUMBER.

PRIOR TO INSTALLATION OF ANY CONDUIT IN CONCRETE SLABS, ELECTRICAL CONTRACTOR SHALL COORDINATE LAYOUT AND REQUIREMENTS WITH CONTRACT ADMINISTRATOR.

**RECEPTACLES**

- SINGLE RECEPTACLES, DUPLEX RECEPTACLES, CSA TYPE 5-15 R, 125 V, 15 A, U GROUND
- SUITABLE FOR NO. 10 AWG FOR BACK AND SIDE WIRING.
- BREAK-OFF LINKS FOR USE AS SPLIT RECEPTACLES.
- EIGHT BACK WIRED ENTRANCES, FOUR SIDE WIRING SCREWS.
- TRIPLE WIPE CONTACTS AND RIVETED GROUNDING CONTACTS.
- HUBBELL 5252 OR EQUIVALENT - WHITE

SUPPLY AND INSTALL 15-20A RECEPTACLES WHERE INDICATED. ALL RECEPTACLES SHALL BE MINIMUM SPECIFICATION GRADE.

WHERE ROOF MOUNTED HVAC EQUIPMENT IS INSTALLED PROVIDE A DEDICATED CIRCUIT GFCI WEATHERPROOF RECEPTACLE WITHIN 10 FEET.

ALL COVERPLATES SHALL BE BRUSHED STAINLESS STEEL WITH LABELS FOR CIRCUITING.

**LUMINAIRES, LAMPS AND BALLAST**

LUMINAIRES SHALL BE AS DETAILED ON THE FIXTURE SCHEDULE AND INSTALLED AS INDICATED IN LOCATIONS SHOWN. INSTALL COMPLETE WITH LAMPS, BALLAST, DIFFUSERS, HANGERS, GASKETS, CANOPIES AND SUPPORTS FOR A COMPLETE AND FINISHED OPERATION. FINAL LAYOUT OF LUMINAIRES SHALL BE MADE AFTER DUCTING, PIPING, AND SHELVING LAYOUTS ARE FULLY COORDINATED WITH OTHER TRADES. ALL LUMINAIRES TO BE ADEQUATELY ATTACHED DIRECTLY TO THE BUILDING STRUCTURE.

UNLESS OTHERWISE INDICATED, BALLAST SHALL BE HIGH POWER FACTOR RAPID START SOUND RATING "A" SUITABLE FOR 120V OPERATION.

PROVIDE LAMPS FOR ALL FIXTURES. LAMPS SHALL BE PROVIDED AS INDICATED IN THE FIXTURE SCHEDULE.

ALL FIRE RESISTANCE RATED ASSEMBLIES (I.E. WALLS, CEILINGS, ETC.) WHICH CONTAIN RECESSED LIGHTING FIXTURES SHALL BE c/w FIRE RATED BACKING TO MAINTAIN THE INTEGRITY OF THE FIRE RESISTANCE. (THIS WORK SHALL BE PERFORMED OUTSIDE ELECTRICAL SCOPE OF WORK)

**FIRE ALARM SYSTEM**

FIRE ALARM SYSTEM SHALL BE A FULLY ADDRESSABLE SYSTEM. NON-ADDRESSABLE SYSTEMS SHALL NOT BE ACCEPTABLE.

SUPPLY AND INSTALL A COMPLETE AND OPERATIONAL FIRE ALARM SYSTEM WITH SUPERVISED FIRE DETECTION AND ALARM CIRCUITS AS SHOWN ON THE DRAWINGS AND/OR AS REQUIRED. THIS INCLUDES, BUT IS NOT LIMITED TO ROUGH-INS, WIRING, ACTIVE AND PASSIVE COMPONENTS, TESTING, VERIFICATION AND CERTIFICATES.

THE FIRE ALARM SYSTEM SHALL COMPLY WITH ULC STANDARD S524 AND THE APPLICABLE CODES. VERIFICATION SHALL COMPLY WITH ULC STANDARD S537.

PROVIDE A SUPERVISED, ZONED, NON-CODED ALARM PANEL c/w STANDBY POWER.

PROVIDE A FIRE ALARM ANNUNCIATOR PANEL TO MATCH MAIN FIRE ALARM PANEL. PANEL TO BE c/w TROUBLE LIGHT, BUZZER AND SILENCING SWITCH. EXTEND A 1/2" CO. c/w WIRING AS REQUIRED TO FIRE ALARM PANEL. ANNUNCIATOR TO BE RECESSED c/w CLEAR LEXAN COVER.

FIRE ALARM WIRING SHALL BE MINIMUM #18 TYPE RW90 FOR DETECTION CIRCUITS AND MINIMUM #14 RW90 FOR NOTIFICATION CIRCUITS. ALL WIRING SHALL BE FREE OF GROUNDS AND SHORTS. APPROVED FIRE ALARM CABLE CAN BE USED WITH FT RATING AS REQUIRED FOR PARTICULAR TYPE OF CONSTRUCTION.

ALL FIRE ALARM INTERLOCKS WITH OTHER EQUIPMENT (RECIRCULATING AIR EQUIPMENT, MAGNETIC DOOR HOLDERS, ELEVATOR, ETC.) AS SHOWN AND/OR REQUIRED SHALL BE TESTED AND CLEARLY INDICATED ON FIRE ALARM VERIFICATION REPORT. VERIFY ALL REQUIRED INTERLOCKS AND SEQUENCE OF OPERATION WITH CONTRACT ADMINISTRATOR BEFORE FINAL PROGRAMMING.

CONTRACTOR SHALL ALLOW FOR CONNECTION OF THE PRESSURIZATION FANS TO THE FIRE ALARM AND ANNUNCIATOR PANELS. THE CONNECTION SHALL PROVIDE HAND/OFF/AUTO WITH STATUS INDICATING LIGHTS AS PER BUILDING CODE REQUIREMENTS. CONFIRM SEQUENCE OF OPERATION WITH MECHANICAL PRIOR TO ROUGH IN.

CONTRACTOR TO ARRANGE FOR AND COORDINATE TO ENSURE THAT THE FIRE ALARM SYSTEM IS CORRECTLY MONITORED VIA AN N.F.P.A. APPROVED METHOD TO A CENTRAL DEDICATED ULC-LISTED MONITORING FACILITY.

- CONTRACTOR SHALL SUPPLY AND INSTALL ALL NECESSARY DEVICES TO ALLOW FOR CORRECT MONITORING OF:
- FIRE ALARM
  - FIRE ALARM SYSTEM TROUBLE, AND
  - SUPERVISORY

DEVICES SHALL INCLUDE BUT NOT BE LIMITED TO A FIRE ALARM PANEL INCLUDING ALL NECESSARY ADDITIONAL MODULES, AUTO DIALER, ULC-LISTED TRANSDUCER AND RECEPTACLE ON A SEPARATE CIRCUIT. SILENT KNIGHT MODEL #5104 FIRE CONTROL COMMUNICATOR OR APPROVED ULC-LISTED SHALL BE USED. CONTRACTOR SHALL ARRANGE WITH THE TELEPHONE UTILITY FOR A ONE YEAR LEASED TELEPHONE LINE AND CONNECTIONS TO AUTODIALER AS REQUIRED. ALL COSTS TO BE INCLUDED IN BASE BID OPPORTUNITY QUOTE.

CONTRACTOR TO ENSURE AUTODIALER IS TESTED AND INSPECTED DURING THE FIRE ALARM VERIFICATION AND IS REPORTED ON THE WORKSHEETS.

THE CONTRACTOR SHALL COORDINATE TO ENSURE THE MONITORING COMPANY SUBMITS TO THE CONTRACT ADMINISTRATOR A LETTER CONFIRMING THE FOLLOWING:

- MONITORING OF FIRE ALARM AND FIRE ALARM SYSTEM TROUBLE SIGNALS.
- USE OF ULC-LISTED FIRE TRANSDUCERS, ETC.
- USE AND TYPE OF DEDICATED TELEPHONE LINES.

FIRE ALARM VERIFICATION REPORT AND CERTIFICATE OF VERIFICATION SHALL BE SUBMITTED TO THE ELECTRICAL CONSULTANT FOR REVIEW AND APPROVAL.

VERIFICATION REPORT SHALL INCLUDE CLEARLY IDENTIFIED SENSITIVITY REPORT (CANULC S537-M97-4.1.2)

THE FOLLOWING HAS TO BE MET IN ORDER FOR THE FIRE ALARM SYSTEM TO BE CONSIDERED FOR ACCEPTANCE:

- FIRE ALARM PANEL AND NEW DEVICES ARE INSTALLED AS PER ALL APPLICABLE CODES.
- FIRE ALARM PANEL AND NEW DEVICES ARE INSTALLED AS PER THESE DRAWINGS AND SPECIFICATIONS
- FIRE ALARM PANEL AND NEW DEVICES ARE INSTALLED AS PER MANUFACTURER SPECIFICATIONS
- FIRE ALARM VERIFICATION REPORT AND CERTIFICATION IS ACCEPTED AND APPROVED BY AUTHORITY HAVING JURISDICTION AND THE ELECTRICAL CONSULTANT.
- VERIFICATION REPORT SHALL BE COMPLETE AND CERTIFICATE ISSUED ONLY WHEN FIRE ALARM SYSTEM HAS NO DEFICIENCIES.
- CONFIRMATION OF THE REQUIRED MONITORING SHALL BE PART OF VERIFICATION REPORT.
- CONFIRMATION OF FIRE ALARM REMOTE MONITORING AND PERFORMANCE SUBMITTED BY REMOTE MONITORING COMPANY.
- REMOTE MONITORING SIGNALS PRINTOUT SUBMITTED BY REMOTE MONITORING COMPANY.

AS KGS GROUP IS REQUIRED TO GIVE PROFESSIONAL ASSURANCE THAT ALL ELECTRICAL SYSTEMS HAVE BEEN INSTALLED, TESTED AND VERIFIED IN ACCORDANCE WITH THE MANITOBA BUILDING CODE AND THE CANADIAN ELECTRICAL CODE, KGS REQUIRES THE FOLLOWING ITEMS FROM THE CONTRACTOR PRIOR TO ISSUANCE OF "LETTER OF PROFESSIONAL ASSURANCE" FOR BUILDING OCCUPANCY:

1. VERIFICATION CERTIFICATE AND REPORT SHEETS SHOWING FIRE ALARM WAS "INSPECTED" AND "TESTED" IN ACCORDANCE WITH CANULC-S537M "STANDARD FOR VERIFICATION OF FIRE ALARM INSTALLATIONS". THIS SHALL INCLUDE THE MONITORING OF FIRE ALARM, FIRE ALARM SYSTEM TROUBLE, AND SPRINKLER SUPERVISORY SIGNALS.
2. PROOF FROM MONITORING COMPANY THAT CORRECT CODES WERE RECEIVED FOR FIRE ALARM, FIRE ALARM SYSTEM TROUBLE AND SPRINKLER SUPERVISORY SIGNALS.
3. VERIFICATION CERTIFICATE OF INSTALLATION AND OPERATION OF EXIT AND EMERGENCY LIGHTING.
4. FINAL ELECTRICAL INSPECTION CERTIFICATE SIGNED BY THE ELECTRICAL INSPECTOR FOR THE PROJECT. A DECLARATION FORM SIGNED BY THE ELECTRICAL CONTRACTOR IS NOT ACCEPTABLE.

**NOTES:**

1. ALL INTERCONNECTIONS TO HOME AND ALTERNATE HOME ELEVATOR TO BE PROVIDED. ALLOW FOR ALL REQUIRED OUTPUTS, A MINIMUM OF SIX.
2. FIRE ALARM PANEL TO REPLACE EXISTING MIRROR PANEL. PROVIDE COMPATIBLE PANEL PROPERLY CROSS-LISTED WITH ALL EXISTING DEVICES.

**FIRE STOPPING**

ALL ELECTRICAL WIRES, CABLES, NONCOMBUSTIBLE RACEWAYS, OUTLET BOXES AND OTHER SIMILAR SERVICES THAT PENETRATE FIRE WALL, FIRE SEPARATION OR ASSEMBLY REQUIRED TO HAVE A FIRE RESISTANCE RATING OR FIRE SEPARATION, SHALL BE SEALED BY FIRE STOP SYSTEM WHICH HAS AN "F" AND/OR "FT" RATING NOT LESS THAN REQUIRED FIRE PROTECTION RATING OF FIRE SEPARATION.

CONTRACTOR SHALL ONLY USE LISTED MATERIALS AND METHODS.

SERVICE PENETRATION AND FIRE STOPPING OF SERVICE PENETRATION IN FIRE SEPARATION AND FIRE RATED ASSEMBLIES SHALL COMPLY WITH THE CURRENT BUILDING CODE.

PROVIDE FOR FIRE STOPS IN CONCEALED SPACES AS REQUIRED BY THE CURRENT BUILDING CODE.

ALL FIRE RESISTANCE RATED ASSEMBLIES (I.E. WALLS CEILINGS, ETC.) WHICH CONTAIN PANEL BOARDS, BACK BOXES, RECESSED LIGHTING FIXTURES, ETC. SHALL BE c/w FIRE RATED BACKING TO MAINTAIN THE INTEGRITY OF THE FIRE RESISTANCE.

**EMERGENCY LIGHTING**

SUPPLY AND INSTALL EMERGENCY BATTERY UNITS AND EMERGENCY LIGHTING FIXTURES AS INDICATED ON THE DRAWINGS AND/OR AS SPECIFIED HEREIN.

UNLESS OTHERWISE NOTED ON THE DRAWINGS, ALL BATTERY UNITS SHALL HAVE THE FOLLOWING FEATURES:

- SEALED 10 YEARS LIFE LEAD BATTERIES
- COMPLETE MAINTENANCE-FREE BATTERIES
- VOLTAGE SENSITIVE DEMAND CHARGER
- SEALED DUST-TIGHT TRANSFER RELAY
- LOW VOLTAGE BATTERY DISCONNECT
- DUAL DIAGNOSTIC INDICATOR LIGHTS
- TEST SWITCH
- TEMPERATURE COMPENSATED
- CURRENT REGULATED
- FUSE PROTECTED OUTPUT CIRCUITS
- VOLTAGE REGULATED
- FULLY AUTOMATIC
- SOLID STATE
- 12V OR 24V DC SECONDARY OPERATION
- LUMINAIRE VOLTAGE TO SUITE PRIMARY OPERATION VOLTAGE

UNLESS OTHERWISE NOTED ON THE DRAWINGS, ALL EMERGENCY LIGHT HEADS SHALL BE 12V MINIMUM 5W AND OF LED CONSTRUCTION.

UNLESS OTHERWISE NOTED THE TOTAL LOAD (LIGHTING HEADS CONNECTED) CONNECTED TO THE BATTERY SHALL OPERATE FOR TIME AS REQUIRED BY ARTICLE 3.2.7.4 OF BUILDING CODE WITH A MINIMUM OF 87.5% OF THE RATED BATTERY VOLTAGE OUTPUT.

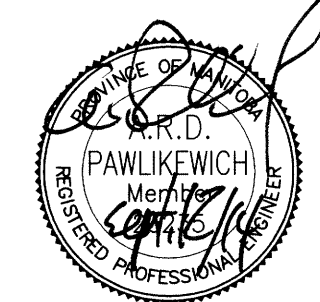
UNLESS OTHERWISE NOTED, ALL EMERGENCY LIGHTING HEADS SHALL BE LOCATED ON CEILING AT WALL AND SHALL BE COORDINATED WITH WALL AND CEILING DETAILS AND FINISHES. CONTRACTOR SHALL SUPPLY AND INSTALL ALL WIRING FROM BATTERY PACK TO REMOTE HEADS AS REQUIRED. ENSURE WIRE SIZE IS ADEQUATE FOR VOLTAGE DROP (MAXIMUM 5%).

ALL EXIT SIGN LIGHTS MUST BE CONNECTED TO BOTH NORMAL POWER SOURCE AND APPROVED EMERGENCY POWER SOURCE.

EMERGENCY BATTERY UNITS MUST BE CONNECTED TO THE SAME CIRCUIT AS NORMAL LIGHTING TO THE AREA THEY SERVE AS PER CEC SECTION 46.

0	ISSUED FOR CONSTRUCTION	AP	AUG 15 2014
No.	REVISION/DESCRIPTION	BY	DATE

SEAL



DRAWN	JAW	CHECKED	DESIGNED	APPROVED
DATE	2014.07.16	USER	APPROVAL	

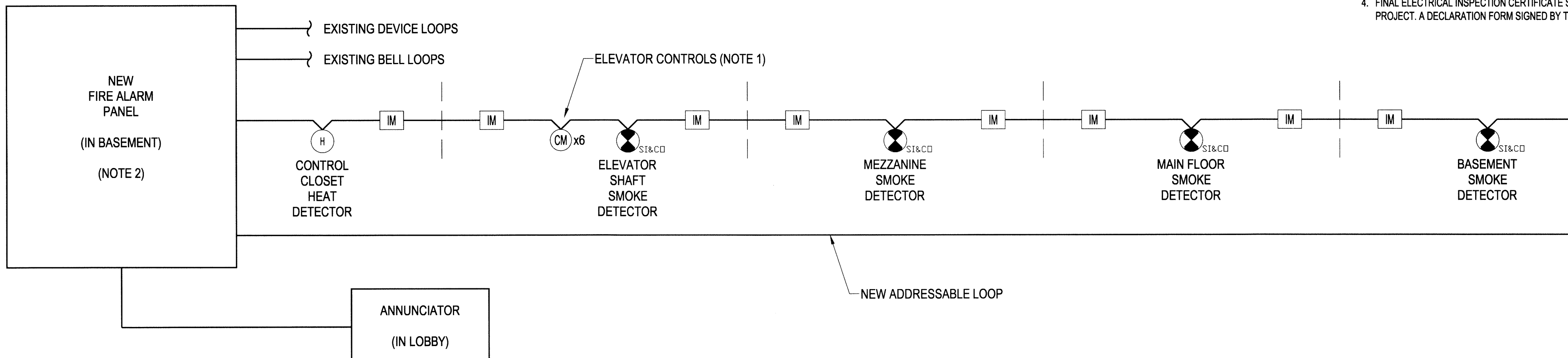
Winnipeg THE CITY OF WINNIPEG PLANNING, PROPERTY AND DEVELOPMENT DEPARTMENT MUNICIPAL ACCOMMODATIONS DIVISION 3-65 GARRY STREET, R3C 4K4

PROJECT ST. VITAL LIBRARY NEW ELEVATOR INSTALLATION

**KGS GROUP CONSULTING ENGINEERS**  
Certificate of Authorization  
KGS GROUP No. 245

SHEET TITLE  
**ELECTRICAL SPECIFICATIONS AND FIRE ALARM RISER DIAGRAM**

SCALE AS SHOWN PROJECT No: 2013-154 SHEET No: E2



1 ELECTRICAL FIRE ALARM UPDATES  
E2 E2 SCALE 1/8"=1'-0"