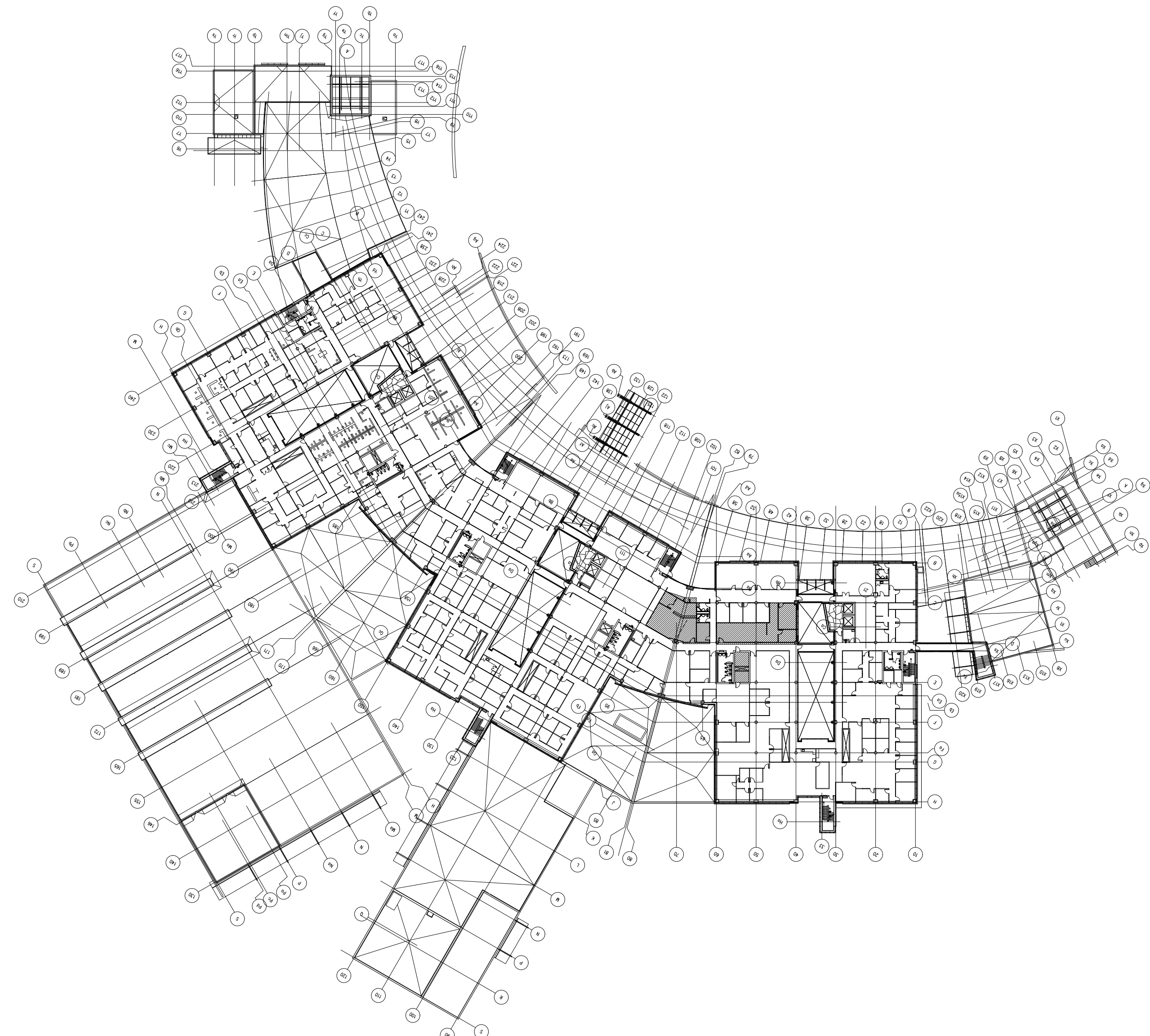


OPP HEADQUARTER COMMANDER OFFICE RENOVATION

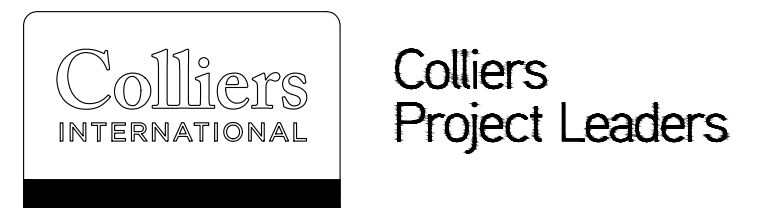
PROJECT No. 1103395-274117
777 MEMORIAL AVENUE
ORILLIA, ONTARIO



 **KEY PLAN
AREA IN CONTRACT**

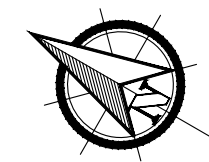
CONTENT	RE-ISSUED FOR	DATE	FILE No.
ELECTRICAL DRAWINGS	TENDER/PERMIT	AUGUST 22, 2024	AE-23301-DRAW-E001-E004-R01

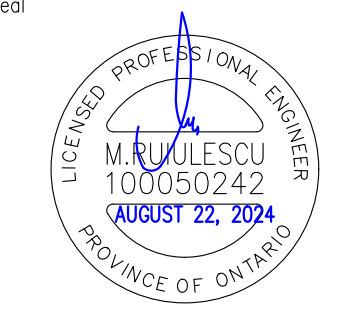
DRAWING LIST			
DRAWING #:	DESCRIPTION	DRAWING SCALE:	PLOTTING SCALE:
AE-23301-DRAW-E001-R01	KEY PLAN, DRAWING LIST	N.T.S.	1'-0"=1'-0"
AE-23301-DRAW-E002-R01	ELECTRICAL & DATA SPECIFICATION	N.T.S.	1'-0"=1'-0"
AE-23301-DRAW-E003-R01	PROPOSED LIGHTING LAYOUT, LEGEND, NOTES	1/8"=1'-0"	1'-0"=1'-0"
AE-23301-DRAW-E004-R01	PROPOSED POWER & DATA LAYOUT, LEGEND, NOTES	1/8"=1'-0"	1'-0"=1'-0"



GENERAL NOTES:
CONTRACTORS SHALL VERIFY AND BE RESPONSIBLE FOR ALL DIMENSIONS AND CONDITIONS ON THE JOB AND THE ENGINEER SHALL BE INFORMED OF ANY VARIATIONS FROM THE DIMENSIONS AND CONDITIONS SHOWN ON THE DRAWINGS. DO NOT SCALE DRAWINGS. SHOP DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL BEFORE PROCEEDING WITH FABRICATION. THIS DRAWING IS THE PROPERTY OF ALGAL ENGINEERING LTD AND SHALL NOT BE REPRODUCED WITHOUT THEIR PERMISSION AND UNLESS THE REPRODUCTION CARRIES THEIR NAME, ALL INFORMATION SHOWN ON THIS DRAWING IS FOR USE ON THE SPECIFIED PROJECT ONLY AND SHALL NOT BE USED OTHERWISE WITHOUT WRITTEN PERMISSION OF ALGAL ENGINEERING LTD

No	Revisions	Date
R01	RE-ISSUED FOR TENDER/PERMIT	2024-08-22
R00	ISSUED FOR TENDER	2024-07-31
RP4	ISSUED FOR 99% CLIENT REVIEW	2024-06-25
RP3	ISSUED FOR 66% CLIENT REVIEW	2024-05-15
RP2	ISSUED FOR 33% CLIENT REVIEW	2024-04-18

Orientation 

Seal 

The Contractor shall check and verify all dimensions and report all errors and omissions to the IO-Owner's/MBS' Designee (as applicable) for his/her written direction before proceeding with the Work.

A	A Detail No
B	B Sheet No where detailed

Architectural



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Infrastructure Ontario

Ministry PSF Number

Project
**OPP HEADQUARTER
COMMANDER OFFICE
RENOVATION**

Location
**777 MEMORIAL AVENUE
ORILLIA, ONTARIO**

ID Project No. 1103395-274117 Site No. N06689 Building No. B25370

Client
COLLIER PROJECT LEADERS

Drawing Title
KEY PLAN, DRAWING LIST

Scale N.T.S.	Date 2024-04-03
Drawn by B.W.	Substantial Performance Date TBD
Designed by A.E.	Drawing No. AE-23301-DRAW-E001-R01
Approved by Floor No. M.R. 3	of 4

CADD File Name: **AE-23301-DRAW-E001-E004-R01**

ELECTRICAL SPECIFICATION

GENERAL SPECIFICATION

REFERENCE STANDARDS

1. COMPLETE THE INSTALLATION OF THE WORK IN ACCORDANCE WITH LATEST EDITIONS OF THE ONTARIO BUILDING CODE, ONTARIO ELECTRICAL SAFETY CODE, C.S.A. STANDARDS, U.L.C., N.F.P.A., AND OTHER CODES, AS REQUIRED. ALL ELECTRICAL WORK SHALL BE PERFORMED IN COMPLIANCE WITH BASE BUILDING STANDARDS AND CLIENT'S REQUIREMENTS.

WORK COVERED UNDER THIS CONTRACT

1. WORK OF THIS CONTRACT INCLUDES FURNISHING LABOUR, MATERIALS, EQUIPMENT, SERVICES, AND OTHER RELATED EXPENSES TO EXECUTE COMPLETE CONSTRUCTION OF FACILITY SPECIFIED BY THE CONTRACT DOCUMENTS. PROVIDE ALL PRODUCTS AND METHODS SPECIFIED OR SHOWN IN THE CONTRACT DOCUMENTS COMPLETE WITH INCIDENTALS NECESSARY FOR A COMPLETE OPERATING INSTALLATION.

DEFINITIONS

1. SUPPLY: MEANS TO ACQUIRE OR PURCHASE, SHIP OR TRANSPORT TO THE SITE, UNLOAD, REMOVE PACKAGING TO PERMIT INSPECTION FOR DAMAGE, RE-PACKAGE, REPLACE DAMAGED ITEMS, AND SAFELY STORE ON-SITE.

2. INSTALL: MEANS TO REMOVE FROM SITE STORAGE, MOVE OR TRANSPORT TO INTENDED LOCATION, INSTALL IN POSITION, CONDUCT TO UTILITIES, REPAIR SITE DAMAGED OR REPLACE, AND MAKE READY FOR USE.

3. PROVIDE: MEANS TO SUPPLY AND INSTALL.

PERMITS AND FEES

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL PERMITS, LICENSES, INSPECTIONS AND RELATED FEES. SUBMIT TO THE LOCAL ELECTRICAL SAFETY AUTHORITY, THE NECESSARY NUMBER OF DOCUMENTS FOR EXAMINATION, SPECIAL INSPECTION AND APPROVAL, PRIOR TO THE COMMENCEMENT OF THE WORK, AND PAY ALL COSTS AND ASSOCIATED FEES.

PRODUCTS

1. PROVIDE ONLY NEW PRODUCTS. WHERE MANUFACTURER IS NOT SPECIFIED PROVIDE PRODUCTS OF HIGH COMMERCIAL STANDARD AND QUALITY CONSISTENT WITH THE STANDARDS OF THESE SPECIFICATIONS.

2. ALL PRODUCTS MUST BEAR THE APPROVAL OF THE CSA CML OR HAVE SPECIAL APPROVAL OF THE INSPECTION AUTHORITY HAVING JURISDICTION FOR THEIR RESPECTIVE FUNCTIONS AND ENVIRONMENTS. APPROVAL FROM THE LOCAL ELECTRICAL SAFETY AUTHORITY TO BE OBTAINED BY THE CONTRACTOR WHERE THERE IS NO ALTERNATIVE TO SUPPLYING EQUIPMENT WHICH IS NOT C.S.A. CERTIFIED.

3. PROVIDE PRODUCTS OF SAME MANUFACTURE FOR LIKE APPLICATIONS UNLESS NOTED OTHERWISE.

4. PRODUCTS SHALL BE DESIGNED AND MANUFACTURED TO APPLICABLE EMCAE AND NEMA SPECIFICATIONS.

CONTRACT DOCUMENTS

1. DRAWINGS, SPECIFICATIONS, AND SCHEDULES ARE COMPLEMENTARY EACH TO THE OTHER AND WHAT IS CALLED FOR BY ONE TO BE BINDING AS IF CALLED FOR BY ALL. REPORT ANY DISCREPANCIES BETWEEN DRAWINGS AND/OR SPECIFICATIONS AND EXISTING CONDITIONS OR DESIGNER'S DRAWINGS PRIOR TO INSTALLATION.

2. THE DRAWINGS FOR THE ELECTRICAL WORK ARE DIAGRAMMATIC PERFORMANCE DRAWINGS ONLY, INTENDED TO CONVEY THE SCOPE OF WORK AND INDICATE THE GENERAL ARRANGEMENT AND APPROXIMATE LOCATION OF ELECTRICAL EQUIPMENT. DRAWINGS DO NOT INTEND TO SHOW ARCHITECTURAL, INTERIOR DESIGN, MECHANICAL, STRUCTURAL OR BASE BUILDING DETAILS. BE RESPONSIBLE FOR A THOROUGH KNOWLEDGE OF SAME BEFORE PROCEEDING WITH THE WORK. DO NOT SCALE OR MEASURE DRAWINGS. OBTAIN INFORMATION REGARDING ACCURATE DIMENSIONS FROM DESIGNER/ARCHITECT'S DRAWINGS AND SITE MEASUREMENTS.

3. COOPERATE AND COORDINATE WITH OTHER TRADES IN LAYING OUT OF WORK SO AS NOT TO CONFLICT WITH THE WORK OF OTHER TRADES. CARRY OUT WORK PROMPTLY AS PER CONSTRUCTION SCHEDULE AND COORDINATE WITH WORK OF OTHER TRADES. MAKE, AT NO ADDITIONAL COST, ANY CHANGES OR ADDITIONS TO MATERIALS AND EQUIPMENT NECESSARY TO ACCOMMODATE STRUCTURAL CONDITIONS (OFFSETS AROUND BEAMS, COLUMN, ETC.)

4. VISIT THE SITE PRIOR TO TENDER AND VERIFY ALL CONDITIONS AND DIMENSIONS. ALLOW FOR ANY REWORKING OF EXISTING SERVICES AND EQUIPMENT IN THE TENDER PRICE. FAILURE TO DO SO DOES NOT RELIEVE THE CONTRACTOR FROM RESPONSIBILITY.

5. MAKE CHANGES WHERE REQUIRED TO ACCOMMODATE STRUCTURAL CONDITIONS, (BEAMS, COLUMNS CAPS, ETC.) OBTAIN CONSULTANTS' APPROVAL BEFORE PROCEEDING.

SHOP DRAWINGS

1. SUBMIT ELECTRONIC SHOP DRAWINGS STAMPED BY ELECTRICAL AND GENERAL CONTRACTOR OF ALL SPECIFIED EQUIPMENT FOR REVIEW AND RECORDS TO THE ENGINEER FOR REVIEW BEFORE COMMENCEMENT OF WORK. ALLOW 5 DAYS FOR CONSULTANT'S REVIEW OF EACH SUBMISSION.

IDENTIFICATION

1. IDENTIFY ELECTRICAL EQUIPMENT WITH NAMEPLATES AND LABELS MECHANICALLY ATTACHED TO EQUIPMENT (ALL PANELS, DISCONNECT SWITCHES, SPLITTERS, TERMINAL CABINETS ETC.) TO MATCH BASE BUILDING NAMEPLATES SHALL IDENTIFY EQUIPMENT NAME, VOLTAGE, PHASE, CURRENT RATING, UPSTREAM CONNECTION AND USE.

2. PROVIDE TYPEWRITTEN DIRECTORIES FOR NEW AND EXISTING PANELS. CONFIRM EXISTING IDENTIFICATION AND CORRECT WHERE NECESSARY. IDENTIFY WIRING WITH PERMANENT INDELEIBLE IDENTIFYING MARKINGS, ON BOTH ENDS OF PHASE CONDUCTORS OF FEEDERS AND BRANCH CIRCUIT WIRING.

3. COLOUR CODE CONDUITS, BOXES AND METALLIC SHEATHED CABLES.

LOCATION OF OUTLETS/EQUIPMENT

1. COORDINATE WITH THE DESIGNER/ARCHITECT'S DRAWINGS FOR EXACT LOCATIONS OF ALL OUTLETS.

2. DO NOT INSTALL OUTLETS BACK-TO-BACK IN WALL. ALLOW MINIMUM 150mm HORIZONTAL CLEARANCE BETWEEN BOXES. LOCATION OF OUTLETS SHALL BE GENERALLY SUBJECT TO CHANGE WITHOUT EXTRA COST TO OWNER PROVIDED INFORMATION IS GIVEN PRIOR TO INSTALLATION. NO EXTRA AMOUNT WILL BE PAID FOR OUTLETS RELOCATED REQUIRING EXTRA LABOUR AND MATERIAL UP TO 3000mm (10'-0") FROM ORIGINAL LOCATION. NOR WILL A CREDIT BE EXPECTED WHERE RELOCATION UP TO 3000mm (10'-0") REDUCES MATERIALS AND LABOUR.

3. LIGHTING PANELS, SPLITTER TROUGH, PULL BOXES, AND OTHER BOXES AND CABINETS INDICATED TO BE INSTALLED IN AREAS WITH FINISHED WALLS SHALL BE FLUSH MOUNTED AND FITTED WITH SUITABLE FLUSH TRIM AND DOORS. PANELS, BOXES, SPLITTER TROUGH AND CABINETS INSTALLED IN PIPE SPACES OR OTHER AREAS WHERE AN EXPOSED TYPE OF WIRING IS SPECIFIED SHALL BE SURFACE MOUNTED.

MOUNTING HEIGHTS

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

INSTALL ELECTRICAL EQUIPMENT AT FOLLOWING HEIGHTS UNLESS INDICATED OTHERWISE:

1. LOCAL SWITCHES, CARD READER & AUTOMATIC DOOR OPERATOR PUSH PLATES: 1100mm A.F.F.
2. WALL RECEPTACLES: GENERAL: 300mm A.F.F.
3. PANELBOARDS: AS REQUIRED BY CODE OR AS INDICATED.
4. PHONE/DATA OUTLETS: 300mm A.F.F.
5. FIRE ALARM DEVICES: AS REQUIRED BY CAN/ULC -5524 OR AS INDICATED ON DRAWINGS.
6. ALL MANUAL CONTROLS MUST BE LOCATED BETWEEN 900mm MIN. AND 1100mm MAX. ABOVE THE FLOOR WITH A CLEAR FLOOR SPACE OF AT LEAST 750mmx200mm.

7. PUSH BUTTONS FOR AUTOMATIC DOORS SHALL HAVE MINIMUM DIMENSIONS OF 100MM AND SHALL BE LOCATED SUCH THAT THE OPENING DOOR DOES NOT BLOCK THEM.

INTERRUPTION OF SERVICES

1. CO-ORDINATE ALL WORK WITH THE OWNER'S USE OF THE BUILDING.

2. MAINTAIN ALL ELECTRICAL SERVICES TO ALL PARTS OF THE BUILDING WHICH ARE IN USE. PROVIDE TEMPORARY SERVICES AND WIRING AS NECESSARY.

3. OBTAIN OWNER'S WRITTEN APPROVAL BEFORE INTERRUPTING ANY SERVICE.

4. REQUEST PERMISSION TO INTERRUPT SERVICES IN WRITING NOT LESS THAN TWO (2) WEEKS IN ADVANCE AND STATE TIME(S) AND DURATION(S) OF INTERRUPTIONS.

SITE CONCERNS

1. CONTRACTOR ACCESS TO THE SERVICE/UTILITY ROOMS.

2. CONTRACTOR TO MAINTAIN ROUTE USAGE FOR PEDESTRIAN DURING CONSTRUCTION.

3. CONTRACTOR TO PROTECT LIFE AND SAFETY SYSTEM AND OTHER BUILDING SYSTEMS AT ALL TIMES. IN CASE OF ANY DAMAGE AND / OR BYPASS SYSTEM, CONTRACTOR TO CONTACT PM AND ENSURE ALTERNATIVE MEASURES ARE IN PLACE AS PER THE SITES FIRE SAFETY PLAN.

4. CONTRACTOR TO REVIEW THE DESIGNATED SUBSTANCES SURVEY AND SOIL SAMPLING REPORT INCLUDING ALL REQUIREMENTS FOR ABATEMENT AND DISPOSAL.

ALTERNATES AND SUBSTITUTIONS DURING PROGRESS OF WORK

1. SUBSTITUTE PRODUCTS WILL ONLY BE CONSIDERED WHEN TENDERED PRODUCTS BECOME UNOBTAINABLE. WRITTEN PROOF IS REQUIRED.

2. PROVIDE DETAILED SPECIFICATIONS AND SHOP DRAWINGS WITH COMPLETE PERFORMANCE CHARACTERISTICS OF THE PROPOSED ALTERNATE TO THE CONSULTANT. SUBMIT PROOF THAT SUBSTITUTE PRODUCT IS EQUAL TO THAT SPECIFIED.

3. ASSUME RESPONSIBILITY AND PAY FOR ANY ADDITIONAL INSTALLATION COST INCURRED BY ALL DIVISIONS RESULTING FROM THE SUBSTITUTION. MAKE REVISIONS TO RECORD DRAWINGS INCORPORATING ALL SUBSTITUTIONS AND CHANGES.

4. SUBMIT THE PRICE VARIATION FROM THE TOTAL CONTRACT PRICE FOR EACH SUBSTITUTED PRODUCT.

VALUATION OF CHANGES

1. CONTRACT CHANGES MUST BE IMPLEMENTED THROUGH A WRITTEN NOTICE FROM CONTRACTOR TO CONSULTANT IDENTIFYING CHANGES TO BOTH CONTRACT VALUE AND TIME. FOR EACH CHANGE SUBMIT A COMPLETE ITEMIZED BREAKDOWN OF LABOR AND MATERIAL. CONTRACT CHANGES MUST OBTAIN WRITTEN APPROVAL FROM CONSULTANT PRIOR TO WORK COMMENCING. FOLLOWING WRITTEN APPROVAL, A FORMAL CHANGE ORDER WILL BE ISSUED BY PM.

2. ONLY THE NET DIFFERENCE BETWEEN AN EXTRA AND A CREDIT WILL BE SUBJECT TO OVERHEAD AND PROFIT MARK-UP.

3. MATERIAL TO BE VALUED AT CURRENT TRADE PRICES. THE LABOR HOURS SHALL BE BASED ON THE LATEST ISSUE OF THE NATIONAL ELECTRICAL CONTRACTORS ASSOCIATION (NECA) LABOUR UNITS. THE MATERIAL PRICES SHALL BE BASED ON THE CURRENT NATIONAL PRICES SYSTEM (NPS) CATALOGUE LESS APPLICABLE TRADE DISCOUNTS.

COMPLETION OF CONTRACT

1. ALL EQUIPMENT MUST BE INSTALLED AS PER MANUFACTURER RECOMMENDATION, CLEANED AND TESTED BEFORE FINAL ACCEPTANCE BY CONSULTANT.

2. THE CONTRACTOR MUST CORRECT ALL DEFICIENCIES AS SPECIFIED ON THE DEFICIENCY LIST ISSUED BY THE CONSULTANT/CLIENT.

3. WHERE APPLICABLE, AFTER COMPLETION OF WORK CONTRACTOR TO PROVIDE COPIES OF: ESA INSPECTION CERTIFICATE; FIRE ALARM VERIFICATION CERTIFICATE (AS PER STANDARD ULC 537); EMERGENCY LIGHTING LEVEL TEST RESULTS (REGARDING OF THE EMERGENCY LIGHTING LEVEL COMPLYING WITH THE ONTARIO BUILDING CODE); BATTERY UNIT SYSTEM TEST RESULTS.

4. PROVIDE A WRITTEN WARRANTY FOR ONE YEAR COVERING ALL EQUIPMENT, MATERIALS AND WORKMANSHIP FROM THE DATE OF ACCEPTANCE OF THE INSTALLATION BY THE OWNER. INCLUDE IN THE OPERATIONS AND MAINTENANCE MANUAL. ANY DEFECTS OR DEFICIENCIES WHICH ORIGINATE OR BECOME EVENT DURING THE WARRANTY PERIOD MUST BE REPAIRED OR CORRECTED AT NO EXTRA COST TO THE OWNER. ALL WORK RELATING TO THE REPLACEMENT OF DEFECTIVE ITEMS, MUST BE CARRIED OUT AFTER NORMAL WORKING HOURS AND AT THE OWNER'S RESIDUAL COST TO THE TENANT.

AS-BUILT DRAWINGS

1. AT THE COMPLETION OF WORK AND BEFORE FINAL ACCEPTANCE, PROVIDE AS-BUILT DRAWINGS OF THE INSTALLATION. ELECTRONIC FILES OR HARD COPIES RED LINE FORMAT. INDICATE THE WORDS "AS-BUILT" IN THE TITLE BLOCK COLUMN OF THE DRAWINGS AS WELL AS THE ELECTRICAL CONTRACTOR'S NAME AND ADDRESS. PREPARE RECORD DRAWINGS SHOWING THE FOLLOWING:

1. INVERTS OF ALL SERVICES ENTERING AND LEAVING THE BUILDING AND AT PROPERTY LINES.
2. DIMENSIONS OF UNDERGROUND SERVICES IN RELATION TO BUILDING LINES AT KEY POINTS OF EVERY RUN.
3. ELEVATIONS OF UNDERGROUND SERVICES IN RELATION TO GROUND FLOOR LEVEL OF THE BUILDING.
4. DIMENSIONED LOCATION OF ALL SERVICES EMBEDDED IN THE STRUCTURE.
5. DIMENSIONED LOCATION OF ALL SERVICES LEFT FOR FUTURE WORK.
6. ALL CHANGES TO THE WORK DUE TO CHANGE ORDERS.
7. ALL ADDENDUM CHANGES.
8. ALL CHANGES TO THE WORK DURING CONSTRUCTION.
9. MAIN BRANCH CONDUIT RUNS, JUNCTION BOX LOCATIONS, CONDUIT RUNS FOR ALL FLOOR OUTLETS, ETC., MUST BE REFLECTED ON THE DRAWINGS.
10. LOCATION AND DESIGNATION OF ALL ITEMS REQUIRING ACCESS OR SERVICE IN A HIDDEN LOCATION. SUBMIT A COPY/PRINT TO CONSULTANT FOR REVIEW. WHEN FOUND ACCEPTABLE, THE CONSULTANT PREPARE THE AUTOCAD -AS BUILTS AS PER IO STANDARDS AND SUBMIT TO THE CLIENT.

OPERATION AND MAINTENANCE MANUALS

1. ASSEMBLE THREE (3) MANUALS, EACH CONTAINING DATA SHEETS, BROCHURES, OPERATING, MAINTENANCE, RECOMMENDED SPARE PARTS, AND LUBRICATING INSTRUCTIONS AND A COMPLETE SET OF REVISED SHOP DRAWINGS AND BIND IN HARD COVER. IDENTIFY COVER "OPERATION AND MAINTENANCE MANUAL FOR" MANUALS SHALL BE SEPARATED WITH DIVIDERS IN LOGICAL SECTIONS AND VOLUMES.

2. PRESENT ONE (1) COPY FOR REVIEW BY CONSULTANT. MAKE ALL CORRECTIONS REQUESTED BY THE CONSULTANT AND FORWARD THE CORRECTED REVIEW COPY PLUS A DUPLICATE TO THE OWNER WITH A COPY OF TRANSMITTAL TO CONSULTANT FOR THEIR RECORDS. INCLUDE THE FOLLOWING INFORMATION IN EACH MANUAL:

- WRITTEN WARRANTY - 1 YEAR FOR LABOR AND MATERIALS
- AS BUILT DRAWINGS
- CERTIFICATE(S) OF ACCEPTANCE FROM AUTHORITIES HAVING JURISDICTION
- VERIFICATION REPORTS AND CERTIFICATE(S) FOR ANY NEW FIRE ALARM COMPONENTS OR TIE-INS AND ANY BASE BUILDING TIE-INS FOR AFFICATED SYSTEMS
- THE CONSULTANTS REVISED SHOP DRAWINGS - TECHNICAL DATA, PRODUCT DATA, TECHNICAL DESCRIPTIONS OF ITEMS, AND PARTS LISTS.

MATERIALS AND INSTALLATION

ALL MATERIALS, WORKMANSHIP AND/OR INSTALLATION PRACTICES AND ACTIVITY SHALL MEET OR EXCEED THE FOLLOWING REFERENCE STANDARDS: CANADIAN ELECTRICAL CODE, ONTARIO BUILDING CODE, NEMA-NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION FIRE CODE. CONTRACTOR TO PROVIDE AND INCLUDE AS PART OF THE BID ALL THE MISCELLANEOUS ITEMS, HARDWARE, DEVICES, WIRING, ETC., NOT SPECIFICALLY DESCRIBED, BUT REQUIRED FOR THE INSTALLATION AND OPERATION OF THE SYSTEM.

CONDUITS, CONDUIT FASTENINGS AND CONDUIT FITTINGS

1. ALL WIRING SHALL BE INSTALLED IN METALLIC RACEWAYS, ELECTRICAL METALLIC TUBING (EMT), ARMORED MULTI-CONDUCTOR FIRE ALARM CABLE (WITH FT-4 RATED JACKET) IS ACCEPTABLE FOR CONDUCTORS DRAWN IN RACEWAYS.

WHERE A WET OR CORROSIVE ENVIRONMENT EXISTS, SUBMIT THE LOCATION AND PROPOSED RACEWAY TO BE USED TO THE CONSULTANT FOR APPROVAL.

2. RACEWAYS ARE TO BE CONCEALED IN THE INTERSTITIAL SPACE BETWEEN THE CEILING AND THE FINISHED CEILING UNLESS SUSPENDED T-BAR OR DRYWALL/PLASTER CEILING EXIST.

3. DROPS TO DEVICES MOUNTED ON VERTICAL SURFACES SHALL BE LOCATED CONCEALED WITHIN THE VERTICAL ASSEMBLY. EXPOSED RACEWAYS SHALL NOT BE INSTALLED UPON APPROVAL OF THE CLIENT/ENGINEER.

4. PROVIDE RIGID CONDUIT WITH THREADED FITTINGS AND WATER/TIGHT GASKETS, WITH MOISTURE PROOF FITTINGS OR WATER/TIGHT ARMORED MULTI-CONDUCTOR FIRE ALARM CABLE (WITH FT-4 RATED JACKET) FOR MOISTURE PROOF DEVICES.

5. SUPPLY AND INSTALL ADDITIONAL OR SPECIAL FASTENING WHERE, IN THE OPINION OF THE CONSULTANT, IT IS NECESSARY TO PROVIDE A SAFE AND PERMANENT INSTALLATION.

6. EXISTING RACEWAY MAY BE REUSED PROVIDED IT MEETS THE REQUIREMENTS OF THIS SECTION, AS WELL AS CURRENT REQUIREMENTS OF THE ONTARIO ELECTRICAL SAFETY CODE.

7. NO MORE THAN TWO (2) - 90 DEG BENDS SHALL BE INSTALLED BETWEEN ANY TWO ADJACENT PULL BOXES. SIZE ALL CONDUITS BASED ON RW 90XPLE WIRING ONLY.

8. SIZE ALL CONDUITS FOR MAX. 40% FILL. TO INCLUDE DEDICATED INSULATED GROUND WIRE.

OUTLET BOXES, PULL AND JUNCTION BOXES

1. SHEET METAL BOXES TO MEET CSA C22.1 N0.18 GALVANIZED STEEL.

2. BOXES SHALL BE OF A SIZE AND TYPE REQUIRED BY CSA C22.1 OR THE ONTARIO ELECTRICAL SAFETY CODE.

3. BOXES SHALL BE INSTALLED AND MOUNTED AS REQUIRED BY CSA C22.1 OR THE ONTARIO ELECTRICAL SAFETY CODE.

4. MOISTURE PROOF BOXES REQUIRED FOR AREAS SUSCEPTIBLE TO MOISTURE. ANY OPENINGS THAT MAY PERMIT MOISTURE INTO THE BOX ARE REQUIRED TO BE PROTECTED WITH SILICONE AND/OR RUBBER GASKETS.

5. NO KNOCKOUTS PERMITTED OTHER THAN REQUIRED FOR RACEWAYS AND FITTINGS.

6. WHERE EXISTING DEVICES ARE REMOVED THE BOX MUST BE REMOVED. IF THE BOX IS NOT REMOVED, FINISHED BLANK COVER PLATES SHALL BE INSTALLED. BLANK COVER PLATE SHALL BE STAINLESS STEEL, OR PAINTED, AS REQUIRED AND APPROVED BY CONSULTANT.

7. WHERE EXISTING DEVICES ARE REMOVED AND REQUIRED FIRE ALARM WIRING IS MAINTAINED WITHIN THE BOX, BLANK COVER PLATE IS TO BE PAINTED RED.

8. INSTALL BOXES TO CSA C22.1 OR GESC. INSTALL IN LOCATIONS REQUIRED FOR SPLICES, TAPS, WIRE PULLING, EQUIPMENT CONNECTIONS AND COMPLIANCE WITH REGULATORY REQUIREMENTS. ENSURE BOXES AND RACEWAYS ARE INSTALLED TO CLEAR MECHANICAL, ELECTRICAL, ARCHITECTURAL, OR SIMILAR INSTALLATIONS.

9. THE OWNER AND/OR CONSULTANT RESERVE THE RIGHT TO RELOCATE THE LOCATION OF ANY BOX UP TO 1.5m PRIOR TO INSTALLATION, WITHOUT INCREASE TO THE CONTRACT PRICE.

10. INSTALL BOXES SQUARE WITH ADJACENT CEILING, FLOOR, OR WALL LINES. KEEP UNUSED KNOCKOUTS INSTALLED. UNUSED NAILING/SCREW HOLES WILL NOT BE PERMITTED. ORIENT BOXES TO ACCOMMODATE WIRING DEVICES ORIENTED AS SPECIFIED.

11. INACCESSIBLE CEILING AREAS: INSTALL OUTLET AND JUNCTION BOXES NO MORE THAN 150MM FROM CEILING ACCESS PANEL OR FROM REMOVABLE RECESSED LUMINAIRES.

12. INSTALL PULL BOXES SUCH THAT NOT MORE THAN FOUR BENDS ARE LOCATED IN THE RACEWAY BETWEEN PULL BOXES.

13. PROVIDE BLANK COVER PLATES FOR BOXES WITHOUT WIRING DEVICES. DO NOT INSTALL OUTLET BOXES BACK TO BACK IN PARTITION. STAGGER TO PREVENT SOUND TRANSFER.

14. STALL FLUSH MOUNTING BOX BACK TO BACK IN WALLS. PROVIDE MINIMUM 450mm SEPARATION, PROVIDE MINIMUM 600mm SEPARATION IN ACUSTIC OR FIRE RATED WALLS.

15. SECURE FLUSH MOUNTING BOX TO INTERIOR WALL AND PARTITION STUDS. ADAPTED ALL OUTLET BOXES TO THEIR RESPECTIVE LOCATIONS AND SUPPORT INDEPENDENTLY OF THE CONDUIT. USE GANG BOXES WHERE MORE THAN ONE DEVICE IS MOUNTED TOGETHER. DO NOT USE SECTIONAL BOX.

16. USE APPROPRIATE OUTLET BOX IN EXTERIOR LOCATIONS AND WET LOCATIONS.

WIRES AND CABLES

1. WIRING FOR LIGHTING, POWER AND FEEDERS: COPPER CONDUCTORS TYPE "RH90", 600V INSULATION, EXCEPT AS OTHERWISE NOTED OR SCHEDULED ON DRAWINGS.

2. WIRING SMALLER THAN 8.3mm² (NO. 8) SHALL BE SOLID. CONDUCTORS OF 8.3mm² (NO. 8) AND LARGER SHALL BE STRANDED.

3. DO NOT USE WIRING SMALLER THAN 3.3mm² (NO. 12) EXCEPT FOR CONTROL WIRING SPECIFIED UNDER DIVISION 28.

4. SIZE BRANCH CIRCUITS AND FEEDERS FOR MAXIMUM 2% VOLTAGE DROP FROM PANELBOARD TO FARTHEST OUTLET IN CIRCUIT AND LARGE ENOUGH TO BE PROTECTED BY FUSE OR BREAKER OF WHICH THEY FORM A PART.

5. FEEDERS, CIRCUIT WIRING AND ANCUILLARY ITEMS SHALL BE COLOUR-CODED FOR PHASE IDENTIFICATION.

6. CABLES FOR OTHER SYSTEMS OF TYPE SPECIFIED IN RESPECTIVE SECTIONS. NUMBER OF WIRES FOR VARIOUS CONTROL, ALARM AND OTHER SYSTEMS ARE INTENDED TO SHOW GENERAL CONTROL SCHEME. ACTUAL NUMBER OF WIRES SHALL BE INSTALLED UNDER APPLICABLE SECTIONS (AND THIS SECTION IF SO SPECIFIED HEREIN) IN ACCORDANCE WITH EQUIPMENT MANUFACTURER'S DIAGRAMS AND REQUIREMENTS AS REVIEWED BY OWNER'S DESIGNER.

WIRING DEVICES

1. WIRING DEVICES FOR GENERAL PURPOSE SHALL BE OF STANDARD QUALITY "SPECIFICATION GRADE" MANUFACTURED AND TESTED IN ACCORDANCE WITH CSA AND NEMA STANDARDS.

2. GENERAL USE SWITCHES CSA C22.2 No. 111 FOR CONTROLLING LIGHTING LOADS: 20A, 120/277V, QUIET TOGGLE, PASS & SEYMOUR CATALOGUE No. 20AC1, HUBBELL CATALOGUE No. 1221 OR EQUAL.

3. THREE-WAY SWITCHES: 20A, 120/277V, QUIET TOGGLE, PASS & SEYMOUR CATALOGUE No. 20AC3, HUBBELL CATALOGUE No. 1223 OR EQUAL.

4. GENERAL USE RECEPTACLES: CSA C22.2 No. 42, SINGLE OR DOUBLE AS DESIGNATED BY SYMBOLS, 15A, 125V, "U"-GROUND, SCREW TERMINALS, SIDE AND BACK WIRING.

5. DUPLEX RECEPTACLES: SIDE OR BACK WRED, RATED 15A, 125V, "U"-GROUND, HUBBELL CATALOGUE No. 5262, PASS & SEYMOUR CATALOGUE No. 5262 OR EQUAL. SPLIT RECEPTACLES, SAME AS DUPLEX RECEPTACLES, EXCEPT WITH BREAK-OFF LINKS REMOVED.

6. WEATHERPROOF RECEPTACLES, SAME AS DUPLEX RECEPTACLES, EXCEPT WITH SPRING-LOADED COVER PLATES AND GASKETS, STANDARD DEPTH 57mm (2.25") TO ACCOMMODATE #12 - #4 CORD, FLAME RETARDANT POLYCARBONATE IN GREY FINISH. TAYMAG CATALOGUE NO. 10330 OR APPROVED EQUIVALENT.

7. PROVIDE HANGERS, INSERTS, SLEEVES AND SUPPORTS AS REQUIRED. DO NOT USE ANY BASE BUILDING SUPPORTS OR EQUIPMENT.

PANELBOARDS

1. INSTALL PANELBOARDS AT LOCATION AS INDICATED ON DRAWINGS. PROVIDE RESPECTIVE PANELBOARD IDENTIFICATION IN ACCORDANCE WITH DESIGNATIONS INDICATED ON DRAWINGS. COMPLETE DIRECTORY CARD PROVIDED WITH PANELBOARD TO CONFORM WITH CIRCUIT IDENTIFICATION.

2. ALL NEW PANELBOARDS, DISCONNECT SWITCHES, METERS, TRANSFORMERS, ETC., TO BE SAME MANUFACTURER, I.C. RATING AND TYPE AS EXISTING EQUIPMENT UNLESS OTHERWISE NOTED.

3. MOLDED CASE CIRCUIT BREAKERS TO BE BOLT-ON AND SAME MANUFACTURER, RATING AND TYPE AS BASE BUILDING BREAKERS.

SERVICE EQUIPMENT

1. INSTALL SERVICE EQUIPMENT, CONNECT TO INCOMING SERVICE, CONNECT TO OUTGOING LOAD CIRCUITS.

2. DRY TYPE TRANSFORMERS - PROVIDE DOUBLE BUS OR TRANSFORMER NEUTRALS FOR CONNECTION OF CABLES. USE FLEXIBLE CONDUIT FOR CONNECTIONS TO TRANSFORMER CASE. MAKE CONDUIT CONNECTIONS TO SIDE PANEL OF ENCLOSURE. CEILING MOUNT TRANSFORMERS UP TO 4KVA WITH SUSPENSION RODS AND SPRING ISOLATORS. TRANSFORMERS 75KVA AND LARGER SHALL BE FLOOR MOUNTED ON VIBRATION ISOLATING PADS SUITABLE FOR ISOLATING THE TRANSFORMER FROM THE BUILDING STRUCTURE.

3. ALL DISTRIBUTION EQUIPMENT INSTALLED IN SPRINKLERED AREAS SHALL BE EQUIPPED WITH SPRINKLER DRIP SHIELDS.

MEGGERING AND BALANCING

1. MEGGER ALL POWER CIRCUIT FEEDERS. IF GROUND RESISTANCE ON ANY CIRCUIT IS LESS THAN THAT REQUIRED BY CSA OR OTHER GOVERNING REGULATIONS, SUCH CIRCUITS ARE TO BE CONSIDERED DEFECTIVE AND MUST BE REPAIRED.

2. MEASURE PHASE CURRENT TO PANELBOARDS WITH NORMAL LOADS OPERATING AT TIME OF ACCEPTANCE. ADJUST BRANCH CIRCUIT CONNECTIONS AS REQUIRED TO OBTAIN BEST BALANCE OF CURRENT BETWEEN PHASES AND SUBMIT A REPORT FOR INSERTION INTO MANUALS.

GROUNDING

1. INSTALL GROUNDING CONNECTIONS TO TYPICAL EQUIPMENT AS PANELBOARDS, SWITCHGEAR, DUCT SYSTEMS, FRAMES OF MOTORS, MOTOR CONTROL CENTRES, STARTERS, CONTROL PANELS, BUILDING STEEL WORK, GENERATORS, ELEVATORS AND ESCALATORS, DISTRIBUTION PANELS, OUTDOOR LIGHTING.

2. GROUND ALL EQUIPMENT IN ACCORDANCE WITH LATEST EDITION OF THE ELECTRICAL SAFETY CODE. SEPARATE GREEN INSULATED GROUND CONDUCTOR IN EVERY CONDUIT TO ALL DEVICES.

3. INSTALL GROUNDING CONNECTIONS FOR TELEPHONE, SOUND, FIRE ALARM, INTERCOMMUNICATION SYSTEMS.

GENERAL LIGHTING, EXIT LIGHTS, EMERGENCY LIGHTING

1. LOCATE AND INSTALL NEW LIGHTING FIXTURES AS SHOWN ON LIGHTING LAYOUT AND AS INDICATED IN THE LUMINAIRE SCHEDULE. ALL LUMINAIRES TO BE CSA, CUL APPROVED. INSTALL ACCESSORIES PROVIDED WITH EACH LUMINAIRE.

2. ALL NEW EXIT LIGHTING SHALL BE GREEN RUNNING MAN TYPE COMPLETE WITH MOUNTING ACCESSORIES LED.

3. PROVIDE EMERGENCY LIGHTS TO MATCH EXISTING BASE BUILDING TYPE (MANUFACTURER AND MODEL). REFER TO LIGHTING LAYOUT FOR FIXTURE LOCATIONS AND CONNECTIONS.

4. SUPPORT SURFACE MOUNTED LUMINAIRES ON GRID CEILING DIRECTLY FROM BUILDING STRUCTURE.

5. INCLUDE COST IN TENDER PRICE TO PROVIDE ADDITIONAL SUPPORTS FOR ALL NEW LUMINAIRES AND ALL RELOCATED EXISTING LUMINAIRES.

DETECTION/INSIGHT CONDUITS AND WIRING

1. USE #14 AWG MINIMUM SIZE CONDUCTORS FOR DETECTION AND SIGNAL CIRCUIT CONDUCTORS. INSTALL WIRING IN CONDUIT. ELECTRICAL CONTRACTOR SHALL PROVIDE MINIMUM 3/4" DIA. CONDUIT OF EMT, AND BOXES, INCLUDING PULL STRINGS FOR ALL SECURITY, INTRUSION, PUBLIC ADDRESS, TELEVISION, INTERCOM DEVICES, SECURITY/JV CONTRACTOR TO PROVIDE AND TERMINATE WIRING FOR ALL SECURITY SYSTEM DEVICES, AND COORDINATE WITH ELECTRICAL CONTRACTOR ACCORDINGLY.

MECHANICAL TRADES WIRING

1. ALL STARTERS AND CONTROL WIRING TO BE PROVIDED BY DIVISION 23. ELECTRICAL CONTRACTOR WILL INSTALL ALL STARTERS SUPPLIED BY MECHANICAL TRADE AND PROVIDE ALL POWER WIRING.

2. CONFIRM ELECTRICAL REQUIREMENTS AND EXACT LOCATIONS OF ALL MECHANICAL EQUIPMENT WITH DIVISION 23 PRIOR TO INSTALLATION. COORDINATE WITH MECHANICAL DRAWINGS, AS REQUIRED.

3. SUPPLY, INSTALL AND CONNECT ALL REQUIRED DISCONNECT SWITCHES.

COMMISSIONING, START-UP AND TESTING

COMMISSIONING

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SCHEDULING, COORDINATING, PERFORMING AND DOCUMENTING THE COMMISSIONING PROCESS DETAILED HEREIN, OPERATING EQUIPMENT AND SYSTEMS, TROUBLESHOOTING AND MAKING ADJUSTMENTS AS REQUIRED.

- SYSTEMS TO BE OPERATED AT FULL CAPACITY UNDER VARIOUS MODES TO DETERMINE IF THEY FUNCTION CORRECTLY AND CONSISTENTLY AT PEAK EFFICIENCY AND FULL CAPACITY. SYSTEMS TO BE INTERACTIVELY WITH EACH OTHER AS INTENDED IN ACCORDANCE WITH CONTRACT DOCUMENTS AND DESIGN CRITERIA.

- DURING THESE CHECKS, ADJUSTMENTS TO BE MADE TO ENHANCE PERFORMANCE TO MEET ENVIRONMENTAL OR USER REQUIREMENTS.

CONTRACTOR TO VERIFY THAT THE INSTALLED EQUIPMENT, SYSTEMS AND INTEGRATED SYSTEMS OPERATE IN ACCORDANCE WITH CONTRACT DOCUMENTS AND DESIGN CRITERIA AND INTENT. ENSURE APPROPRIATE DOCUMENTATION IS COMPILED INTO THE BUILDING OPERATION MANUAL. EFFECTIVELY TRAIN OPERATION AND MAINTENANCE STAFF.

CONTRACTOR TO ASSUME LIABILITIES AND COSTS FOR INSPECTIONS, INCLUDING DISASSEMBLY AND RE-ASSEMBLY AFTER APPROVAL, STARTING, TESTING AND ADJUSTING, INCLUDING SUPPLY OF TESTING EQUIPMENT.

CONTRACTOR TO SUBMIT THE COMMISSIONING FORMS: INSTALLATION CHECK LISTS AND PRODUCT INFORMATION / PERFORMANCE VERIFICATION FORMS FOR REQUIREMENTS AND INSTRUCTIONS FOR USE.

TESTING

WHEN THE SYSTEM HAS BEEN COMPLETED, THE CONTRACTOR SHALL PERFORM TESTS AND COMPLETE THE ASSOCIATED DATA FORMS. ENSURE THAT ALL DEVICES ARE COMMISSIONED AND OPERABLE.

THE CONTRACTOR AND MANUFACTURERS SHALL FILL OUT THE TEST FORMS AND DATA SHEETS. THE FORMS MUST BE APPROVED BY THE CONSULTANT BEFORE THEY ARE USED.

THE TESTING FORMS REQUIRED ARE AS FOLLOWS: COMMISSIONING INDEX; EQUIPMENT VERIFICATION FORM; EQUIPMENT TEST FORM; TESTING AND START-UP SCHEDULE.

TESTING TO BE PERFORMED IN ACCORDANCE WITH NETA - INTERNATIONAL ELECTRICAL TESTING ASSOCIATION STANDARDS.

CONTRACTOR TO CONFIRM AND MAINTAIN THE PHASE ROTATION OF ALL EXISTING EQUIPMENT.

START-UP

CONTRACTOR TO VERIFY THE FUNCTIONS OF COMPONENTS PRIOR TO SYSTEM ENERGIZING. INSTALLATION CHECK SHEETS SIGNED OFF, MEGGER RESULTS OF FEEDERS AVAILABLE, COMMISSIONING REPORT COMPLETED, POINT TO POINT CHECKS COMPLETED, SEQUENCE OF OPERATION VERIFIED, EQUIPMENT LABELING COMPLETED.

EXECUTION

1. EXECUTE CUTTING, FITTING, AND PATCHING TO COMPLETE WORK. REMOVE AND REPLACE DEFECTIVE AND NON_CONFORMING WORK. X-RAY SLAB OR WALLS BEFORE CORE DRILLING FLOOR SLAB OR STRUCTURAL WALLS. OBTAIN THE CONSULTANT AND CLIENT APPROVAL FOR THE PROPOSED LOCATIONS.

2. PROVIDE OPENINGS IN NON-STRUCTURAL ELEMENTS FOR PENETRATIONS OF MECHANICAL AND ELECTRICAL WORK. WHERE CONDITIONS PASS THROUGH FIRE RATED FLOORS OR FLOORS, COMPLETELY SEAL VOIDS WITH FIRE STOPPING MATERIAL. CSA APPROVED OR UL LISTED AND MAINTAIN SAME FIRE RATING OF BUILDING ELEMENTS.

3. EXECUTE WORK BY METHODS TO AVOID DAMAGE TO OTHER WORK, AND WHICH WILL PROVIDE PROPER SURFACES TO RECEIVE PATCHING AND FINISHING. ANY EXISTING BUILDING SERVICE DAMAGE CAUSED BY CONTRACTOR MUST BE REPAIRED IMMEDIATELY AT NO COST TO THE CLIENT.

4. PROVIDE ALL EXPOSED FERROUS METAL WORK, AND PRODUCTS, EXCEPT CONDUIT, WITH AT LEAST ONE (1) FACTORY PRIME COAT OR PAINT ONE PRIME COAT ON SITE. CLEAN UP OR WIRE BRUSH ALL EQUIPMENT BEFORE PAINTING.

5. BEFORE ENERGIZING ANY SYSTEMS, INSPECT AND CLEAN THE INSIDE OF ALL PANELBOARDS, SWITCHGEAR AND CABINETS TO ENSURE THAT THEY ARE COMPLETELY FREE FROM DUST AND DEBRIS.

6. CARRY OUT ALL TESTS SPECIFIED AND TESTS REQUIRED BY AUTHORITIES HAVING JURISDICTION. TEST EQUIPMENT TO THE REQUIREMENTS OF AND, WHERE NECESSARY, IN THE PRESENCE OF THE EQUIPMENT MANUFACTURER.

7. INSTALL ALL PRODUCTS AND SERVICES IN ACCORDANCE WITH THE MANUFACTURER'S REQUIREMENTS AND/OR RECOMMENDATIONS.

8. PROVIDE ALL SUPPORTS, HANGERS AND FASTENERS. SECURE ALL PRODUCTS AND SERVICES SO AS NOT TO IMPOSE UNDUCE STRESSES ON THE STRUCTURE AND SYSTEMS.

9. ALL EXISTING ELECTRICAL EQUIPMENT WHICH IS NO LONGER REQUIRED SHALL BE REMOVED AND DISPOSED OF, OFF SITE. MAKE SAFE ALL CIRCUIT WIRING LEFT FOR FUTURE USE.

10. REMOVE FROM THE SITE ALL MATERIALS IN RENOVATED AREAS OF THE EXISTING BUILDING WHICH ARE NOT TO REMAIN OR BE REUSED, UNLESS NOTED AS REMAINING THE PROPERTY OF THE OWNER. DISCONNECT AND REMOVE ALL EXISTING SERVICES WHICH ARE ABANDONED. DISCONNECT AND REMOVE ALL WIRING MATERIALS AND DEVICES WHICH ARE ABANDONED. REMOVE ALL CONDUIT WORK WHICH IS ABANDONED EXCEPT CUT FLUSH WHERE EMBEDDED IN STRUCTURE.

11. PROVIDE DAILY CLEAN UP AND PROPER DISPOSAL OF DEBRIS GENERATED BY DAILY OPERATIONS. ALL CONTRACTOR TOOLS, EXTRA MATERIALS AND WASTE MATERIALS SHALL BE REMOVED AND THE SITE AT THE COMPLETION OF THE WORK.

12. CARRY OUT THE WORK WITH A MINIMUM OF NOISE, DUST AND DISTURBANCE. CHANGES, ALTERATIONS, RELOCATION, ADDITIONS AND CONNECTIONS TO EXISTING ELECTRICAL WORK INDICATED ON DRAWINGS SHALL BE EXECUTED AS REQUIRED FOR PROPER COMPLETION OF WORK. WHERE CONNECTIONS ARE MADE TO EXISTING ELECTRICALLY OPERATED EQUIPMENT, SUPPLY AND INSTALL ALL NECESSARY WIRING AND CONNECT UP COMPLETE TO EQUIPMENT AS REQUIRED FOR PROPER OPERATION. ALL SUCH EXISTING EQUIPMENT TO BE RECONNECTED AND RE-USED, SHALL BE PUT IN SATISFACTORY OPERATING CONDITION.

DATA SPECIFICATIONS

MATERIALS AND INSTALLATION

HORIZONTAL CABLING

1. PROVIDE AND INSTALL ALL HORIZONTAL DATA CABLING AS INDICATED. HORIZONTAL DATA CABLES SHALL BE 4-PAIR, UTP, 23 AWG, CMR/CMF, FTB/FT4 FIRE RATED, CERTIFIED TO EIA/TIA CATEGORY 6 - SPECIFICATIONS, AND BLUE IN COLOUR. THE FULL END TO END 100 METER CHANNEL THAT INCLUDES A WORST CASE OF FOUR TERMINATIONS (INCLUDING CONDUIT/PATCH POINT AND CROSS CONNECTION) MUST MEET ALL OF THE CRITERIA (AS A MINIMUM) AS DEFINED. THE CHANNEL PERFORMANCE SPECIFICATIONS ALL OF THE PARAMETERS IN SECTION 1.6 MUST BE TESTED (AND PUBLISHED) UP TO AND INCLUDING 500 MHZ AND WARRANTABLE UP TO AND INCLUDING 5000MHZ FOR A MINIMUM PERIOD OF 20 YEARS.

2. PROVIDE AND INSTALL ALL HORIZONTAL VOICE CABLES AS INDICATED. HORIZONTAL VOICE CABLES SHALL BE 4-PAIR UNSHEATHED TWISTED PAIR, CSA FTE/OMP PLENUM FIRE RATED, CERTIFIED TO EIA/TIA CATEGORY 6 SPECIFICATIONS, AND WHITE IN COLOUR. ALL FUTURE REFERENCE TO "VOICE CABLE" SHALL REFER TO THE REQUIREMENTS AS STATED IN THIS SECTION. THE CABLE MUST BE CSA CERTIFIED AND STAMPED ACCORDINGLY. ALL CATEGORY 6 UTP VOICE CABLE SHALL HAVE A WHITE OUTER JACKET. OTHER COLORS MAY BE ACCEPTABLE IF APPROVED IN WRITING BY THE CONSULTANT.

3. WHEN INSTALLED IN CONDUIT, FT4 TYPE CABLES CAN BE USED.

4. ALL CABLES PULLED AND TERMINATED FOR SERVERS ARE TO BE TREATED EXACTLY THE SAME AS OTHER HORIZONTAL VOICE AND DATA CABLES.

5. THE INSTALLATION SHALL COMPLY WITH GOITS STANDARDS.

6. CODES, PERMITS AND INSPECTIONS: ANY STRUCTURAL INSTALLATION MUST COMPLY WITH THE ELECTRICAL SAFETY CODE, ALL LOCAL, PROVINCIAL AND FEDERAL LAWS, WHERE APPLICABLE, AND WITH REQUIREMENTS OF THE CANADIAN STANDARDS ASSOCIATION (CSA). THE CABLE CONTRACTOR IS RESPONSIBLE FOR MAKING ANY CHANGES OR ALTERATIONS REQUIRED BY THE AUTHORIZED INSPECTOR OF THE AUTHORITY HAVING JURISDICTION. THE CABLE CONTRACTOR MUST OBTAIN AND PAY FOR PERMITS AND INSPECTION REQUIRED FOR WORK PERMITTED.

WHERE MATERIALS WHICH ARE SPECIFIED REQUIRE SPECIAL INSPECTION AND APPROVAL OF CSA AND/OR LOCAL AUTHORITIES, OBTAIN SUCH APPROVAL FOR THE PARTICULAR INSTALLATION WITH THE CO-OPERATION AT THE MATERIAL SUPPLIER.

MODULAR JACKS AND ADAPTORS

1. PROVIDE AND INSTALL ALL MODULAR JACKS AS INDICATED.

2. MODULAR JACK CURRENT RATINGS: 15 AMPERES MAXIMUM MODULAR JACK DURABILITY: 750 MATING CYCLES MODULAR JACK CONTACT PRESSURE: 100 GRAMS, MINIMUM PER CONTACT DIELECTRIC VOLTAGE STRENGTH: 1000V RMS AT 60HZ.

3. THE UTP MODULES MUST BE MATCHED APPROPRIATELY WITH THE VOICE AND DATA CABLES TO ENSURE THAT END TO END VENDOR WARRANTIES WILL BE APPLICABLE. ALL UTP DATA AND VOICE CABLES SHALL BE TERMINATED WITH THE JACK CORDS AS DESCRIBED BELOW:

MODULAR JACK COLOR - BLUE
VOICE MODULE COLOR - WHITE
THE COLOR OF THE UTP MODULES MAY BE CHANGED AT THE DISCRETION OF THE CONSULTANT.

TERMINATION VOICE MODULES, RACKS AND PATCH PANELS

1. PROVIDE VOICE TERMINATION BLOCKS WHERE SHOWN ON DRAWINGS. VOICE TERMINATION PANELS TO BE MOUNTED ON DEDICATED RACK.

2. ALL UTP VOICE AND DATA MODULES SHALL BE 8-PIN RJ45'S CONFORMING TO THE ENHANCED CATEGORY 6 STANDARD. THE JACKS MUST ACCEPT EITHER RJ45 OR RJ11 MALE PLUGS WITHOUT CAUSING ANY DAMAGE OR DEGRADATION TO THE CONNECTORS.

RISER CABLING - VOICE

MULTI-PAIR CATEGORY 5 BACKBONE CABLE FOR VOICE APPLICATIONS. THE MULTI-PAIR VOICE BACKBONE CABLE SHALL BE CATEGORY 5, RISER GRADE CABLE. THE CABLE MUST HAVE THE FOLLOWING ATTRIBUTES:

- #24 AWG SOLID COPPER CONDUCTORS FORMED INTO 25-PAIR BUNDLE GROUPS.
- SHEATH MUST BE CMP/CMR RISER RATED (FT6/FT4) AND BE MADE OF AN ALUMIN (ALPAST). IT MUST HAVE A LONGITUDINALLY APPLIED, TRANSVERSALELY CORRUGATED ALUMINUM SHIELD THAT IS BONDED TO AN OUTER JACKET OF PVC.
- THE CABLE MUST MEET OR EXCEED REQUIREMENTS OF EIA/TIA-568-A FOR (CATEGORY 5). THE CABLE MUST BE CSA CERTIFIED AND STAMPED ACCORDINGLY.

MECHANICAL TRADES WIRING

1. ALL STARTERS AND CONTROL WIRING TO BE PROVIDED BY DIVISION 23. ELECTRICAL CONTRACTOR WILL INSTALL ALL STARTERS SUPPLIED BY MECHANICAL TRADE AND PROVIDE ALL POWER WIRING.

2. CONFIRM ELECTRICAL REQUIREMENTS AND EXACT LOCATIONS OF ALL MECHANICAL EQUIPMENT WITH DIVISION 23 PRIOR TO INSTALLATION. COORDINATE WITH MECHANICAL DRAWINGS, AS REQUIRED.

3. SUPPLY, INSTALL AND CONNECT ALL REQUIRED DISCONNECT SWITCHES.

COMMISSIONING, START-UP AND TESTING

COMMISSIONING

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SCHEDULING, COORDINATING, PERFORMING AND DOCUMENTING THE COMMISSIONING PROCESS DETAILED HEREIN, OPERATING EQUIPMENT AND SYSTEMS, TROUBLESHOOTING AND MAKING ADJUSTMENTS AS REQUIRED.

- SYSTEMS TO BE OPERATED AT FULL CAPACITY UNDER VARIOUS MODES TO DETERMINE IF THEY FUNCTION CORRECTLY AND CONSISTENTLY AT PEAK EFFICIENCY AND FULL CAPACITY. SYSTEMS TO BE INTERACTIVELY WITH EACH OTHER AS INTENDED IN ACCORDANCE WITH CONTRACT DOCUMENT

GENERAL NOTES:
 CONTRACTORS SHALL VERIFY AND BE RESPONSIBLE FOR ALL DIMENSIONS AND CONDITIONS ON THE JOB AND THE ENGINEER SHALL BE INFORMED OF ANY VARIATIONS FROM THE DIMENSIONS AND CONDITIONS SHOWN ON THE DRAWINGS. DO NOT SCALE DRAWINGS. SHOP DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL BEFORE PROCEEDING WITH FABRICATION. THIS DRAWING IS THE PROPERTY OF ALGAL ENGINEERING LTD. AND SHALL NOT BE REPRODUCED WITHOUT THEIR PERMISSION AND UNLESS THE REPRODUCTION CARRIES THEIR NAME. ALL INFORMATION SHOWN ON THIS DRAWING IS FOR USE ON THE SPECIFIED PROJECT ONLY AND SHALL NOT BE USED OTHERWISE WITHOUT WRITTEN PERMISSION OF ALGAL ENGINEERING LTD

R01	RE-ISSUED FOR TENDER/PERMIT	2024-08-22
R00	ISSUED FOR TENDER	2024-07-31
RP4	ISSUED FOR 99% CLIENT REVIEW	2024-06-25
RP3	ISSUED FOR 66% CLIENT REVIEW	2024-05-15
RP2	ISSUED FOR 33% CLIENT REVIEW	2024-04-18
No	Revisions	Date

Orientation Seal

The Contractor shall check and verify all dimensions and report all errors and omissions to the IO-Owner's/MBS' Designee (as applicable) for his/her written direction before proceeding with the Work.

A Detail No
 B Sheet No where detailed

Architectural

ddi

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Ministry PSF Number

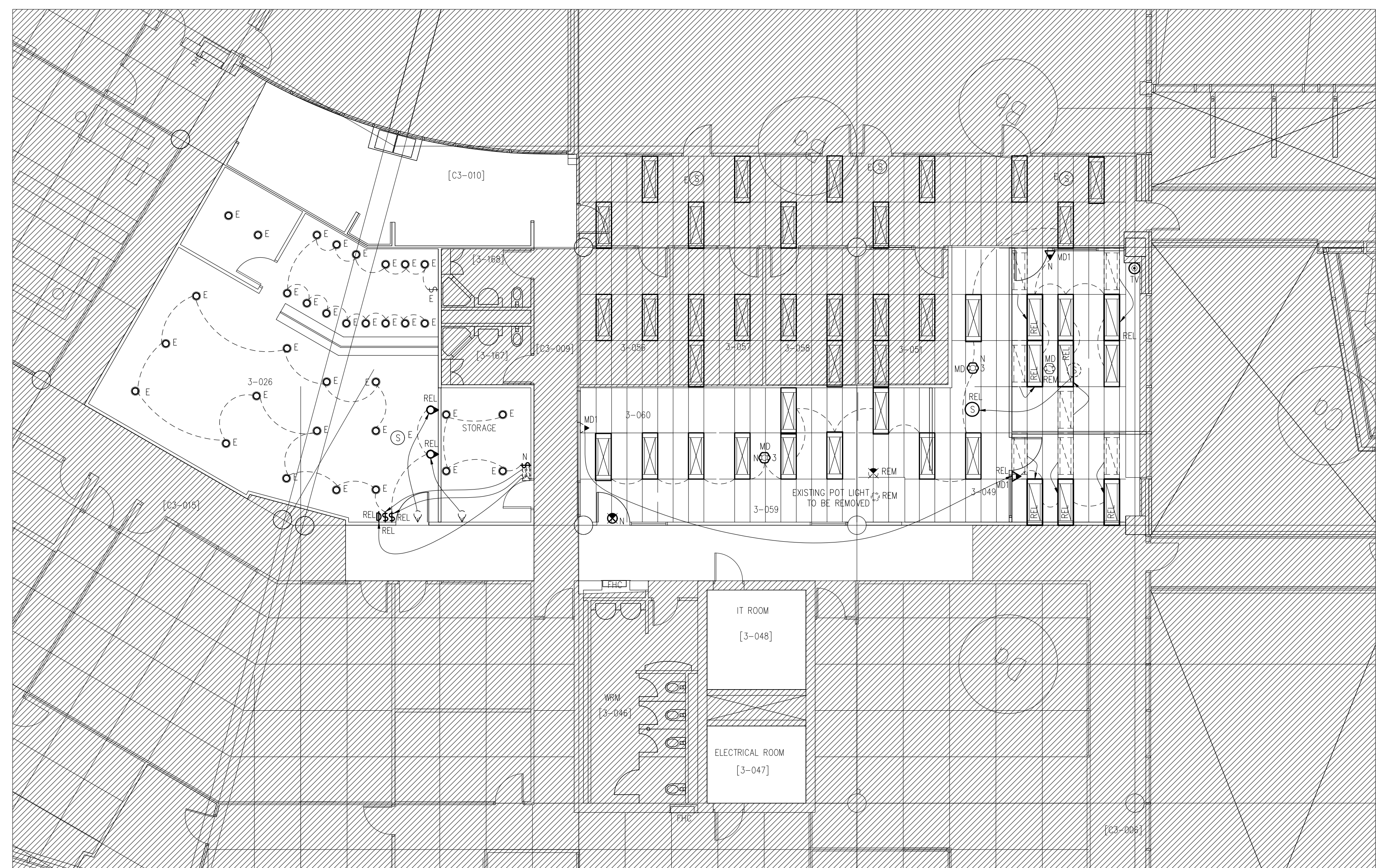
Project
**OPP HEADQUARTER
 COMMANDER OFFICE
 RENOVATION**
 Location
**777 MEMORIAL AVENUE
 ORILLIA, ONTARIO**
 IO Project No. Site No. Building No.
1103395-274117 N06689 B25370

Client
COLLIER PROJECT LEADERS

Drawing Title
**PROPOSED LIGHTING LAYOUT
 LEGEND, NOTES**

Scale 1/8"=1'-0"	Date 2024-04-03
Drawn by B.W.	Substantial Performance Date TBD
Designed by A.E.	Drawing No. AE-23301-DRAW-E003-R01
Approved by Floor No. M.R. 3	of 4

CADD File Name: **AE-23301-DRAW-E001-E004-R01**



1 PROPOSED LIGHTING LAYOUT
E003 SCALE: 1/8"=1'-0"

LIGHTING & LIFE SAFETY NOTES

- GENERAL**
 - CONTRACTOR SHALL VISIT THE SITE TO DETERMINE THE EXTENT OF THE ALL EXISTING CONDITIONS PRIOR TO SUBMITTING ANY QUOTATION.
 - ANY DISCREPANCIES BETWEEN DRAWINGS AND SPECIFICATIONS AND/OR EXISTING CONDITIONS ARE TO BE REFERRED TO CONSULTANT FOR INSTRUCTIONS BEFORE ANY WORK IS BEGUN.
- LIGHTING**
 - REVISE EXISTING LIGHTING WIRING TO ACCOMMODATE NEW LIGHTING LAYOUT. BALANCE THE LOADS. ADD WIRING & CONDUIT.
 - ALL FIXTURES SHALL BE INSTALLED ACCURATELY IN LINE & LEVEL.
 - ANY RELOCATION OF LIGHTING FIXTURES REQUIRED DUE TO THE SITE CONDITIONS SHALL BE APPROVED BY THE ELECTRICAL CONSULTANT PRIOR TO PROCEEDING WITH WORK.
 - CONTRACTOR TO SUPPLY AND INSTALL ALL NECESSARY ANCHORS, HANGERS, JUNCTION BOX, FITTINGS, ELECTRICAL CIRCUIT BREAKER WIRING, AND CONDUITS TO COMPLETE THE INSTALLATION OF EXIT SIGN AND REWIRING OF EXISTING LIGHTING. CONTRACTOR TO MAKE SURE INSTALLATION IN A COMPLIANCE WITH THE OESC AND APPLICABLE CODES AND STANDARDS.
 - REMOVE AND REINSTALL EXISTING LIGHT FIXTURE TO ALLOW NEW WALL CONSTRUCTION. IF THE REINSTALLATION IS NOT POSSIBLE AFTER NEW CONSTRUCTION, CONTRACTOR TO RELOCATE THE EXISTING LUMINAIRES TO NEW LOCATION AS SHOWN ON THE DRAWING.
- LIGHTING CONTROL**
 - PROVIDE WALL/CEILING MOUNTED OCCUPANCY SENSOR TO MATCH EXISTING OCCUPANCY SENSORS AS INDICATED.
 - RELOCATE EXISTING LIGHT SWITCH TO ROOM E-026 AND REVISE THE WIRING INCLUDE IN BID PRICE TO PROVIDE ADDITIONAL WIRE FOR THE EXISTING DIMMER SWITCH AND DIMMED LIGHTS TO PROVIDE CONNECTION TO EXISTING DIMMED LIGHTS. CONTRACTOR TO INVESTIGATE ON SITE FOR THE EXISTING DIMMED LIGHTS AND REVISE THE WIRING FOR DIMMED LIGHTS CONNECTION. REPAIR THE DIMMER SWITCH IF REQUIRED.
 - PROVIDE NEW WALL MOUNTED LIGHT SWITCH.
- LIFE SAFETY SYSTEM**
 - REVISE EXISTING F.A. DEVICES WHERE POSSIBLE. RE-TEST COMPLETE. RELOCATION OF EXISTING F.A. DEVICES TO INCLUDE ALL REQUIRED ACCESSORIES FOR EXISTING FIRE ALARM SYSTEM AND TO FOLLOW CAN/ULC S524 INSTALLATION STANDARDS. F.A. SPEAKER TO BE TAPPED AT THE SAME WATTAGE AS EXISTING FIRE ALARM SPEAKER.
 - AFTER COMPLETION OF WORK THE FIRE ALARM SYSTEM MUST BE TESTED AND VERIFIED AS PER STANDARD CAN/ULC S537
 - SUPPLY AND INSTALL, NEW EXIT LIGHTS, LED TYPE. MANUFACTURER: LUMACELL. CAT#: LAEC-2HO C/W NI-MH BATTERY
 - CONNECT NEW EXIT SIGNS TO EXISTING EXIT LIGHT SIGN CIRCUIT WITHIN THE AREA. LABEL CCT NUMBER OF EMERGENCY FEEDER ON EXIT SIGNS.
 - IF THE MODIFIED LUMINAIRES ARE CONNECTED TO EMERGENCY CIRCUIT, CONTRACTOR TO DISCONNECT THE LUMINAIRES FROM EMERGENCY CIRCUIT AND CONNECT THEM TO NORMAL POWER.
 - REMOVE EXISTING EXIT LIGHT AND MIGRATE THE EXISTING CIRCUIT TO NEW LOCATION FOR INSTALLING NEW EXIT LIGHT.
 - ADD ADDITIONAL WIRING AND CONDUIT AS REQUIRED.

LEGEND

LIGHTING	
SYMBOL	DESCRIPTION
	EXISTING 60"x20" LUMINAIRE TO REMAIN
	EXISTING 60"x20" LUMINAIRE TO BE RELOCATED
	EXISTING 60"x20" LUMINAIRE TO BE REMOVE AND REINSTALL. IF THIS IS NOT POSSIBLE THEN RELOCATE TO NEW LOCATION AS SHOWN ON THE DRAWING.
	EXISTING POT LIGHT TO REMAIN
	WALL WASH
	ONE FACE EXIT LIGHT
	CEILING MOUNTED MOTION DETECTOR (3-DENOTES 3 WAY)
	WALL MOUNTED MOTION DETECTOR (3-DENOTES 3 WAY)
	FIRE ALARM SPEAKER
	LIGHT SWITCH
	DIMMER LIGHT SWITCH

ABBREVIATIONS

N	DENOTES NEW DEVICE TO BE PROVIDED	REM	DENOTES EXISTING TO BE REMOVED
E	DENOTES EXISTING TO REMAIN	REL	EXISTING IN RELOCATED POSITION

DEMOLITION SPECIFICATION

- GENERAL**
 - THE CONTRACTOR SHALL VISIT THE SITE AND EXAMINE ALL DRAWINGS CAREFULLY TO DETERMINE THE EXTENT OF THE DEMOLITION IN THE EXISTING BUILDING. EXAMINE THE SITE AND DETERMINE AND INCLUDE IN THE TOTAL PRICE OF THE TOTAL COST OF LABOUR AND MATERIAL TO DISCONNECT, REMOVE, RELOCATE, BLANK-OFF, REDROUTE OR MAKE SAFE ALL EXISTING CONDUITS AND WIRE, BOXES, LUMINAIRES AND EQUIPMENT REQUIRED.
 - NO ALLOWANCE WILL BE MADE FOR OBVIOUS CONSIDERATIONS WHICH MAY HAVE BEEN OVERLOOKED.
 - THE WHOLE OF THE WORK SHALL BE CARRIED OUT AND PERFORMED IN A WORKMANLIKE MANNER TO THE SATISFACTION OF THE CONSULTANT. ANY UNSATISFACTORY WORK SHALL BE REPLACED BY THIS DIVISION WITHOUT EXTRA COST TO THE OWNER.
 - IN CASE EXTRA WORK OF ANY KIND IS REQUIRED, OBTAIN WRITTEN INSTRUCTIONS FROM THE CONSULTANT BEFORE PROCEEDING. PAYMENTS WILL BE MADE AT A FAIR AND REASONABLE RATE ONLY FOR AUTHORIZED EXTRAS. IN THE CASE OF OMISSIONS, THE SAME PROCEDURE SHALL APPLY AND A DECREASE MADE.
 - THE CONTRACTOR SHALL BE RESPONSIBLE FOR DISCONNECTING AND REMOVING ALL ELECTRICAL EQUIPMENT FROM AREAS BEING ALTERED OR DEMOLISHED. WIRING, CONDUIT AND EQUIPMENT REQUIRED TO MAINTAIN SERVICE IN OTHER PARTS OF THE BUILDING SHALL BE TEMPORARILY SUPPORTED, REROUTED, SERVICED OR RELOCATED AS REQUIRED. OBSOLETE CONDUITS AND CABLES SHALL BE DISCONNECTED FROM THEIR SOURCE OF SUPPLY, CUT BACK AS FAR AS POSSIBLE, AND SHALL BE REMOVED. ALL EXISTING WIRING NOT REMOVED SHALL BE DISCONNECTED, BLANKED-OFF AND MADE SAFE.
 - WORK PERFORMED SHALL BE IN CONFORMITY WITH ALL LAWS, BYLAWS, OR REGULATIONS OF THE MUNICIPAL, PROVINCIAL OR OTHER AUTHORITIES HAVING JURISDICTION. NOTHING CONTAINED IN THESE DRAWINGS SHALL BE CONSTRUED AS TO BE IN CONFLICT WITH ANY SUCH LAWS.
 - THE CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY FOR ANY DISRUPTION TO THE EXISTING SERVICES. THE EXISTING BUILDING MUST BE KEPT IN OPERATION AT ALL TIMES. ARRANGE WORK IN SUCH A MANNER THAT INTERRUPTIONS IN SERVICES OCCUR ONLY AT SCHEDULED TIMES. UNAVOIDABLE INTERRUPTION SHALL BE SCHEDULED WITH THE LANDLORD AT LEAST 48 HOURS IN ADVANCE. OVERTIME WORK THAT MAY BE REQUIRED TO TIE-IN SERVICES AT NIGHT OR ON WEEKENDS SHALL BE INCLUDED IN THE TENDER AMOUNT.
 - CONTRACTOR SHALL ENSURE THAT ALL REQUIRED PERMITS ARE OBTAINED. NO WORK WHICH IS CONDITIONAL ON SUCH PERMITS SHALL BE UNDERTAKEN UNTIL NECESSARY CONDITIONS ARE MET.
 - ANY DISCREPANCIES BETWEEN DRAWINGS AND SPECIFICATIONS AND/OR EXISTING CONDITIONS ARE TO BE REFERRED TO THE DESIGNER FOR INSTRUCTIONS BEFORE ANY WORK IS BEGUN.
 - CONTRACTOR SHALL ENSURE THAT AREAS NOT INCLUDED IN THIS CONTRACT ARE ADEQUATELY PROTECTED FROM DUST, DEBRIS, OR ANY OTHER DAMAGE RESULTING FROM WORK PERFORMED, AND THAT ANY CLEANING OR REPAIR REQUIRED IS PERFORMED WITHOUT COST TO OWNER.
 - CONTRACTOR SHALL ENSURE THAT ALL REFUSE IS REMOVED ON A DAILY BASIS AND THAT JOB SITE IS MAINTAINED IN AN ORDERLY AND SAFE CONDITION.
 - CONTRACTOR SHALL COORDINATE ACCESS TO SITE AND DELIVERY AND REMOVAL OF GOODS WITH LANDLORD.
 - ALL WORK SHALL BE SCHEDULED AND COORDINATED TO AVOID ANY CONFLICTS WITH OTHER TRADES DURING OR AFTER CONSTRUCTION.
 - PROVIDE TEMPORARY ELECTRICAL POWER FOR THE WORK OF THIS TRADE AND OTHER TRADES AS REQUIRED BY GENERAL CONTRACTOR OR OWNER.
- DEMO NOTES**
 - THE CONTRACTOR SHALL REPLACE OR REPAIR ANY ITEMS WHICH ARE DAMAGED DUE TO THIS WORK AT NO EXTRA COST TO THE BUILDING OWNER.
 - REMAINING REMOVED EQUIPMENT AND MATERIALS, UNLESS OTHERWISE NOTED, SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE SITE UPON COMPLETION OF THE WORK.
 - GENERAL CONTRACTOR SHALL REMOVE ALL NECESSARY CEILING TILES TO ALLOW DEMOLITION OF MECHANICAL AND ELECTRICAL SERVICES.
 - MECHANICAL & ELECTRICAL CONTRACTORS SHALL ASSIST THE GENERAL CONTRACTOR IN THE DEMOLITION WORK, BY CUTTING BACK MECHANICAL & ELECTRICAL SERVICES AS NEEDED FOR DEMOLITION WORK.
 - THE GENERAL CONTRACTOR IS RESPONSIBLE FOR MAKING GOOD ANY SURFACES OR FINISHES DAMAGED AS A RESULT OF DEMOLITION.

GENERAL NOTES:
 CONTRACTORS SHALL VERIFY AND BE RESPONSIBLE FOR ALL DIMENSIONS AND CONDITIONS ON THE JOB AND THE ENGINEER SHALL BE INFORMED OF ANY VARIATIONS FROM THE DIMENSIONS AND CONDITIONS SHOWN ON THE DRAWINGS. DO NOT SCALE DRAWINGS. SHOP DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL BEFORE PROCEEDING WITH FABRICATION. THIS DRAWING IS THE PROPERTY OF ALGAL ENGINEERING LTD AND SHALL NOT BE REPRODUCED WITHOUT THEIR PERMISSION AND UNLESS THE REPRODUCTION CARRIES THEIR NAME, ALL INFORMATION SHOWN ON THIS DRAWING IS FOR USE ON THE SPECIFIED PROJECT ONLY AND SHALL NOT BE USED OTHERWISE WITHOUT WRITTEN PERMISSION OF ALGAL ENGINEERING LTD

R01	RE-ISSUED FOR TENDER/PERMIT	2024-08-22
R00	ISSUED FOR TENDER	2024-07-31
RP4	ISSUED FOR 99% CLIENT REVIEW	2024-06-25
RP3	ISSUED FOR 66% CLIENT REVIEW	2024-05-15
RP2	ISSUED FOR 33% CLIENT REVIEW	2024-04-18
No	Revisions	Date

Orientation Seal

The Contractor shall check and verify all dimensions and report all errors and omissions to the IO-Owner's/MBS Designee (as applicable) for his/her written direction before proceeding with the Work.

A Detail No
 B Sheet No where detailed

Architectural

commercial • residential • retail
 eight selvapiano crescent
 vaughan ontario L4H0X2 canada
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Electrical

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 515 Consumers Road, Suite 100
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 T:416.484.0707 | F:416.849.0148 | E:algal@algal.ca

Infrastructure Ontario

Ministry PSF Number

Project
**OPP HEADQUARTER
 COMMANDER OFFICE
 RENOVATION**
 Location
**777 MEMORIAL AVENUE
 ORILLIA, ONTARIO**
 IO Project No Site No Building No
1103395-274117 N06689 B25370

Client
COLLIER PROJECT LEADERS

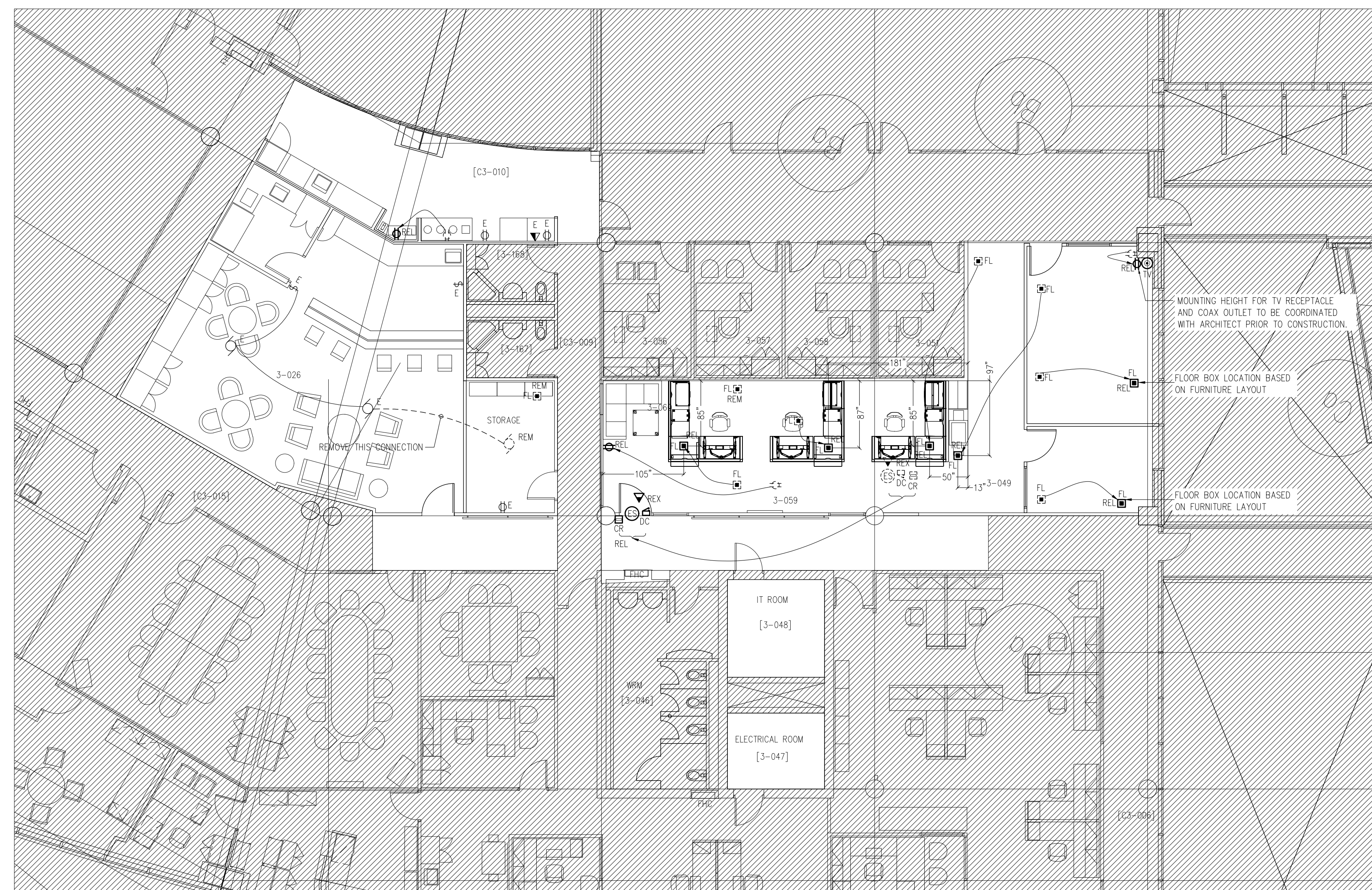
Drawing Title
**POWER/DATA/VOICE LAYOUT
 LEGEND, NOTES**

Scale AS NOTED	Date 2024-04-03
Drawn by B.W.	Substantial Performance Date TBD
Designed by A.E.	Drawing No AE-23301-DRAW-E004-R01
Approved by Floor No M.R. 3	of 4

CADD File Name: **AE-23301-DRAW-E001-E004-R01**

POWER & DATA NOTES

- GENERAL NOTES**
 - 1.1 THE CONTRACTOR SHALL VISIT THE SITE AND EXAMINE ALL DRAWINGS CAREFULLY TO DETERMINE THE EXTENT OF THE WORK IN THE EXISTING BUILDING. EXAMINE THE SITE AND DETERMINE AND INCLUDE IN THE TOTAL PRICE OF THE TOTAL COST OF LABOUR AND MATERIAL FOR ALL ITEMS AS SPECIFIED OR INDICATED ON THE DRAWINGS.
 - 1.2 NO ALLOWANCE WILL BE MADE FOR OBVIOUS CONSIDERATIONS WHICH MAY HAVE BEEN OVERLOOKED.
 - 1.3 THE WHOLE OF THE WORK SHALL BE CARRIED OUT AND PERFORMED IN A WORKMANLIKE MANNER TO THE SATISFACTION OF THE LANDLORD. ANY UNSATISFACTORY WORK SHALL BE REPLACED BY THIS DIVISION WITHOUT EXTRA COST TO THE OWNER.
 - 1.4 IN CASE EXTRA WORK OF ANY KIND IS REQUIRED, OBTAIN WRITTEN INSTRUCTIONS FROM THE CONSULTANT BEFORE PROCEEDING. PAYMENTS WILL BE MADE AT A FAIR AND REASONABLE RATE ONLY FOR AUTHORIZED EXTRAS. IN THE CASE OF OMISSIONS, THE SAME PROCEDURE SHALL APPLY AND A DECREASE MADE.
 - 1.5 WIRING, CONDUIT AND EQUIPMENT REQUIRED TO MAINTAIN SERVICE IN OTHER PARTS OF THE BUILDING SHALL BE TEMPORARILY SUPPORTED, REROUTED, SERVICED OR RELOCATED AS REQUIRED. OBSOLETE CONDUITS AND CABLES SHALL BE DISCONNECTED FROM THEIR SOURCE OF SUPPLY, CUT BACK AS FAR AS POSSIBLE, AND SHALL BE REMOVED.
 - 1.6 WORK PERFORMED SHALL BE IN CONFORMITY WITH ALL LAWS, BYLAWS, OR REGULATIONS OF THE MUNICIPAL, PROVINCIAL OR OTHER AUTHORITIES HAVING JURISDICTION. NOTHING CONTAINED IN THESE DRAWINGS SHALL BE CONSTRUED AS TO BE IN CONFLICT WITH ANY SUCH LAWS.
 - 1.7 THE CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY FOR ANY DISRUPTION TO THE EXISTING SERVICES. THE EXISTING BUILDING MUST BE KEPT IN OPERATION AT ALL TIMES. ARRANGE WORK IN SUCH A MANNER THAT INTERRUPTIONS IN SERVICES OCCUR ONLY AT SCHEDULED TIMES. UNAVOIDABLE INTERRUPTION SHALL BE SCHEDULED WITH THE LANDLORD AT LEAST 48 HOURS IN ADVANCE. OVERTIME WORK THAT MAY BE REQUIRED TO TIE-IN SERVICES AT NIGHT OR ON WEEKENDS SHALL BE INCLUDED IN THE TENDER AMOUNT.
 - 1.8 CONTRACTOR SHALL ENSURE THAT ALL REQUIRED PERMITS ARE OBTAINED. NO WORK WHICH IS CONDITIONAL ON SUCH PERMITS SHALL BE UNDERTAKEN UNTIL NECESSARY CONDITIONS ARE MET.
 - 1.9 ANY DISCREPANCIES BETWEEN DRAWINGS AND SPECIFICATIONS AND/OR EXISTING CONDITIONS ARE TO BE REFERRED TO THE CONSULTANT FOR INSTRUCTIONS BEFORE ANY WORK IS BEGUN.
 - 1.10 CONTRACTOR SHALL ENSURE THAT AREAS NOT INCLUDED IN THIS CONTRACT ARE ADEQUATELY PROTECTED FROM DUST, DEBRIS, OR ANY OTHER DAMAGE RESULTING FROM WORK PERFORMED, AND THAT ANY CLEANING OR REPAIR REQUIRED IS PERFORMED WITHOUT COST TO OWNER.
 - 1.11 CONTRACTOR SHALL ENSURE THAT ALL REFUSE IS REMOVED ON A DAILY BASIS AND THAT JOB SITE IS MAINTAINED IN AN ORDERLY AND SAFE CONDITION.
 - 1.12 CONTRACTOR SHALL COORDINATE ACCESS TO SITE AND DELIVERY AND REMOVAL OF GOODS WITH LANDLORD.
 - 1.13 ALL WORK SHALL BE SCHEDULED AND COORDINATED TO AVOID ANY CONFLICTS WITH OTHER TRADES DURING OR AFTER CONSTRUCTION.
 - 1.14 PROVIDE TEMPORARY ELECTRICAL POWER FOR THE WORK OF THIS TRADE AND OTHER TRADES AS REQUIRED BY GENERAL CONTRACTOR OR OWNER.
- POWER & DATA**
 - 2.1 RELOCATE EXISTING DUPLEX RECEPTACLE TO INDICATED LOCATION. EXTEND THE WIRING AND CONDUIT TO NEW LOCATION.
 - 2.2 RELOCATE EXISTING FLOOR BOX C/W 4x ISOLATED GROUND RECEPTACLE, 4x 5-15R RECEPTACLE, ONE DATA OUTLET & ONE VOICE OUTLET TO INDICATED LOCATION. EXTEND THE WIRING, DATA CABLES & VOICE CABLE C/W EMT CONDUIT. PROVIDE NEW DATA & VOICE CABLE WHERE SPlicing IS NOT POSSIBLE.
 - 2.3 ELECTRICAL ROOM LOCATED ON 3RD FLOOR ROOM "3-047" & IT ROOM IS "3-048"
 - 2.4 RELOCATE EXISTING CARD READER, DOOR CONTACT, ELECTRICAL STRIKE, HX ETC. TO INDICATED LOCATION C/W ALL WIRING, CONDUIT AND ALL REQUIRED ACCESSORIES.
 - 2.5 MODIFY EXISTING FAN CONTROLLER FOR THE EXISTING FANS IN ROOM "3-026". REFER TO MECHANICAL DRAWINGS FOR MORE CLARIFICATION.
 - 2.6 PROVIDE A SEPARATE NEUTRAL AND A SEPARATE GROUND WIRE FOR EACH ISOLATED GROUND CIRCUIT.
 - 2.7 PROVIDE SEPARATE NEUTRAL WIRE FOR EACH DEDICATED CIRCUIT.
 - 2.8 TO PREVENT SOUND TRANSFER, STAGGER OUTLETS AN EITHER SIDE OF A PARTITION, DO NOT LOCATE BACK TO BACK.
 - 2.9 ALL EQUIPMENT TO BE LABELED
 - 2.10 ENSURE THAT ALL OUTLETS ARE ACTIVE UPON COMPLETION OF THE PROJECT.
 - 2.11 COLOUR OF ALL ISOLATED GROUND OUTLETS TO BE ORANGE.
 - 2.12 ALL DIMENSIONS TO BE VERIFIED ON SITE BEFORE ANY WORK IS BEGUN.
 - 2.13 CONTRACTOR IS REQUIRED TO PROVIDE CONDUIT AND PULL STRINGS FOR ALL VOICE AND DATA OUTLETS AS INDICATED AND RELOCATED ON THE PLAN.
 - 2.14 SUPPLY AND INSTALL ALL NECESSARY ANCHORS, HANGERS, JUNCTION BOX AND FITTINGS TO COMPLETE THIS WORK. ALLOW FOR CEILING TILE REMOVAL TO ALLOW COMPLETION OF THE NEW INSTALLATION.
 - 2.15 CONTRACTOR TO MARK AS SPARE ALL CIRCUIT BREAKERS WHICH STARED TO BE AVAILABLE AFTER THE DEMOLITION OF EXISTING RECEPTABLES CIRCUITS.
 - 2.16 ELECTRICAL TRADE IS TO ENSURE THAT ELECTRICAL CONNECTIONS FOR OFFICES AND ANY EQUIPMENT MEET ALL EQUIPMENT SPECIFICATIONS.
 - 2.17 THE GENERAL CONTRACTOR IS RESPONSIBLE FOR MAKING GOOD ANY SURFACES OR FINISHES DAMAGED AS A RESULT OF ALTERATIONS.
 - 2.18 ALL DATA CABLE TO BE CAT 6. TERMINATE ALL DATA CABLE TO EXISTING DATA RACK IN ROOM "3-048" SERVER ROOM. CERTIFY ALL DATA CABLES.
 - 2.19 PATCH, PAINT AND REPAIR THE WALL AFTER CONSTRUCTION.
 - 2.20 PROVIDE TV OUTLET C/W COAX LINE & EMT CONDUIT. CONNECT COAX LINE TO ROGERS PORT LOCATED IN IT ROOM 3-048 & ELECTRICAL ROOM 3-047. INCLUDE IN BID PRICE TO INVOLVE ROGERS TO COMPLETE THIS WORK. PROVIDE ALL REQUIRED WIRING, EMT CONDUIT AND ACCESSORIES.
 - 2.21 PROVIDE SEPARATE PRICE TO PROVIDE NEW FLOOR BOXES C/W WIRING, CONDUIT, 4x ISOLATED GROUND RECEPTACLE, 4x 5-15R RECEPTACLE, ONE DATA OUTLET & ONE VOICE OUTLET IF EXISTING FLOOR BOXES CAN NOT BE RELOCATED.
 - 2.22 INCLUDE IN BID PRICE TO PROVIDE ONE NEW DATA DROP & ONE NEW VOICE DROP IN EXISTING FLOOR BOX C/W ALL REQUIRED WIRING AND CONDUIT. PROVIDE NEW PATCH PANEL & ALL REQUIRED ACCESSORIES AND WIRINGS AS REQUIRED.



1 POWER/DATA/VOICE LAYOUT
E004 SCALE: 1/8"=1'-0"

LEGEND	
POWER/DATA/VOICE	
SYMBOL	DESCRIPTION
⊕	WALL MOUNTED DUPLEX RECEPTACLE
FL ■	FLOOR BOX ON THE RAISED FLOOR FLOOR BOX CONSISTING OF: 4x ISOLATED GROUND RECEPTACLE 4x 5-15R RECEPTACLE ONE DATA & ONE VOICE
⊙	EXHAUST FAN
\$	FAN SWITCH
⊙ TV	TV OUTLET C/W COAX CABLES
SECURITY SYSTEM	
▲ REX	REQUEST FOR EXIT MOTION DETECTOR
■ CR	CARD READER
■ DC	DOOR CONTACT
⊙	DOOR ELECTRIC STRIKE
ABBREVIATIONS	
E	EXISTING TO REMAIN
N	DENOTES NEW
REL	EXISTING IN RELOCATED POSITION
REM	EXISTING TO BE REMOVED