

GENERAL REQUIREMENTS

- .1 CONFORM TO THE REQUIREMENTS OF DIVISION 1 AS APPLICABLE.

DEFINITIONS

- .1 DEFINITIONS:
.2 ULC – UNDERWRITERS LABORATORIES OF CANADA
.3 EMT – ELECTRICAL METALLIC TUBING
.4 CSA – CANADIAN STANDARDS ASSOC.
.5 AWG – AMERICAN WIRE GAUGE

CODES AND STANDARDS

- .1 DO COMPLETE INSTALLATION IN ACCORDANCE WITH CSA C22.1.
.2 ABBREVIATIONS FOR ELECTRICAL TERMS: TO CSA 285.

ADDENDA AND REVISIONS

- .1 ALL ADDENDA, INSTRUCTIONS AND REVISIONS ISSUED DURING THE TENDERING PERIOD SHALL BECOME PART OF THE CONTRACT DOCUMENTS AND SHALL BE INCLUDED IN THE TENDER, AND SHALL TAKE PRECEDENCE OVER PREVIOUS INSTRUCTIONS.
.2 THE OWNER AND ENGINEER RESERVE THE RIGHT TO MAKE REVISIONS TO THE DRAWINGS DURING THE PERIOD OF CONSTRUCTION AND THESE REVISIONS SHALL TAKE PRECEDENCE OVER PREVIOUSLY ISSUED DRAWINGS. ALL REVISIONS TO WORK SHALL BE EXECUTED BY DULY AUTHORIZED CHANGE ORDERS WITH THE AMOUNT OF ADDITION OR DEDUCTION TO THE CONTRACT AMOUNT APPROVED BY THE OWNER BEFORE THE EXECUTION OF ANY WORK ENTAILED IN THE REVISIONS.

SUBSTITUTIONS

- .1 IT IS THE INTENT OF THESE DRAWINGS TO ESTABLISH THE REQUIRED QUALITY OF MATERIALS, WHERE MANUFACTURERS NAMES OR CATALOGUE REFERENCES ARE USED, IT IS DONE IN ORDER TO ESTABLISH THE REQUIRED QUALITY, STYLE, SIZE OR FUNCTION. PRODUCTS OF OTHER MANUFACTURERS WILL NOT BE PERMITTED AFTER THE SIGNING OF THE CONTRACT. THE DECISION AS TO SUITABILITY SHALL REST WITH THE ENGINEER.
.2 SHOULD THE CONTRACTOR PROPOSE TO FURNISH MATERIAL AND EQUIPMENT OTHER THAN THOSE SPECIFIED, HE SHALL SUBMIT A WRITTEN REQUEST FOR ANY OR ALL SUBSTITUTIONS 10 DAYS PRIOR TO THE TENDER CLOSING DATE. SUCH A REQUEST SHALL BE ACCOMPANIED BY A COMPLETE DESCRIPTION INCLUDING MANUFACTURER, BRAND NAME, CATALOGUE NUMBER, AND TECHNICAL DATA FOR ALL ITEMS. IF REQUESTED BY THE ENGINEER, THE CONTRACTOR SHALL SUBMIT FOR INSPECTION A SAMPLE OF THE PROPOSED ITEM.
.3 ALL MATERIAL NOT MEETING THE STANDARDS AS SET DOWN BY THESE SPECIFICATIONS SHALL NOT BE ALLOWED ON THE JOB SITE.
.4 SUBSTITUTIONS AFFECTING THE DESIGN WILL NOT BE PERMITTED. ADDITIONAL COSTS TO ANY OTHER TRADE AS A RESULT OF A CHANGE OR SUBSTITUTION BY THIS CONTRACTOR, SHALL BE BORNE BY THIS CONTRACTOR.
.5 THE LISTING OF A MANUFACTURER AS ACCEPTABLE DOES NOT IMPLY ACCEPTANCE OF ALL PRODUCTS OF THAT MANUFACTURER AND ONLY PRODUCTS MEETING THE STANDARDS AS SET OUT IN THE SPECIFICATIONS WILL BE ACCEPTED.

EXTENT OF WORK

- .1 THE ELECTRICAL CONTRACTOR SHALL FURNISH ALL LABOUR, MATERIALS, TOOLS, APPLIANCES AND EQUIPMENT TO ENTIRELY COMPLETE AND PROVIDE FOR THE OPERATION OF THE ELECTRICAL SYSTEMS.
.2 THE OVERALL INTENTION IS TO PROVIDE FOR A FINISHED PIECE OF WORK COMPLETE IN ALL ASPECTS, AND ALL ITEMS REASONABLY INFERRABLE AS CALLED FOR BY THE PLANS AND SPECIFICATIONS, AND BY NORMALLY ACCEPTED GOOD PRACTICE, NOTWITHSTANDING THAT EVERY ITEM NECESSARILY REQUIRED MAY NOT BE PARTICULARLY MENTIONED. THIS CONTRACTOR SHALL FULFILL HIS OBLIGATION AND NOT TAKE ADVANTAGE OF ANY UNINTENTIONAL ERRORS OR OMISSIONS SHOULD SUCH EXIST, TO THE DETRIMENT OF THE OWNER'S INTEREST. THE WORK SHALL INCLUDE BUT NOT BE LIMITED TO:
.1 POWER DISTRIBUTION
.2 BRANCH CIRCUIT WIRING
.3 POWER WIRING AND CONNECTION TO EQUIPMENT SUPPLIED UNDER OTHER DIVISIONS AND BY OWNER.
.4 REMOVALS AND RELOCATIONS
.5 LIGHTING
.6 ALL CUTTING, PATCHING AND PAINTING
.9 REPAIR ALL LANDSCAPING DAMAGE DURING CONSTRUCTION

EXTRAS AND OMISSIONS

- .1 FOR WORK BEYOND THE SCOPE OF THIS CONTRACT, SUBMIT A QUOTATION WITH A BREAKDOWN OF MATERIAL, LABOUR, AND MARKUPS, AND OBTAIN A WRITTEN ORDER FROM THE GENERAL CONTRACTOR BEFORE PROCEEDING.
.2 ALL QUOTATIONS FOR EXTRAS ARE TO BE APPROVED BY THE OWNER.

ELECTRICAL DRAWINGS

- .1 THE DRAWINGS CONSTITUTE AN INTEGRAL PART OF THIS CONTRACT SHALL SERVE AS WORKING DRAWINGS. THEY INDICATE THE GENERAL LAYOUT OF THE COMPLETE ELECTRICAL SYSTEM; ARRANGEMENTS OF FEEDERS, CIRCUITS, OUTLETS, SWITCHES, CONTROLS, PANELBOARDS, SERVICE EQUIPMENT, COMMUNICATIONS, UNDERGROUND DUCT BANKS, OVERHEAD POLE LINES, POWER CENTERS, ETC..
.2 FIELD VERIFICATION OF SCALE DIMENSIONS ON PLANS IS DIRECTED SINCE ACTUAL LOCATIONS, DISTANCES, AND LEVELS WILL BE GOVERNED BY THE FIELD CONDITIONS.
.3 ALL DISCREPANCIES RELATED TO THE ELECTRICAL WORK SHALL BE PROMPTLY BROUGHT TO THE ATTENTION OF THE ENGINEER FOR CLARIFICATION.

EXAMINATION OF DRAWINGS AND EXISTING CONDITIONS

- .1 THE ELECTRICAL CONTRACTOR SHALL BECOME COMPLETELY FAMILIAR WITH THE DRAWINGS AND SPECIFICATIONS, AS WELL AS CONSTRUCTION METHODS OF OTHER TRADES RELATED TO HIS WORK TO AVOID POSSIBLE CONFLICTIONS ON THE PROJECT. SHOULD DRASTIC CHANGES BE NECESSARY TO RESOLVE SUCH CONFLICTIONS, THIS CONTRACTOR SHALL NOTIFY THE ENGINEER AND SECURE WRITTEN APPROVAL AND AGREEMENT ON NECESSARY ADJUSTMENTS BEFORE THE INSTALLATION IS STARTED.
.2 BEFORE SUBMITTING HIS TENDER, THIS CONTRACTOR SHALL VISIT THE SITE AND BECOME FAMILIAR WITH SITE CONDITIONS, AVAILABILITY OF STORAGE SPACE AND ALL OTHER FACTORS THAT MIGHT INFLUENCE HIS TENDER.
.3 THE CONTRACTOR SHALL DETERMINE ALL WORKING CONDITIONS AND RIGIDLY COMPLY. CONDITIONS REQUIRING SPECIAL CONSIDERATION INCLUDE BUT NOT BE LIMITED TO:
.1 DUST.
.2 NOISE.
.3 VIBRATION.
.4 WATER.
.5 USE OF POWDER ACTUATED TOOLS.
.6 WORKING HOURS.
.7 ACCESS TO WORKING LOCATIONS.
.8 CONTINUITY OF POWER.
.9 PROJECT SCHEDULE.
.10 PHYSICAL PROTECTION OF OWNER'S FACILITY AND EQUIPMENT.
.4 NO EXTRAS WILL BE ALLOWED DUE TO FAILURE TO TAKE SITE CONDITIONS INTO CONSIDERATION.
.5 THE EXACT ROUGHING-IN DIMENSIONS AND CONNECTION POINTS SHALL BE DETERMINED FROM SHOP DRAWINGS, EQUIPMENT DRAWINGS, AND ON-SITE MEASUREMENTS.

DISCREPANCIES

- .1 BIDDERS IN PREPARING THEIR TENDERS, FINDING ANY ERRORS, OMISSIONS, OR DISCREPANCIES IN THE PLANS, SPECIFICATIONS OR OTHER DOCUMENTS, OR HAVING ANY DOUBT IN THE INTENT OR MEANING OF ANY PART THEREOF, SHALL IMMEDIATELY NOTIFY THE ENGINEER, WHO WILL SEND WRITTEN INSTRUCTIONS OR CLARIFICATION TO ALL BIDDERS. WHERE SUCH DISCREPANCIES EXIST AND IT IS EVIDENT THAT THIS CONTRACTOR COULD NOT HAVE PROPERLY TENDERED WITHOUT CLARIFICATION AND WHERE SUCH CLARIFICATION WAS NOT REQUESTED, NO EXTRA TO THE CONTRACT WILL BE CONSIDERED IN ORDER TO HAVE THE INSTALLATION PROPERLY MADE. THE OWNER AND ENGINEER WILL NOT BE RESPONSIBLE FOR ORAL INSTRUCTION.

SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

- .1 SUBMIT SHOP DRAWINGS, PRODUCT DATA AND SAMPLES IN ACCORDANCE WITH ARCHITECTURAL DIVISION.
.2 REVIEW AND SIGN SHOP DRAWINGS PRIOR TO SUBMISSION AND VERIFY INFORMATION REQUIRED FOR INSTALLATION, EVALUATION AND IDENTIFICATION.
.3 INDICATE DETAILS OF CONSTRUCTION, DIMENSIONS, CAPACITIES, WEIGHTS AND ELECTRICAL PERFORMANCE CHARACTERISTICS OF EQUIPMENT OR MATERIAL.
.4 WHERE APPLICABLE, INCLUDE WIRING, SINGLE LINE AND SCHEMATIC DIAGRAMS.
.5 INCLUDE WIRING DRAWINGS OR DIAGRAMS SHOWING INTERCONNECTION WITH WORK OF OTHER SECTIONS OR DIVISIONS.
.6 THE REVIEW OF SHOP DRAWINGS IS FOR THE SOLE PURPOSE OF ASCERTAINING CONFORMANCE WITH THE DESIGN CONCEPTS. THIS REVIEW SHALL NOT IMPLY THAT THE ENGINEER APPROVES THE DETAIL DESIGN INHERENT IN THE SHOP DRAWINGS, RESPONSIBILITY FOR WHICH SHALL REMAIN WITH THE CONTRACTOR SUBMITTING THE SHOP DRAWINGS, AND THE REVIEW SHALL NOT RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITY FOR ERRORS OR OMISSIONS IN THE SHOP DRAWINGS OR OF HIS RESPONSIBILITY FOR MEETING ALL REQUIREMENTS OF THE CONSTRUCTION AND CONTRACT DOCUMENTS. THE CONTRACTOR IS RESPONSIBLE FOR DIMENSIONS TO BE CONFIRMED AND CORRELATED AT THE JOB SITE, FOR INFORMATION THAT PERTAINS SOLELY TO FABRICATION PROCESSES OR TECHNIQUES OF CONSTRUCTION AND INSTALLATION, AND FOR CO-ORDINATION OF THE WORK OF ALL SUB-TRADES.
.7 ALL SHOP DRAWINGS SUBMITTED SHALL BE CONSIDERED TO HAVE THE ABOVE PARAGRAPH AFFIXED TO EACH ONE.

OPERATION AND MAINTENANCE DATA

- .1 PROVIDE OPERATION AND MAINTENANCE DATA FOR INCORPORATION INTO OPERATION AND MAINTENANCE MANUAL.
.2 INCLUDE IN OPERATION AND MAINTENANCE DATA:
.1 DETAILS OF DESIGN ELEMENTS, CONSTRUCTION FEATURES, COMPONENT FUNCTION AND MAINTENANCE REQUIREMENTS, TO PERMIT EFFECTIVE START-UP, OPERATION, MAINTENANCE, REPAIR, MODIFICATION, EXTENSION AND EXPANSION OF ANY PORTION OR FEATURE OF INSTALLATION.
.2 TECHNICAL DATA, PRODUCT DATA, SUPPLEMENTED BY BULLETINS, COMPONENT ILLUSTRATIONS, EXPLODED VIEWS, TECHNICAL DESCRIPTIONS OF ITEMS, AND PARTS LISTS. ADVERTISING OR SALES LITERATURE NOT ACCEPTABLE.
.3 WIRING AND SCHEMATIC DIAGRAMS AND PERFORMANCE CURVES.
.4 NAMES AND ADDRESSES AND PHONE NUMBERS OF LOCAL SUPPLIERS FOR ITEMS INCLUDED IN MAINTENANCE MANUAL.
.5 COPY OF REVIEWED SHOP DRAWINGS.
.6 NAMES AND ADDRESSES AND PHONE NUMBERS OF ELECTRICAL CONTRACTORS.
.7 WARRANTIES.
.8 INSPECTION CERTIFICATES AND VERIFICATION REPORTS.

VOLTAGE RATINGS

- .1 OPERATING VOLTAGES: TO CAN3-C235.
.2 MOTORS, ELECTRIC HEATING, CONTROL AND DISTRIBUTION DEVICES AND EQUIPMENT TO OPERATE SATISFACTORILY AT 60 HZ WITHIN NORMAL OPERATING LIMITS ESTABLISHED BY ABOVE STANDARD. EQUIPMENT TO OPERATE IN EXTREME OPERATING CONDITIONS ESTABLISHED IN ABOVE STANDARD WITHOUT DAMAGE TO EQUIPMENT.

PERMITS, FEES AND INSPECTION

- .1 SUBMIT TO ELECTRICAL INSPECTION DEPARTMENT AND SUPPLY AUTHORITY NECESSARY NUMBER OF DRAWINGS AND SPECIFICATIONS FOR EXAMINATION AND APPROVAL PRIOR TO COMMENCEMENT OF WORK.
.2 PAY ASSOCIATED FEES.
.3 NOTIFY ENGINEER OF CHANGES REQUIRED BY ELECTRICAL INSPECTION DEPARTMENT PRIOR TO MAKING CHANGES.
.4 FURNISH CERTIFICATES OF ACCEPTANCE FROM AUTHORITIES HAVING JURISDICTION ON COMPLETION OF WORK.

MATERIALS AND EQUIPMENT

- .1 PROVIDE MATERIALS AND EQUIPMENT.
.2 EQUIPMENT AND MATERIAL TO BE CSA CERTIFIED. WHERE THERE IS NO ALTERNATIVE TO SUPPLYING EQUIPMENT WHICH IS NOT CSA CERTIFIED, OBTAIN SPECIAL APPROVAL FROM ELECTRICAL INSPECTION DEPARTMENT.
.3 FACTORY ASSEMBLE CONTROL PANELS AND COMPONENT ASSEMBLIES.

FINISHES

- .1 SHOP FINISH METAL ENCLOSURE SURFACES BY APPLICATION OF RUST RESISTANT PRIMER INSIDE AND OUTSIDE, AND AT LEAST TWO COATS OF FINISH ENAMEL.
.2 PAINT INDOOR SWITCHGEAR AND DISTRIBUTION ENCLOSURES LIGHT GREY TO EEMAC 2Y-1-1958.
.3 CLEAN AND TOUCH UP SURFACES OF SHOP-PAINTED EQUIPMENT SCRATCHED OR MARRED DURING SHIPMENT OR INSTALLATION, TO MATCH ORIGINAL PAINT.
.4 CLEAN AND PRIME EXPOSED NON-GALVANIZED HANGERS, RACKS AND FASTENINGS TO PREVENT RUSTING.

EQUIPMENT IDENTIFICATION

- .1 IDENTIFY ELECTRICAL EQUIPMENT WITH LABELS AS FOLLOWS:
.2 LAMICOID LABELS, 3 MM THICK PLASTIC ENGRAVING SHEET, WHITE FACE, BLACK CORE.
.3 LABEL SIZES
.1 SIZE 1,10 X 50 MM, 1 LINE, 3 MM HIGH LETTERS
.2 SIZE 2,12 X 70 MM, 1 LINE, 5 MM HIGH LETTERS
.3 SIZE 3,12 X 70 MM, 2 LINE, 5 MM HIGH LETTERS
.4 SIZE 4,20 X 90 MM, 1 LINE, 8 MM HIGH LETTERS
.5 SIZE 5,20 X 90 MM, 2 LINE, 5 MM HIGH LETTERS
.6 SIZE 6,25 X 100 MM, 1 LINE, 12 MM HIGH LETTERS
.7 SIZE 7,25 X 100 MM, 2 LINE, 6 MM HIGH LETTERS
.4 LABELS
.1 EMBOSSED PLASTIC LABELS WITH 6 MM HIGH LETTERS UNLESS SPECIFIED OTHERWISE.
.5 WORDING ON LABELS TO BE APPROVED BY ENGINEER PRIOR TO MANUFACTURE.
.6 ALLOW FOR AVERAGE OF TWENTY-FIVE (25) LETTERS PER LABEL.
.7 LABELS FOR TERMINAL CABINETS AND JUNCTION BOXES TO INDICATE SYSTEM AND/OR VOLTAGE CHARACTERISTICS.
.8 DISCONNECTS, STARTERS AND CONTACTORS: INDICATE EQUIPMENT BEING CONTROLLED AND VOLTAGE.
.9 TERMINAL CABINETS AND PULL BOXES: INDICATE SYSTEM AND VOLTAGE.
.10 PANELBOARDS: INDICATE PANEL NAME.

WIRING IDENTIFICATION

- .1 IDENTIFY WIRING WITH PERMANENT INDELIBLE IDENTIFYING MARKINGS, EITHER NUMBERED OR COLOURED PLASTIC TAPES, ON BOTH ENDS OF PHASE CONDUCTORS OF FEEDERS AND BRANCH CIRCUIT WIRING.
.2 MAINTAIN PHASE SEQUENCE AND COLOUR CODING THROUGHOUT.
.3 COLOUR CODE: TO CSA C22.1.
.4 USE COLOUR CODED WIRES IN COMMUNICATION CABLES, MATCHED THROUGHOUT SYSTEM.

CONDUIT AND CABLE IDENTIFICATION

- .1 COLOUR CODE CONDUITS, BOXES AND METALLIC SHEATHED CABLES.
.2 CODE WITH PLASTIC TAPE OR PAINT AT POINTS WHERE CONDUIT OR CABLE ENTERS WALL, CEILING, OR FLOOR, AND AT 15M INTERVALS.
.3 COLOURS: 25MM WIDE PRIME COLOUR AND 20MM WIDE AUXILIARY COLOUR.
.1 UP TO 250 V: YELLOW
.2 TELEPHONE: GREEN
.3 OTHER COMMUNICATION SYSTEMS: GREEN/BLUE

WIRING TERMINATIONS

- .1 LUGS, TERMINALS, SCREWS USED FOR TERMINATION OF WIRING TO BE SUITABLE FOR COPPER CONDUCTORS.

MANUFACTURERS AND CSA LABELS

- .1 VISIBLE AND LEGIBLE AFTER EQUIPMENT IS INSTALLED.

WARNING SIGNS

- .1 AS SPECIFIED AND TO MEET REQUIREMENTS OF ELECTRICAL INSPECTION DEPARTMENT AND ENGINEER.
.2 DECAL SIGNS, MINIMUM SIZE 175MM X 175MM.

LOCATION OF EQUIPMENT

- .1 LOCATE OUTLETS IN ACCORDANCE WITH REQUIREMENTS OF ARCHITECTURAL DIVISION.
.2 DO NOT INSTALL OUTLETS BACK-TO-BACK IN WALL; ALLOW MINIMUM 150MM HORIZONTAL CLEARANCE BETWEEN BOXES.
.3 CHANGE LOCATION OF OUTLETS AT NO EXTRA COST OR CREDIT, PROVIDING DISTANCE DOES NOT EXCEED 3M AND INFORMATION IS GIVEN BEFORE INSTALLATION.
.4 LOCATE LIGHT SWITCHES ON LATCH SIDE OF DOORS. LOCATE DISCONNECT DEVICES IN MECHANICAL AND ELEVATOR MACHINE ROOMS ON LATCH SIDE OF DOOR.
.5 WHEN REQUIRED BY THE ENGINEER OR OWNER, RELOCATE EQUIPMENT UP TO A DISTANCE OF 3 METERS WITHOUT ADDITIONAL CHARGE, PROVIDING THAT THE EQUIPMENT HAS NOT ALREADY BEEN INSTALLED.

MOUNTING HEIGHTS

- .1 MOUNTING HEIGHT OF EQUIPMENT IS FROM FINISHED FLOOR TO CENTRELIN E OF EQUIPMENT UNLESS SPECIFIED OR INDICATED OTHERWISE.
.2 IF MOUNTING HEIGHT OF EQUIPMENT IS NOT SPECIFIED OR INDICATED, VERIFY BEFORE PROCEEDING WITH INSTALLATION.
.3 INSTALL ELECTRICAL EQUIPMENT AT FOLLOWING HEIGHTS UNLESS INDICATED OTHERWISE.
.1 LOCAL SWITCHES: 1400MM
.2 WALL RECEPTACLES:
GENERAL: 300MM
.2 ABOVE TOP OF COUNTERS OR COUNTER SPLASH BACKS: 175MM
.3 PANELBOARDS: AS REQUIRED BY CODE.
.4 TELEPHONE AND INTERPHONE OUTLETS: 300MM

FIELD QUALITY CONTROL

- .1 CONDUCT AND PAY FOR FOLLOWING TESTS:
.1 POWER DISTRIBUTION SYSTEM INCLUDING PHASING, VOLTAGE, GROUNDING AND LOAD BALANCING.
.2 CIRCUITS ORIGINATING FROM BRANCH DISTRIBUTION PANELS.
.3 LIGHTING AND ITS CONTROL.
.4 APPLICABLE.
.2 FURNISH MANUFACTURER'S CERTIFICATE OR LETTER CONFIRMING THAT ENTIRE INSTALLATION AS IT PERTAINS TO EACH SYSTEM HAS BEEN INSTALLED TO MANUFACTURER'S INSTRUCTIONS.
.3 INSULATION RESISTANCE TESTING.
.1 MEGGER CIRCUITS, FEEDERS AND EQUIPMENT UP TO 350 V WITH A 500 V INSTRUMENT.
.2 MEGGER 350-600 V CIRCUITS, FEEDERS AND EQUIPMENT WITH A 1000 V INSTRUMENT.
.3 CHECK RESISTANCE TO GROUND BEFORE ENERGIZING.
.4 CARRY OUT TESTS IN PRESENCE OF ENGINEER UNLESS ADVISED OTHERWISE.
.5 PROVIDE INSTRUMENTS, METERS, EQUIPMENT AND PERSONNEL REQUIRED TO CONDUCT TESTS DURING AND AT CONCLUSION OF PROJECT.
.6 SUBMIT TEST RESULTS FOR ENGINEER'S REVIEW.

CO-ORDINATION OF PROTECTIVE DEVICES

- .1 ENSURE CIRCUIT PROTECTIVE DEVICES SUCH AS OVERCURRENT TRIPS, RELAYS AND FUSES ARE INSTALLED TO REQUIRED VALUES AND SETTINGS.

TEMPORARY POWER

- .1 PROVIDE TEMPORARY POWER FOR THE WORK OF ALL TRADES AS REQUIRED BY THE GENERAL CONTRACTOR FOR CONSTRUCTION.

CO-ORDINATION WITH OTHERS

- .1 CO-ORDINATE INTERRUPTIONS OF ELECTRICAL SERVICES AND INSTALLATION OF EQUIPMENT TO MINIMIZE INCONVENIENCE TO OWNER.
.2 WORK BY OTHER CONTRACTORS WILL BE DONE CONCURRENTLY WITH WORK IN THIS CONTRACT. THIS CONTRACTOR SHALL SCHEDULE AND ARRANGE HIS WORK AND STORE HIS MATERIAL IN CO-OPERATION AND SO AS TO AVOID INTERFERENCE WITH OTHERS.

CLEANING

- .1 REMOVE DEBRIS AND WASTE MATERIAL ON A DAILY BASIS.
.2 AT THE COMPLETION OF THE PROJECT, REMOVE ALL GREASE, DUST, LABELS, FINGERPRINTS, ETC. FROM EQUIPMENT AND LEAVE IN NEW CONDITION.

RECORD DRAWINGS

- .1 TWO SETS OF WHITE PRINTS SHALL BE MAINTAINED FOR THE EXCLUSIVE PURPOSE OF RECORDING DEVIATIONS FROM THAT SHOWN ON THE CONTRACT DRAWINGS. ONE SET SHALL BE KEPT UP TO DATE AT ALL TIMES. AT THE COMPLETION OF THE PROJECT, THE INFORMATION SHALL BE TRANSFERRED TO THE SECOND SET OF DRAWINGS AND TO A SET OF REPRODUCIBLE DRAWINGS, BOTH SHALL BE TURNED OVER TO THE OWNER.

CUTTING

- .1 THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CUTTING REQUIRED TO COMPLETE THE WORK SHOWN ON THE DRAWINGS AND DESCRIBED HEREIN.
.2 ALL HOLES THROUGH CONCRETE OR MASONRY SHALL BE MADE BY CORE DRILLING. CARE MUST BE TAKEN TO CONTAIN DUST AND DEBRIS.
.3 SEAL ALL HOLES AND OPENINGS USING A NON-SHRINK, FIRE PROOF COMPOUND.

PATCHING AND PAINTING

- .1 THE CONTRACTOR SHALL NEATLY PATCH ALL SURFACES CUT OR DAMAGED AS A RESULT OF THIS CONTRACT.
.2 THE PATCHING SHALL BE OF MATCHING MATERIAL OR AS SPECIFIED HEREIN AND CARRIED OUT BY TRADESMEN TRAINED AND SKILLED IN THE WORK TO BE DONE.
.3 PAINTING OF A PATCHED AREA WILL BE REQUIRED. THE PAINTED AREA SHALL MATCH AS NEAR AS POSSIBLE THE EXISTING PAINT.
.4 ALL PATCHING, PAINTING AND SEALING SHALL BE TO THE SATISFACTION OF THE ENGINEER OWNER.
.5 THE CONTRACTOR SHALL NEATLY PAINT ALL SURFACES LEFT EXPOSED OR PATCHED AS A RESULT OF THIS CONTRACT.

GUARANTEE

- .1 GUARANTEE MATERIAL AND WORKMANSHIP TO BE FREE FROM DEFECT FOR A PERIOD OF ONE YEAR, OR LONGER WHERE SPECIFIED OTHERWISE, AFTER THE ISSUING OF THE CERTIFICATE OF SUBSTANTIAL COMPLETION.
.2 MAKE GOOD, AT THE OWNER'S CONVENIENCE, ALL DEFECTS COVERED BY THIS GUARANTEE WITHOUT ADDITIONAL COST TO THE OWNER.

GENERAL

DRAWINGS

- .1 DRAWINGS DO NOT INDICATE ALL CONDUIT RUNS.

SHOP DRAWINGS

- .1 SUBMIT SHOP DRAWINGS FOR PANEL BOARDS, BREAKERS, WIRING DEVICES.

PRODUCTS

CONDUITS

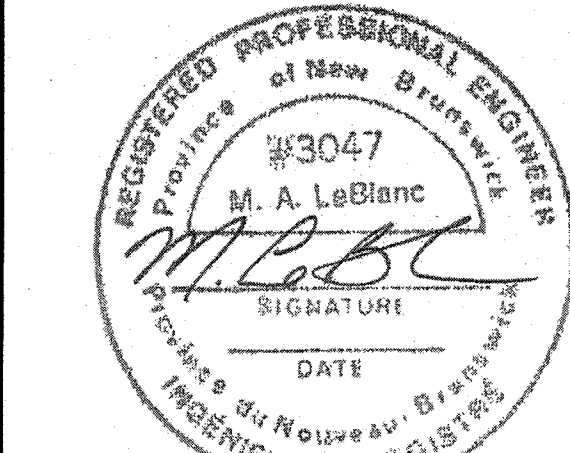
- .1 THE DRAWINGS DO NOT INDICATE CONDUIT RUNS. THOSE INDICATED ARE IN DIAGRAMMATIC FORM ONLY.
.2 USE RIGID STEEL CONDUIT WITH THREADED COUPLINGS AND CONNECTORS..
.3 FLEXIBLE STEEL CONDUIT AND LIQUID-TIGHT FLEXIBLE METAL CONDUIT.
.4 ONE HOLE STEEL STRAPS TO SECURE SURFACE CONDUITS 50 MM AND SMALLER. TWO HOLE STEEL STRAPS FOR CONDUITS LARGER THAN 50MM.
.5 BEAM CLAMPS TO SECURE CONDUITS TO EXPOSED STEEL WORK.
.6 CHANNEL TYPE SUPPORTS FOR TWO OR MORE CONDUITS.
.7 3MM DIA THREADED RODS TO SUPPORT SUSPENDED CHANNELS.
.8 FACTORY "ELLS" WHERE 90 DEG BENDS ARE REQUIRED FOR 25MM AND LARGER CONDUITS.
.9 POLYPROPYLENE.
.10 PVC IS NOT PERMITTED WITHIN THE BUILDING.

BUILDING WIRES

- .1 CONDUCTORS: STRANDED FOR 10 AWG AND LARGER. MINIMUM SIZE: 12 AWG.
.2 COPPER CONDUCTORS: SIZE AS INDICATED, WITH 600 V INSULATION OF CHEMICALLY CROSS-LINKED THERMOSETTING POLYETHYLENE MATERIAL RATED AC90.
.3 BRANCH WIRING SHALL BE #12 UP TO 20M IN LENGTH MAXIMUM. ANY LENGTH GREATER THAN 20M AND LESS THAN 36M SHALL BE #10. ANY LENGTH GREATER THAN 36M SHALL BE SIZED TO SUIT EQUIPMENT LOAD AND VOLTAGE DROP.

PULL, OUTLET AND JUNCTION BOXES

- .1 PROVIDE ALL NECESSARY PULL AND JUNCTION BOXES, SIZED TO ACCEPT CONDUITS ENTERING THEM, AND CONDUCTORS AND CONNECTORS WITHOUT CROWDING.
.2 PROVIDE BOXES WITH SCREWED COVERPLATES UNLESS INDICATED OTHERWISE.
.3 INSTALL SURFACE MOUNTED SWITCHES IN FS AND FD, CAST GALVANIZED STEEL BOXES.
.4 PROVIDE EACH DEVICE, FIXTURE, AND EQUIPMENT IN FINISHED AREAS WITH A SUITABLE FLUSH MOUNTED OUTLET BOX COMPLETE WITH GROUND LUG AND ADAPTED TO THE RESPECTIVE LOCATION.



revisions date

project projet

GROUPS LIGHTING
DORCHESTER PENITENTIARY
MINIMUM SECTOR
WESTMORELAND COUNTY

drawing dessin

CONSTRUCTION
NOTES

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Tender PWGSC Project Manager Romy Callan 40281140 Soumissionnaire Administrateur de projets IP60C

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