PART 1 GENERAL

1.1 GENERAL SPECIFICATIONS

.1 IT IS RECOMMENDED THAT THE BIDDERS EXAMINE THE SITE AND THE EXISTING CONDITIONS AFFECTING THE PROJECT. EXAMINE THE COMPLETE SET OF CONTRACT DOCUMENTS TO ENSURE THAT THE WORK CAN BE CARRIED OUT WITHOUT SIGNIFICANT CHANGES TO THE INTENT OF THE DOCUMENTS. NO FUTURE ALLOWANCE WILL BE MADE CHANGES UNLESS THE CONTRACT ADMINISTRATOR HAS BEEN NOTIFIED IN WRITING OF ANY DISCREPANCIES OR INTERFERENCES, PRIOR TO THE CLOSE OF BIDS. NO ALLOWANCE WILL BE MADE FOR FOR ITEMS WHICH SHOULD HAVE BEEN NOTED DURING A PRE–BIDDING SITE INSPECTION.

.2 THE LOCATION, ROUTING AND ELEVATIONS OF ALL NEW AND EXISTING SERVICES AND UTILITIES AS SHOWN ON THE DRAWINGS ARE TO BE CONSIDERED AS APPROXIMATIONS ONLY. VERIFY THE EXACT LOCATIONS, ROUTINGS AND ELEVATIONS OF ALL SERVICES PRIOR TO COMMENCING WORK, AND ASSUME RESPONSIBILITY FOR LAYING OUT ALL WORK. THE ELECTRICAL SUBCONTRACTOR SHALL RETAIN RESPONSIBILITY FOR ANY DAMAGE TO EXISTING SERVICES AND UTILITIES.

.3 ALL ASPECTS OF THE INSTALLATION MUST COMPLY WITH THE MOST STRINGENT OF THE APPLICABLE BUILDING CODES, LOCAL REGULATIONS, AND BY–LAWS. BEFORE PROCEEDING WITH THE WORK, OBTAIN APPROVED DRAWINGS AND SPECIFICATIONS FROM THE AUTHORITIES HAVING JURISDICTION.

.4 PROVIDE ALL NECESSARY NOTICES, OBTAIN ALL REQUIRED PERMITS, PAY ALL FEES REQUIRED BY LAW, AND ARRANGE FOR ALL INSPECTIONS RELATED TO THE PERFORMANCE OF THE SPECIFIED WORK.

.5 PROVIDE ALL MATERIALS, LABOR AND EQUIPMENT REQUIRED TO COMPLETE THE WORK AS SHOWN AND AS SPECIFIED, SO AS TO LEAVE THE CITY OF WINNIPEG WITH A COMPLETE AND FUNCTIONING SYSTEM. ALL EQUIPMENT AND MATERIALS SHALL BE NEW AND C.S.A. APPROVED, UNLESS SPECIFICALLY NOTED OTHERWISE. ALL SIMILAR EQUIPMENT AND OR MATERIALS SHALL BE BY THE SAME MANUFACTURER.

.6 REQUEST FOR APPROVAL OF SUBSTITUTE MATERIAL SHALL BE IN ACCORDANCE WITH B6. REQUESTS SHALL INCLUDE ALL PERFORMANCE SPECIFICATIONS, PHYSICAL DATA AND OTHER PERTINENT INFORMATION REQUIRED FOR THE CONTRACT ADMINISTRATOR TO MAKE A COMPLETE COMPARISON.

.7 ALL CUTTING AND PATCHING SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL SUBCONTRACTOR. EXISTING EXPOSED SURFACES SHALL BE RETURNED TO AN "AS–FOUND" CONDITION ACCEPTABLE TO THE CITY OF WINNIPEG.

.8 PROVIDE ALL REQUIRED ACCESS PANELS WITH SUITABLE FIRE RATINGS FOR THE WALL OR CEILING THAT THEY ARE BEING INSTALLED IN.

.9 EACH SUBCONTRACTOR SHALL COORDINATE THE WORK WITH OTHER SUBCONTRACTORS IN ORDER TO AVOID CONFLICTS.

.10 NEATLY STORE ALL MATERIALS, AND CLEAN UP REFUSE ON A REGULAR BASIS. PROTECT AND MAINTAIN ALL WORK UNTIL THE PROJECT HAS BEEN COMPLETED AND TURNED OVER TO THE CITY OF WINNIPEG.

.11 THE INSTALLATION SHALL BE COMPLETELY TESTED, DEMONSTRATING THAT THE EQUIPMENT AND SYSTEMS INSTALLED ARE PERFORMING IN THE MANNER INTENDED.

.12 AT THE COMPLETION OF THE INSTALLATION, PROVIDE TWO MARKED–UP COPY OF THE OF THE "AS–BUILT" DRAWINGS FOR RECORD PURPOSES. PROVIDE THREE SETS OF OPERATION AND MAINTENANCE MANUALS. PAY ALL COSTS ASSOCIATED WITH THE PRODUCTION OF THE "AS–BUILT" DRAWINGS AND THE MANUALS. SUBMIT THE DOCUMENTS TO THE CONTRACT ADMINISTRATOR FOR REVIEW, AND MAKE ANY REQUESTED CHANGES BEFORE DELIVERING THEM TO THE OWNER.

.13 REVIEW THE OPERATION AND MAINTENANCE OF THE SYSTEMS WITH THE CITY OF WINNIPEG'S MAINTENANCE PERSONNEL AND PROVIDE WRITTEN AND/OR VERBAL INSTRUCTIONS AS REQUIRED.

.14 FURNISH CERTIFICATES CONFIRMING THAT THE WORK HAS BEEN INSTALLED TO THE SATISFACTION OF THE AUTHORITIES HAVING JURISDICTION.

.1 NO CERTIFICATE ISSUED, PAYMENT MADE, OR PARTIAL OR ENTIRE USE OF THE SYSTEMS BY THE CITY OF WINNIPEG, SHALL BE CONSTRUED AS ACCEPTANCE OF DEFECTIVE WORK OR MATERIALS.

.15 THE ELECTRICAL SUBCONTRACTOR SHALL PROVIDE A ONE YEAR LABOR AND MATERIAL WARRANTY ON ALL NEW EQUIPMENT AND COMPONENTS, COMMENCING UPON THE DATE OF ACCEPTANCE BY THE CITY OF WINNIPEG.

.1 REPLACE AT NO CHARGE TO THE CITY OF WINNIPEG, ALL ITEMS WHICH FAIL OR PROVE DEFECTIVE WITHIN A PERIOD OF ONE YEAR AFTER THE DATE OF FINAL ACCEPTANCE BY THE CITY OF WINNIPEG, PROVIDED THAT THE FAILURE IS NOT DUE TO IMPROPER USAGE BY THE THE CITY OF WINNIPEG. MAKE GOOD ALL DAMAGES INCURRED AS A RESULT OF THE FAILURE AND OF THE REPAIRS.

.16 THE ELECTRICAL SUBCONTRACTOR SHALL PROVIDE AND INSTALL ALL UNIT, FORCEFLOW AND BASEBOARD HEATERS.

.17 ELECTRICAL SUBCONTRACTOR RESPONSIBLE TO COORDINATE, SUBMIT AND FACILITATE ALL ITEMS RELATED TO MANITOBA HYDRO POWER SMART PROGRAM INCENTIVES. ALL REBATES TO BE FORWARDED TO THE CITY OF WINNIPEG.

1.2 ELECTRICAL SPECIFICATIONS

.1 REFER TO ARCHITECTURAL SPECIFICATIONS AND OTHER GENERAL CONDITIONS.

.2 PROVIDE FOR A COMPLETE AND WORKING INSTALLATION AS HEREIN SPECIFIED AND AS SHOWN ON THE DRAWINGS.

.3 THE ELECTRICAL INSTALLATION SHALL BE IN ACCORDANCE WITH THE CURRENT EDITION OF THE CANADIAN ELECTRICAL CODE, PROVINCIAL AND MUNICIPAL CODES AND REGULATIONS.

.4 OBTAIN ALL PERMITS, APPROVALS AND PAY ALL RELATED FEES REQUIRED FOR THIS INSTALLATION.

.5 ALL EQUIPMENT SUPPLIED UNDER THIS CONTRACT SHALL BE NEW AND BE C.S.A. APPROVED.

.6 COORDINATE ALL TELEPHONE CONDUIT RUNS WITH TELEPHONE UTILITY BEFORE INSTALLATION BEGINS.

.7 ARRANGE FOR, AND COORDINATE, ROUGH–IN AND FINAL INSPECTIONS WITH INSPECTION AUTHORITIES, CONTRACT ADMINISTRATOR AND THE CITY OF WINNIPEG'S REPRESENTATIVE.

.8 CONFIRM ALL RECEPTACLE CONFIGURATIONS, OUTLETS AND WIRING FOR CITY OF WINNIPEG SUPPLIED EQUIPMENT BEFORE INSTALLATION OF SAME. VISIT EXISTING SITE WHERE SUCH EQUIPMENT IS PRESENTLY INSTALLED, AND/OR OBTAIN OUTLETS, WIRING AND RECEPTACLE CONFIGURATIONS FROM EQUIPMENT MANUFACTURERS. EXACT CONFIGURATIONS MAY DIFFER FROM THOSE SHOWN ON THE DRAWINGS. INCLUDE ALL COSTS TO PROVIDE NECESSARY OUTLETS WIRING AND RECEPTACLES.

1.3 EXAMINATION

.1 EXAMINE THE ARCHITECTURAL, INTERIOR DESIGN, STRUCTURAL AND MECHANICAL DRAWINGS TO ENSURE THAT THE WORK UNDER THIS CONTRACT CAN BE SATISFACTORILY CARRIED OUT. REPORT ANY DISCREPANCIES TO THE CONSULTANT PRIOR TO SUBMISSION OF TENDER.

.2 THE ELECTRICAL SUBCONTRACTOR SHALL EXAMINE THE SITE, LOCAL CONDITIONS AND CONSIDER HOW THEY MAY AFFECT THE PROJECT.

1.4 SUPERVISION

.1 SUPERVISE THE WORK AT ALL TIMES THROUGH A RESPONSIBLE AND COMPETENT JOURNEYMEN ELECTRICIAN / SUPERVISOR.

.2 FULL COOPERATION SHALL BE SHOWN WITH OTHER TRADES TO FACILITATE INSTALLATIONS AND TO AVOID DELAYS IN CARRYING OUT THE WORK.

1.5 ACCURACY OF DATA

.1 DRAWINGS ARE SCHEMATIC; EXACT LOCATIONS, DISTANCES, LEVELS AND OTHER DIMENSIONS SHALL BE GOVERNED BY THE BUILDING AS CONSTRUCTED.

.2 OUTLETS OR EQUIPMENT SHALL BE MOVED TO ANY POINT WITHIN A 10' RADIUS WHEN RELOCATION IS REQUESTED BY THE CONTRACT ADMINISTRATOR OR CITY OF WINNIPEG BEFORE THE WORK HAS BEEN SUBSTANTIALLY COMPLETED, WITHOUT ADDITIONAL COST.

.3 BRANCH CIRCUIT WIRING SHALL BE INSTALLED WITH CIRCUITS ARRANGED EXACTLY AS SHOWN ON THE DRAWINGS. CONDUIT AND CABLE RUNS MAY BE MODIFIED TO SUIT THE INSTALLATION.

1.6 APPROVAL OF MATERIAL

.1 REQUEST FOR APPROVAL OF MATERIAL AS EQUALS OR ALTERNATES TO THAT SPECIFIED SHALL BE SUBMITTED IN ACCORDANCE WITH B6.

1.7 SHOP DRAWINGS

.1 PROVIDE A MINIMUM OF SEVEN COPIES OF SHOP DRAWINGS FOR REVIEW BY THE CONTRACT ADMINISTRATOR. THE SHOP DRAWINGS MUST BE ASSEMBLED INTO COMPLETE BROCHURES, WITH NO LOOSE SHEETS. UNASSEMBLED SUBMISSIONS WILL BE RETURNED AS INCOMPLETE.

.2 THE REVIEW OF THE SHOP DRAWINGS IS FOR THE SOLE PURPOSE OF ASCERTAINING CONFORMANCE WITH THE GENERAL DESIGN CONCEPT. THE REVIEW SHALL NOT MEAN APPROVAL OF THE DETAILED DESIGN INHERENT IN THE EQUIPMENT, THE RESPONSIBILITY FOR WHICH SHALL REMAIN WITH THE ELECTRICAL SUBCONTRACTOR (E.S.). THE REVIEW SHALL NOT RELIEVE THE E.S. OF THE RESPONSIBILITY TO MEET THE REQUIREMENTS OF THE CONTRACT DOCUMENTS. THE E.S. SHALL REMAIN RESPONSIBLE FOR CONFIRMING AND CORRELATING THE DIMENSIONS ON THE JOBSITE, AND FOR INFORMATION THAT PERTAINS TO THE FABRICATION PROCESS, CONSTRUCTION TECHNIQUES, AND INSTALLATION DETAILS, AND FOR COORDINATING ALL WORK OF THE RELATED SUB–TRADES.

.3 FABRICATION OF EQUIPMENT SHALL NOT COMMENCE UNTIL SHOP DRAWINGS OF SUCH EQUIPMENT HAVE BEEN REVIEWED BY THE CONTRACT ADMINISTRATOR. TWO SETS SHALL BE SUBMITTED WITH LOCAL INSPECTION DEPARTMENT APPROVAL WHERE REQUIRED.

.4 THE ELECTRICAL SUBCONTRACTOR SHALL REVIEW ALL MECHANICAL SHOP DRAWINGS – REQUIRING ELECTRICAL CONNECTION – AND COORDINATE VOLTAGE AND SIZES WITH MECHANICAL SUBCONTRATOR AND CONTRACTOR.

.5 REQUIRED SHOP DRAWINGS
- LIGHT FIXTURES, LAMPS, BALLASTS AND CONTROL SYSTEMS
- ELECTRICAL DISTRIBUTION (CDPS, PANELBOARDS, BREAKERS, ETC)
- PANELBOARDS.
- ELECTRIC HEATING EQUIPMENT AND CONTROLS .
- EMERGENCY LIGHTING EQUIPMENT
- WIRING DEVICES (RECEPTACLES, SWITCHES, ETC)
- MOTOR STARTERS.
- CONTACTORS
- DISCONNECT SWITCHES
- FIRE ALARM SYSTEM
- DISTRIBUTION TRANSFORMER

1.8 AS–BUILT DRAWINGS

.1 KEEP A RECORD SET OF DRAWINGS ON THE SITE AT ALL TIMES RECORDING ANY CHANGES THAT MAY OCCUR. SUBMIT THESE DRAWINGS TO THE CONTRACT ADMINISTRATOR UPON COMPLETION OF THE WORK. AS–BUILTS SHALL INCLUDE CIRCUITING OF NEW AND EXISTING EQUIPMENT TO REMAIN.

.2 SUBMIT A CERTIFICATE OF INSPECTION FROM THE LOCAL INSPECTION AUTHORITY UPON COMPLETION OF WORK AND INCLUDE WITH "AS–BUILT" DRAWINGS.

.3 THE CONTRACT ADMINISTRATOR RESERVES THE RIGHT TO RECOMMEND THAT A PORTION OF THE CONTRACT FUNDS BE WITHHELD PENDING SUBMISSION OF ACCEPTABLE AS–BUILT DRAWINGS.

1.9 TESTING

.1 THE ELECTRICAL INSTALLATION SHALL BE COMPLETELY TESTED DEMONSTRATING THAT THE EQUIPMENT AND SYSTEMS INSTALLED PERFORM IN THE MANNER INTENDED.

1.10 GUARANTEE

.1 THE SATISFACTORY OPERATION OF ALL WORK SHALL BE GUARANTEED FOR A PERIOD OF 12 CALENDAR MONTHS AFTER FINAL ACCEPTANCE OF THE BUILDING.

1.11 REQUEST FOR CHANGE

.1 ALL QUOTATIONS IN RESPONSE TO REQUEST FOR CHANGE SHALL BE SUBMITTED COMPLETE WITH AN ITEMIZED COST BREAKDOWN OF ALL MATERIALS AND LABOUR REQUIRED IN THE CHANGE.

1.12 GROUNDING

.1 THE ENTIRE INSTALLATION SHALL BE GROUNDED IN ACCORDANCE WITH THE CANADIAN ELECTRICAL CODE AND AS SHOWN ON DRAWINGS.

1.13 WORKMANSHIP

.1 INSTALL EQUIPMENT, CONDUIT AND CABLES IN A WORKMANLIKE MANNER TO PRESENT A NEAT APPEARANCE TO THE SATISFACTION OF THE CONTRACT ADMINISTRATOR. INSTALL CONDUIT AND CABLE RUNS PARALLEL AND PERPENDICULAR IN CHASES, BEHIND FURRING OR ABOVE CEILINGS. IN AREAS WHERE SYSTEMS ARE TO BE EXPOSED, INSTALL NEATLY AND GROUP TO PRESENT A TIDY APPEARANCE.

.2 INSTALL EQUIPMENT AND APPARATUS REQUIRING MAINTENANCE, ADJUSTMENT OR EVENTUAL REPLACEMENT WITH ADEQUATE CLEARANCES AND ACCESSIBILITY FOR SAME.

.3 INCLUDE, IN THE WORK, ALL REQUIREMENTS SHOWN ON THE SHOP DRAWINGS OR MANUFACTURERS' INSTALLATION INSTRUCTIONS.

.4 REPLACE WORK UNSATISFACTORY TO THE CONTRACT ADMINISTRATOR WITHOUT EXTRA COST.

.5 USE OF CLIPS FOR SECURING AC90 TO CEILING SYSTEM IS PROHIBITED.

.6 ALL CONDUITS MUST BE CLIPPED TO STRUCTURAL CONCRETE BY MEANS OF ANCHORS OR SUPPORTED BY UNISTRUT HANGERS AS CLOSE TO UNDERSIDE AS POSSIBLE. TYE WRAPS FOR WIRE HANGING AND FASTENING IS NOT ACCEPTABLE. PERFORATED STRAPPING IS ALSO UNACCEPTABLE. ALL ELECTRICAL COMPONENTS MUST BE SUPPORTED INDEPENDENTLY.

.7 ALL ELECTRICAL SUPPORTS AND HANGER ARE TO CO–ORDINATED AND ACCEPTABLE TO THE PRE–ENGINEERED MANUFACTURE PRIOR TO INSTALLATION.

1.14 WORK IN EXISTING BUILDING

.1 THE BUILDING SHALL REMAIN OPEN AND WILL OPERATE NORMALLY DURING THE CONSTRUCTION PERIOD OF THIS CONTRACT.

.2 REFER TO GENERAL CONDITIONS FOR PHASING AND STAGING OF WORK AND ADHERE TO THAT PROGRAM. COMPLY WITH INSTRUCTIONS REGARDING WORKING HOURS NECESSARY TO MAINTAIN THE BUILDING IN OPERATION. COORDINATE ALL WORK WITH CONTRACTOR.

.3 REFER TO ELECTRICAL, ARCHITECTURAL, STRUCTURAL AND MECHANICAL DRAWINGS AND SPECIFICATIONS FOR NEW WORK INVOLVED IN EXISTING BUILDING.

.4 EXAMINE THE SITE AND LOCAL CONDITIONS AFFECTING ALL THE WORK TO OBTAIN DETAILS AND ALL INFORMATION NECESSARY TO DO THE WORK. NO EXTRA COMPENSATION WILL BE ALLOWED DUE TO FAILURE TO MAKE THIS EXAMINATION.

.5 ELECTRICAL SUBCONTRACTOR IS RESPONSIBLE TO INCLUDE ALL WORK AND ITEMS REQUIRED TO ACCOMMODATE ALL CHANGES AND ALTERATIONS TO THE EXISTING BUILDING. INCLUDE ALL COSTS IN ORIGINAL TENDER PRICE.

.6 WHERE EXISTING SERVICES SUCH AS ELECTRICAL POWER AND FIRE ALARM SYSTEM, ETC. ARE REQUIRED TO BE DISRUPTED AND/OR SHUT–DOWN, COORDINATE THE SHUT–DOWNS WITH THE CITY OF WINNIPEG AND CARRY OUT THE WORK AT A TIME AND IN A MANNER ACCEPTABLE TO THEM. CAREFULLY SCHEDULE ALL DISRUPTIONS AND/OR SHUT–DOWNS AND ENSURE THAT THE DURATION OF SAME IS KEPT TO A MINIMUM. SUBMIT FOR APPROVAL, A WRITTEN SCHEDULE OF EACH DISRUPTION AT LEAST 72 HOURS IN ADVANCE OF PERFORMING WORK AND OBTAIN CITY OF WINNIPEG'S WRITTEN CONSENT PRIOR TO IMPLEMENTING.

.7 SHOULD ANY CONNECTIONS BE REQUIRED TO MAINTAIN SERVICES DURING WORK IN THE EXISTING BUILDING, SUPPLY AND INSTALL ALL NECESSARY MATERIAL AND EQUIPMENT AND PROVIDE ALL LABOUR AT NO EXTRA COST. SHOULD ANY EXISTING SYSTEM BE DAMAGED, MAKE FULL REPAIRS WITHOUT EXTRA COST, AND TO THE SATISFACTION OF THE CITY OF WINNIPEG.

.8 THE DRAWINGS INDICATE MAJOR ITEMS OF EQUIPMENT TO BE DELETED OR RELOCATED BUT MAY NOT INDICATE EVERY ITEM OF EQUIPMENT OR CONDUIT TO BE DELETED OR RELOCATED. ELECTRICAL SUBCONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING WHICH EXISTING EQUIPMENT IS TO BE DELETED OR RELOCATED BY EXAMINING THE SITE AND ALL CONSTRUCTION DOCUMENTS.

.9 WHERE EXISTING DEVICES (RECEPTACLES, SWITCHES, ETC.) MOUNTED ON A WALL WHICH WILL BE COVERED WITH A NEW FINISH, PROVIDE AN EXTENSION RING, COVERPLATE, ETC. AS REQUIRED TO MOUNT THE DEVICE TO THE NEW WALL.

.10 EXISTING JUNCTION BOXES SHALL REMAIN ACCESSIBLE.

.11 PROVIDE PIPE GUARD RAILS FOR PANELBOARDS WHERE INDICATED AND WHERE PANELS OR CONDUITS MAY BE SUBJECT TO DAMAGE. COORDINATE ALL WORK WITH CONTRACTOR.

.12 RE–WIRE, MODIFY AND EXTEND EXISTING WIRING AS SPECIFIED AND AS MAY BE REQUIRED TO PROVIDE AND COMPLETE, APPROVED AND FULLY OPERATIVE INSTALLATION TO THE SATISFACTION OF THE CONTRACT ADMINISTRATOR AND THE CITY OF WINNIPEG.

.13 IN AREAS WHERE EXISTING WALLS, CEILINGS, ETC. ARE REQUIRED TO BE CUT INTO OR REMOVED, OR OTHER SIMILAR CONSTRUCTION ALTERNATIONS ARE REQUIRED, THE EXISTING WIRING IN THE AREAS REQUIRED TO REMAIN IN USE FOR ANY REASON, THE CONTRACTOR SHALL RE–ROUTE, ALTER AND /OR EXTEND ALL SUCH WIRING IN THESE AREAS IN AN APPROVED MANNER, CONCEALED IN THE BUILDING STRUCTURE WHERE REQUIRED, IN SUCH A MANNER THAT THE ORIGINAL ELECTRICAL CAPACITY OR CHARACTERISTICS IS MAINTAINED. ALL WORK SHALL BE TO THE COMPLETE SATISFACTION OF THE CONTRACT ADMINISTRATOR AND THE CITY OF WINNIPEG.

.14 DISCONNECT AND REMOVE EXISTING CEILING MOUNTED ELECTRICAL DEVICES FOR THE CONSTRUCTION OF NEW CEILINGS, SKY–LIGHT OPENINGS OR RELATED WORK. ONCE NEW WORK IS COMPLETE, RE–INSTALL AND RE–CONNECT ELECTRICAL DEVICES TO ORIGINAL LOCATIONS AND CIRCUITS. PROVIDE ALL WIRING REQUIRED.

.15 CONDUITS AND BOXES SHALL BE SURFACE MOUNTED ONLY IN AREAS SPECIFIED.

.16 ALL EXISTING AND NEW CITY OF WINNIPEG'S EQUIPMENT IS TO BE WIRED AND CONNECTED. SUPPLY AND INSTALL, WIRE AND CONNECT MATCHING RECEPTACLE FOR PORTABLE EQUIPMENT COMPLETE WITH CORD AND CAP. REFER TO EQUIPMENT NAMEPLATE RATING FOR ELECTRICAL CHARACTERISTICS PRIOR TO ROUGH–IN.

.17 ALL EXISTING CITY OF WINNIPEG'S EQUIPMENT WHICH IS NON–PORTABLE, SHALL BE DIRECTLY CONNECTED VIA SOW OR SOWJ CORD MATCHING ELECTRICAL CHARACTERISTICS AS DETERMINED BY NAMEPLATE RATINGS OF EQUIPMENT. CONFIRM NAMEPLATE CHARACTERISTICS PRIOR TO ROUGH–IN.

.18 MINIMIZE ELECTRICAL SERVICE AND OTHER SYSTEM INTERRUPTIONS. COORDINATE CHANGE–OVER WORK WITH THE CITY OF WINNIPEG'S SITE REPRESENTATIVE ON SITE PRIOR TO INITIATING WORK.

1.15 REMEDIAL WORK SPECIFICATIONS

.1 ALL AC–90 HOMERUN THAT ARE AFFECTED BY THE DEMOLITION AND RENOVATION WOTRKS SHALL BE REMOVED AND REPLACED BY EMT CONDUIT AND 90? XLPE COPPER CONDUCTORS (MINIMUM #12). NUMBER OF HOME RUNS SHALL BE MINIMIZED.

.2 ALL UNUSED CABLES AND CONDUITS (INCLUDING COMMUNICATIONS CONDUCTORS) SHALL BE REMOVED FROM SITE.

.3 AC–90 MAY BE USED FOR DROPS TO LIGHT FIXTURES AND DROPS FROM ZONED CONDUITS TO STEEL STUD WALLS OR DECK RECEPTACLES WHERE THE CABLE WILL NOT BE EXPOSED IN MORE THAN A FIVE FOOT RADIUS OF THE JUNCTION BOX AT THE DECK.

.4 IT IS THE ELECTRICAL SUBCONTRACTOR'S RESPONSIBILITY TO ENSURE THAT ANY CORING OF HOLES THROUGH DECKS OR FLOOR SLABS WILL NOT PENETRATE EXISTING CONDUITS, CABLES OR MECHANICAL EQUIPMENT IN OR UNDER DECKS OR FLOOR SLABS. HE SHALL AT HIS COST, BE RESPONSIBLE TO TAKE ALL ACTIONS REQUIRED AND AS MAY BE DEEMED NECESSARY BY THE CONSULTANT/OWNER'S REPRESENTATIVE TO CORRECT ANY DAMAGE. NO CORING SHALL BE UNDERTAKEN UNLESS PERMISSION IS GIVEN BY THE CONSULTANT.

.5 ALL EXISTING JUNCTION BOXES PRESENTLY MOUNTED ON DUCTWORK OR CEILING SYSTEM SHALL BE RELOCATED AND INDEPENDENTLY SUPPORTED.

1.16 RE–USE EXISTING EQUIPMENT

.1 EXISTING 'MANUFACTURER' OF ELECTRICAL DISTRIBUTION EQUIPMENT SHALL BE CONSIDERED 'APPROVED' FOR NEW INSTALLATION WHERE REQUIRED.

.2 THE ELECTRICAL SUBCONTRACTOR SHALL VISIT THE WORK SITE PRIOR TO TENDER CLOSE TO DETERMINE WHAT ELECTRICAL DEVICES AND EQUIPMENT CAN BE RE–USED.

.3 WHERE A DEVICE IS INDICATED TO BE "NEW", THE ELECTRICAL SUBCONTRACTOR MAY RE–USE AN EXISTING DEVICE IN THE SAME LOCATION. RE–USED DEVICE SHALL HAVE SAME CHARACTERISTICS AND SHALL NOT REDUCE QUALITY OR DESIGN INTENT.

.4 REPLACE OR REPAIR EXISTING ELECTRICAL EQUIPMENT TO BE RE–USED AS NECESSARY, TO EFFECT A GOOD AND "LIKE NEW" WORKING UNIT/SYSTEM.

.5 WHERE COST EFFECTIVE, AND UNLESS SPECIFIED OTHERWISE, THE ELECTRICAL SUBCONTRACTOR MAY RE–USE EXISTING ELECTRICAL DEVICES WHICH HE DEEMS TO BE RE–USABLE. CAUTION: THIS DOES NOT APPLY TO MAIN DISTRIBUTION BREAKERS OR OTHER SUCH MAJOR EQUIPMENT THAT ARE SPECIFICALLY NOTED TO BE NEW. COORDINATE ALL EQUIPMENT RELOCATIONS WITH CONTRACTOR.

.6 WHERE PANELBOARDS ARE SHOWN TO BE "RELOCATED", THE ELECTRICAL SUBCONTRACTOR HAS THE OPTION TO RE–USE THE EXISTING PANELBOARDS OR INSTALL NEW PANELBOARDS AND DISCARD THE OLD. IF EXISTING PANEL IS RE–USED THE CONTRACTOR SHALL RE–FURBISH THE EXISTING PANEL AND BREAKERS TO "AS NEW" CONDITION AND CARRY FULL WARRANTY AS IF PROVIDED AS NEW.

.7 RE–USE OF BUILDING LIGHTING EQUIPMENT: REFER TO LUMINAIRES SECTION IN SPECIFICATIONS.

.8 THE ELECTRICAL SUBCONTRACTOR SHALL NOT JEOPARDIZE OPERATION OR PROJECT COMPLETION SCHEDULE BY SPENDING TOO MUCH TIME RE–FURBISHING OLD EXISTING PANELS OR OTHER EXISTING EQUIPMENT.

.9 ENSURE THAT FIRE ALARM SYSTEM COMPONENTS ARE RE–USABLE AND REPLACE AS NECESSARY. WHERE MORE THAN 10% OF THE SYSTEM COMPONENTS (NEW OR RELOCATIONS) BY NUMBER OF DEVICES ARE MODIFIED, REPLACE ALL EXISTING NON–CONFORMING DEVICES WITH NEW AS PART OF THE BASE CONTRACT WORK.

PART 2 MATERIALS AND INSTALLATION

2.1 OUTLET BOXES

.1 OUTLET, JUNCTION AND SWITCH BOXES SHALL BE GALVANIZED PRESSED STEEL OF SIZE AND TYPE TO SUIT EACH INDIVIDUAL APPLICATION.

.2 OUTLETS SHALL NOT BE LOCATED ANYWHERE ON THE OUTSIDE CURTAIN WALL. OUTLETS SHOWN THUS SHALL BE MOUNTED ON THE NEAREST DIVIDING WALL 2' FROM OUTSIDE WALL, OR NEAREST FURRED OUT COLUMN.

.3 PROVIDE ALL REQUIRED ACCESS PANELS WITH SUITABLE FIRE RATINGS FOR THE WALL OR CEILING THAT THEY ARE BEING INSTALLED IN.

2.2 WIRING METHODS

.1 UNLESS OTHERWISE SHOWN ON THE DRAWINGS, ALL WIRE SHALL BE COPPER, MINIMUM #12 AWG WITH 90 DEGREES CELSIUS X–LINK INSULATION. WIRING TO BE INSTALLED IN CONDUIT (INCLUDING WIRING ON ROOF DECK FLUTES WHERE APPROVED).

.2 WIRING IN CONCRETE OR MASONRY CONSTRUCTION SHALL BE INSTALLED IN STEEL ELECTRICAL METALLIC TUBING (EMT). PROVIDE A SEPARATE GROUNDING CONDUCTOR IN EMT CONDUIT RUNS EMBEDDED IN CONCRETE SLABS. CONDUITS INSTALLED IN AREAS EXPOSED TO MOISTURE SHALL HAVE WATERTIGHT FITTINGS.

.3 ALL WIRING IN FINISHED AREAS SHALL BE CONCEALED. ALL CONDUCTORS AND CONDUITS SHALL BE RUN PERPENDICULAR OR PARALLEL TO THE BUILDING CORE WALLS. SEAL ALL EXTERIOR ROOF AND WALL PENETRATIONS.

.4 CONDUIT AND WIRING SHALL BE GROUPED WHERE POSSIBLE AND CLIPPED IN A NEAT AND WORKMANLIKE MANNER.

.5 AC–90 CABLE TO BE USED FOR DROPS FROM CONDUIT SYSTEMS TO RECESSED LIGHTING FIXTURES IN ACCESSIBLE CEILINGS OR OUTLET BOXES IN STEEL STUD WALLS ONLY. HOME RUNS SHALL BE IN CONDUIT. MAXIMUM RUN OF AC–90 IN ACCESSIBLE CEILING SPACE SHALL BE 5'–0".

.6 EACH CIRCUIT FOR COMPUTER EQUIPMENT, PRINTERS AND COPIERS SHALL HAVE A SEPARATE NEUTRAL CONDUCTOR.

.7 PROVIDE ONE ISOLATED GROUND CONDUCTOR PER THREE 2 WIRE ISOLATED GROUND CIRCUITS.

.8 CONDUIT RUNS SHALL BE INSTALLED AND INSPECTED BEFORE AC–90 RUNS ARE INSTALLED TO ENSURE CONFORMANCE WITH ITEM .5 HEREIN.

.9 THREE WIRE AC–90 SHALL NOT BE USED FOR ISOLATED GROUND WIRING, UNLESS IT INCLUDES A GREEN INSULATED CONDUCTOR FOR THIS PURPOSE.

.10 ALL AC–90 USED FOR DROPS SHALL BE RUN TIGHT TO DECK AND FOLLOW LINES OF BREAMS AND BUILDING.

.11 ALL WIRING IN SERVICE AREAS TO BE IN SURFACE MOUNTED EMT. DO NOT RUN CONDUIT HORIZONTALLY ON WALLS, VERTICAL DROPS ONLY.

2.3 IDENTIFICATION OF EQUIPMENT

.1 ALL EQUIPMENT SHALL BE IDENTIFIED WITH 3/8" X 1 ½" (1/8" LETTERS) ENGRAVED LAMACOID NAMEPLATES INDICATING PANEL AND CIRCUIT NUMBER OR FIRE ALARM HORN DESIGNATION. LAMACOIDS SHALL BE EITHER SCREWED OR RIVETED IN PLACE. WITH EXCEPTION TO RECEPTACLES AND LIGHTING SWITCHES, SELF ADHESIVE TYPE IS NOT ACCEPTABLE. LAMACOIDS SHALL BE WHITE LETTERING ON RED FACE FOR EMERGENCY AND FIRE ALARM DEVICES AND WHITE LETTERING ON BLACK FACE TO NORMAL POWER DEVICES AND COMMUNICATION PANELS.

.2 PROVIDE 1" X 3" LAMACOIDS FOR EACH NEW CDP BREAKER, INDICATING PANEL OR FEED BEING FED.

2.4 MECHANICAL EQUIPMENT WIRING

.1 PROVIDE STARTERS (MINIMUM SIZE NEMA 1) AND WIRING FOR ALL HEATING, VENTILATING AND PLUMBING EQUIPMENT UNLESS SPECIFIED OTHERWISE.

.2 POWER WIRING FOR THE MECHANICAL EQUIPMENT SHALL BE PERFORMED BY THE ELECTRICAL SUBCONTRACTOR. OBTAIN A WIRING DIAGRAM FROM THE MECHANICAL SUBCONTRACTOR.

.3 PROVIDE CONTROL WIRING FOR ALL MECHANICAL EQUIPMENT AS INDICATED. REFER TO MOTOR SCHEDULE FOR CONTROL WIRING REQUIREMENTS.

.4 REFER TO THE MECHANICAL DRAWINGS FOR THE EXACT LOCATION OF MECHANICAL EQUIPMENT REQUIRING AN ELECTRICAL CONNECTION.

.5 WHERE CONDUIT IS TO BE INSTALLED IN DESIGNATED EXPOSED AREAS (OPEN BEAM CEILING, ETC), E.C. COORDINATE EXACT INSTALLATION LOCATION WITH CONTRACTOR. AND ARCHITECT. WHERE CONDUIT IS INSTALLED WITHOUT COORDINATE AND IS NOT BE THE SATISFACTION OF THE CONTRACT ADMINISTRATOR.

2.5 LUMINAIRES

.1 SUPPLY AND INSTALL FLUORESCENT FIXTURES COMPLETE WITH ELECTRONIC BALLASTS, AND T8 LAMPS.

.2 PROVIDE DEDICATED NEUTRAL FOR ALL LIGHTING CIRCUITS.

.3 ALL FLUORESCENT LAMPS SHALL BE 3500 K AND 82 CRI MINIMUM, UNLESS NOTED OTHERWISE.

.4 ALL METAL HALIDE LAMPS SHALL HAVE A 82 CRI MINIMUM, UNLESS NOTED OTHERWISE.

.5 ALL HIGH PRESSURE SODIUM LAMPS SHALL HAVE A 21 CRI MINIMUM, UNLESS NOTED OTHERWISE.

.6 ALL SWITCHING SHALL BE RUN IN CONDUIT.

2.6 PANELBOARDS

.1 LOAD CENTRES ARE NOT ACCEPTABLE. PANELS SHALL BE COMPLETE WITH PANEL TRIM HAVING CONCEALED HINGES AND TRIM MOUNTING SCREWS, LOCKING DOOR WITH FLUSH CATCH. PROVIDE TWO KEYS FOR EACH PANEL. PROVIDE SPRINKLER HOOD ON ALL PANELBOARDS.

.2 BRANCH CIRCUIT BREAKERS SHALL BE BOLT–ON MOULDED CASE WITH THERMAL BREAKERS RATED AT 10,000A SYMMETRICAL OR AS INDICATED ON SINGLE LINE DRAWING.

.3 AFFIX TYPEWRITTEN DIRECTORY TO THE INSIDE OF THE PANELBOARD INDICATING LOADS CONTROLLED BY EACH CIRCUIT INCLUDE COPY IN OPERATION AND MAINTENANCE MANUALS.

.4 PANELBOARDS TO BE SURFACE OR RECESSED MOUNTED AS INDICATED.

.5 PROVIDE BREAKER LOCK ON DEVICE FOR NIGHT LIGHTS AND FIRE ALARM CIRCUITS, AND PAINT BREAKER COLOR RED.

2.7 CUTTING AND PATCHING

.1 ARRANGE AND PAY FOR ALL CUTTING AND PATCHING AS REQUIRED FOR THE ELECTRICAL INSTALLATION.

.2 PROVIDE APPROPRIATE FIRE STOP AT ALL FIRE WALL PENETRATIONS. ACCEPTABLE MANUFACTURERS: DOW CORNING, FIRE–STOP SYSTEMS (ELASTA–SEAL) OR G.E. SILICONE.

.3 REFER TO ARCHITECTURAL SPECIFICATIONS FOR PRODUCT AND INSTALLATION DETAILS.

2.8 DISTRIBUTION

.1 GENERAL ARRANGEMENT AND SIZE OF COMPONENTS SHALL BE AS SHOWN ON THE DRAWINGS.

.2 ALL DISTRIBUTION EQUIPMENT IS TO BE COMPLETE WITH LOCKING DOOR AND SPRINKLER HOODS.

.3 PROVIDE SHORT CIRCUIT AND CO–ORDINATION STUDY SEALED BY A PROFESSIONAL ENGINEER LICENCED TO PRACTICE IN THE PROVINCE IN WHICH THE WORK IS BEING PERFORMED WITH DISTRIBUTION SHOP DRAWINGS.

2.9 DEVICES

.1 COLORS OF RECEPTACLES, SWITCHES, OUTLETS AND COVERPLATES SHALL BE WHITE IN OFFICE AREAS AND BROWN IN ALL OTHER AREAS, UNLESS NOTED OTHERWISE. PROVIDE STAINLESS STEEL COVER PLATES IN KITCHEN AND SERVICE AREAS.

.2 SWITCHES SHALL BE HUBBELL, ARROW HART, BRYANT, LEVITON, WOODHEAD, PASS & SEYMOUR, 15 AMPS, 125 / 347 VAC. MOUNT SWITCHES 54" A.F.F. UNLESS OTHERWISE NOTED.

.3 ACCEPTABLE MANUFACTURERS FOR RECEPTACLES SHALL BE HUBBELL, ARROW HART, BRYANT, LEVITON, WOODHEAD, PASS & SEYMOUR. CATALOGUE NO.5252 FOR ALL MANUFACTURERS. ISOLATED GROUND RECEPTACLES TO BE ORANGE FACE. MOUNT RECEPTACLES 12" A.F.F. UNLESS OTHERWISE NOTED.

.4 INCANDESCENT LIGHTING DIMMER CONTROLS SHALL BE LUTRON NOVA T* RATED AT MINIMUM 1000 WATTS (0–100%). COLOUR OF DIMMER SNAP–ON COVER TO BE AS SELECTED BY ARCHITECT, INTERIOR DESIGNER, OR AS INDICATED ON THE DRAWING. MOUNT DIMMERS 54" A.F.F. UNLESS OTHERWISE NOTED.

.5 PROVIDE STAINLESS STEEL COVERPLATES FOR RECESSED DEVICES.

2.10 EMERGENCY AND EXIT LIGHTING

.1 DESIGN INTENT IS TO PROVIDE NEW 24 VOLT BATTERY BANKS TO SERVE NEW EMERGENCY LIGHTING AND NEW EXIT LIGHTING FIXTURES. PROVIDE BATTERY BANKS AND REMOTE FIXTURES AS INDICATED ON THE DRAWINGS. LAMPS SHALL BE 20 WATT QUARTZ HALOGEN EQUAL TO LUMACELL RSQB–2, SINGLE OR DOUBLE HEADS AS NOTED ON DRAWINGS.

.2 NEW EXIT LIGHT FIXTURES SHALL BE LOW WATTAGE, LED TYPE, WHITE, STEEL OR CAST METAL EQUAL TO LUMACELL LMCE SERIES. UNITS TO BE ONE OR TWO SIDED AS INDICATED UNITS TO BE PROVIDED WITH FULL PANEL (HIGH BRIGHTNESS) LED'S, WITH MINIMUM 100,000 HOUR LIFE RATING AND BE COMPLETE WITH DIRECTIONAL ARROWS, AS SHOWN ON THE DRAWING. PROVIDE AC AND DC POWER.

.3 WIRING SHALL BE MINIMUM #12 AWG. PROVIDE #10 AWG WHERE REQUIRED TO ATTAIN 2% (OR LESS) VOLTAGE DROP, UNLESS OTHERWISE NOTED. ALL WIRING IN EMT.

.4 ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING BATTERY BANK SIZE AND CAPACITY TO PROVIDE A MINIMUM OF 60 MINUTE BACK–UP.

.5 ACCEPTABLE MANUFACTURERS ARE EMERGI–LITE, LUMACELL, READI–LITE AND DUAL–LITE.

.6 PROVIDE A WRITTEN GUARANTEE, STATING THAT THE BATTERY FOR EMERGENCY LIGHTING IS GUARANTEED AGAINST DEFECTS IN MATERIAL AND WORKMANSHIP FOR PERIOD OF TEN YEARS, WITH A NO–CHARGE REPLACEMENT DURING THE FIRST FIVE YEARS AND A PRO–RATE CHARGE ON THE SECOND FIVE YEARS FROM THE DATE OF THE FINAL ACCEPTANCE FROM THE CITY OF WINNIPEG.

.7 ALL EXIT SIGNS TO BE CSA C860 APPROVED.

2.11 CITY OF WINNIPEG SUPPLIED EQUIPMENT

.1 WIRE AND CONNECT ALL CITY OF WINNIPEG'S SUPPLIED EQUIPMENT AS SHOWN ON THE DRAWINGS. VERIFY NAMEPLATE RATINGS WITH POWER PROVISIONS. ANY DISCREPANCIES SHALL BE REPORTED TO THE CONTRACT ADMINISTRATOR.

.2 ALL CITY OF WINNIPEG'S SUPPLIED EQUIPMENT, WITH THE EXCEPTION OF PLUG–IN TYPES, SHALL BE HARD–WIRED AT LOCATIONS SHOWN ON THE DRAWINGS.

2.12 VOICE/DATA COMMUNICATIONS CONDUITS (INCLUDING POS)

.1 CONDUIT SHALL BE COMPLETELY INDEPENDENT FROM OTHER CONDUIT. INSTALLATION SHALL BE MADE IN STRICT ACCORDANCE WITH THE LOCAL TELEPHONE SYSTEM REGULATIONS WITH REGARD TO PULLBOXES, BENDS, ETC. MINIMUM CONDUIT SIZE TO BE 3/4".

.2 EMPTY CONDUIT TO BE PROVIDED WITH A NYLON PULL CORD.

.3 CONDUITS SHALL BE PROVIDED FROM EACH COMMUNICATIONS OUTLET TO ACCESSIBLE CEILING SPACE.

.4 WHERE OUTLETS ARE SHOWN PEDESTAL MOUNTED, ONE CONTINUOUS 1"C FROM EACH PEDESTAL SHALL BE RUN TO THE CEILING SPACE OF THE FLOOR CONTAINING THE PEDESTAL.

2.13 SECURITY CONDUIT

.1 SECURITY CONDUIT SHALL BE COMPLETELY INDEPENDENT FROM OTHER CONDUIT.

2.14 FIRE ALARM SYSTEM

.1 SYSTEM SHALL BE SINGLE STAGE ADDRESSABLE OR 5 ZONES CONVENTIONAL 2 SIGNAL ZONE C/W BATTERY BACK UP.

.2 PROVIDE OUTPUT RELAYS FOR CENTRAL REPORTING AND FAN SHUTDOWN OF ALL ROOF TOP UNITS.

.3 DETERMINE EXACT LOCATION OF FIRE ALARM ANNUNCIATOR ON SITE PRIOR TO INSTALLATION.

.4 MAKE ALL PROVISIONS FOR CENTRAL REPORTING, INCLUDING 4#12 IN CONDUIT TO TELEPHONE BACKBOARD.

.5 ALL FIRE ALARM WIRING, INCLUDING WIRING TO STEEL STUD PARTITIONS, SHALL BE IN EMT CONDUIT.

.6 ALL WORK REGARDING FIRE ALARM SYSTEM WILL REQUIRE A ULC APPROVED FIRE ALARM VERIFICATION. INCLUDE ALL COSTS FOR SAME IN CONTRACT

.7 THE VERIFICATION INSPECTION REPORT SHALL ACCOMPANY THE AS–BUILT DRAWINGS.

.8 TEST THE COMPLETE SYSTEMS IS THE PRESENCE OF THE CONSULTANT AND SUBMIT TEST SHEET BEFORE REQUESTING FIRE INSPECTION.

.9 MAKE ALL PROVISIONS TO WIRE AND CONNECT FIRE ALARM SUPPRESION CONTROL PANEL. COORDINATE WITH SYSTEMS INSTALLER.

.10 PROVIDE LABELS ON FIRE ALARM PANEL PER CITY OF WINNIPEG FIRE DEPT. REQUIREMENTS.

NO.	REVISION	DATE	BY
3	RE–ISSUED FOR BID OPPORTUNITY	12/05/07	TT
2	ISSUED FOR BID OPPORTUNITY	11/27/07	TT
1	ISSUED FOR FINAL REVIEW	10/12/07	TT
0	ISSUED FOR REVIEW	04/30/07	TT

THIS DRAWING SHALL NOT BE SCALED. FOLLOW GIVEN DIMENSIONS ONLY.

THE CONTRACTOR SHALL SATISFY HIMSELF THAT ALL DIMENSIONS AND INFORMATION SHOWN ARE CORRECT.

PRIOR TO COMMENCEMENT OF WORK REPORT ANY DISCREPANCIES TO THE CONTRACT ADMINISTRATOR.

VARIATIONS AND MODIFICATIONS TO WORK SHOWN WILL NOT BE ALLOWED WITHOUT WRITTEN PERMISSION OF THE CONTRACT ADMINISTRATOR.

CONSULTANT

TOWER PROJECT NO. : 6184

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SEAL

ORIGINAL AS SEALED ON 12/07/05 BY THAI TONTHAT, P. ENG.

APEGM
Certificate of Authorization
Tower Engineering Group
No. 1918 Expiry: April 30, 2008

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PROJECT TITLE

NOTRE DAME COMMUNITY CENTRE

271 DE LA CATHEDRALE AVE.
WINNIPEG, MANITOBA

SHEET TITLE

ELECTRICAL SPECIFICATIONS

DRAWN BY	SCALE	SHEET NUMBER
NF	AS NOTED	E–5.0
CHECKED BY: ES	DATE: 11/27/07	
PROJECT NUMBER: 06–012	REVISION: 3	