26 05 00 COMMON WORK RESULTS FOR ELECTRICAL

1.1 GENERAL REQUIREMENTS

.1 The specification covering the General Conditions of the Contract, General Specifications, Instructions to Contractor and all associated sections from an integral part of this specification and shall be read in conjunction herewith.

1.2 SCOPE

.1 Provide all materials, labour, plant and equipment required for a complete and working installation as herein specified and as indicated drawings.

.2 The electrical installation shall be in accordance with the current edition of the Canadian Electrical Code, Provincial and Municipal codes and regulations.

.3 Obtain all permits, approvals and pay all related fees required for this installation.

.4 All equipment supplied under this Contract shall be new and be C.S.A. approved.

.5 Co-ordinate all telephone and cablevision conduit runs with MTS and Shaw before installation begins.

.6 Arrange for, and co-ordinate, rough-in and final inspections with City of Winnipeg, and Contract Administrator.

1.3 DEFINITIONS

.1 The following are definitions of terms and expressions used in the specification:

.1 SUPPLY AUTHORITY means electrical power utility company responsible for delivery of electrical power to project.

.2 ELECTRICAL CODE means the current edition of the Canadian Electrical Code or Local Electrical Code in effect at project location.

.3 INDICATE means as shown or noted on the construction documents.

.4 PROVIDE means to supply, install and leave in working order all materials and necessary wiring, supports, access panels, etc., as necessary for equipment indicated.

1.4 SUPERVISION

.1 Supervision shall be carried out at all times by a responsible and competent supervisor.

.2 Full co-operation 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 the Contract Administrator requests relocation before the work has been substantially completed, without additional cost.

.3 Branch circuit wiring shall be installed with circuits arranged as indicated. Conduit and cable runs may be modified to suit the installation.

.4 Electrical Sub-Contractor shall provide a typical mock-up of one area if requested prior to complete rough-in.

1.6 SUBMITTALS

.1 Submit shop drawings to Contract Administrator for review. Shop drawings shall be submitted to shopdrawings@eppsiepman.com. Manufacture of equipment shall not proceed until Contract Administrator has reviewed shop drawings. Shop drawings shall be reviewed by the Electrical Sub-Contractor, general contractor, and where applicable the Utility prior to submittal to Contract Administrator, confirming that they meet all the design requirements.

.2 Provide maintenance materials as specified. Turn over maintenance materials to the City of Winnipeg at or near project completion.

.3 Provide operation and maintenance data for incorporation into Operation and Maintenance Manuals (O&M's). Include technical data, schematic diagrams and contact information for local suppliers. O&M information shall be submitted to Contract Administrator for review prior to completed manuals submittal to the City of Winnipeg.

.4 Submit a Certificate of Acceptance from the local Contract Administrator, and the fire alarm verification report and certificate, and include with the O&M data.

.5 Maintain a record set of As-Built drawings on the site at all times recording any changes that may occur. At project completion, the As-Builts shall be transferred to AutoCAD file format by the Electrical Sub-Contractor. Submit the As-Builts to the Contract Administrator complete with a printed pdf copy on disk or via email or internet transfer. As-builts shall include circuiting of new and existing equipment to remain, main conduit and feeder runs, including below floor/grade installations. Include depth of cables on where buried.

.6 The Contract Administrator will recommend a suitable deficiency holdback until required documentation and material is submitted.

1.7 TEST

.1 The electrical installation shall be completely tested demonstrating that the equipment and systems installed perform in the manner intended.

1.8 GUARANTEE

.1 The satisfactory operation of all work shall be guaranteed for a period of 12 calendar months after final acceptance of the building, unless noted otherwise.

1.9 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.

1.10 GROUNDING

.1 The entire installation shall be grounded in accordance with the Electrical Code.

1.11 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 (electrical room only), 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 All conduit must be clipped to structural concrete by means of anchors or supported by Unistrut hangers as close to U/S as possible. Tie wraps for wire hanging and fastening is not acceptable, unless otherwise indicated. Perforated strapping is also unacceptable.

.6 All support material for all luminaires, outlet boxes, junction boxes, etc. in a non-combustible building shall be of non-combustible material. Wood is not acceptable.

1.12 IDENTIFICATION OF EQUIPMENT

.1 Electrical equipment including distribution, cabinets, exterior pole mounted luminaires and stainless steel device cover plates shall be identified using an engraved lamacoid nameplate, either screwed or riveted in place.

.2 Where nylon cover plates are utilized for wiring devices, the identification shall be of the plastic self-adhesive type. The utilization of Dymo 6000 or equal is acceptable.

.3 Conduit shall be identified using color coded self-adhesive tape.

1.13 CUTTING AND PATCHING

.1 Arrange and pay for all cutting and patching as required for the electrical installation.

1.14 WIRING METHODS

.1 Unless otherwise indicated, all wiring shall be copper, minimum #12 AWG with 90°C x-link insulation. #14 AWG may be utilized where permitted by the Electrical Code for residential suites only.

.2 Surface wiring to be installed in conduit. NMD-90 is acceptable where recessed in wood-construction.

.3 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.

.4 Home runs shall be in conduit. Maximum run of AC-90 in accessible ceiling space shall be 5'-0".

.5 All wiring in finished areas shall be concealed. Conduits shall be run at right angles to the building lines.

.6 Conduit and wiring shall be grouped where possible and clipped in a neat and workmanlike manner.

.7 Electrical Sub-Contractor to perform voltage drop calculations on site with final installation lengths to confirm wire size.

1.15 MOUNTING

.1 Mounting height of equipment is from finished floor to centreline of equipment unless specified or indicate otherwise.

.2 If mounting height of equipment is not indicated, verify with Contract Administrator before proceeding with installation.

.3 Mounting heights shall match existing unless noted otherwise with exception to new fire alarm devices.

.4 Install electrical equipment at the following heights unless indicated or directed otherwise.

.1 Outlets above counters: 150mm (6")

.2 General receptacles, telephone and television outlets: 400mm (16").

.3 Receptacles in mechanical and shop areas: 1000mm (40").

.4 Switches, dimmers, push buttons, thermostats: 1200mm (47").

.5 Coordinate with Architectural elevations.

26 03 10 MINOR ELECTRICAL DEMOLITION FOR REMODELING

.1 The building shall remain open and in normal operation as required during the construction period of this contract.

.2 The construction documents indicate major items of equipment and/or devices that are existing to remain, existing to be deleted or existing to be relocated and may not indicate every item or supporting wiring and conduit to be deleted and/or relocated. Be responsible for determining which existing equipment and/or devices are to be deleted or relocated by examining the site and construction documents.

.3 Report any discrepancies to the Contract Administrator before disturbing the existing installation. Beginning of demolition work means contractor accepts existing conditions.

.4 Where existing services such as electrical power, fire alarm system, or communications systems, are required to be disrupted and/or shutdown, coordinate the shut-downs with the 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 shutdowns and ensure that the duration is kept to a minimum. A written schedule of each disruption shall be submitted to the the City of Winnipeg for approval at least 72 hours in advance of performing the related work. Obtain The City of Winnipeg's written consent prior to implementing the shutdown.

.5 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 The City of Winnipeg.

.6 Where existing devices (receptacles, switches) 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.

.7 Existing junction boxes shall remain accessible. Relocate as required, or provide access panels rated for wall, floor or ceiling assemblies as required.

.8 Where luminaires are to have lamps, ballasts or drivers replaced, include all materials and labor to replace lamp sockets and clean the interior of the fixtures reflective surfaces and finishes.

.9 Where existing circuiting is modified, include updating of existing identification for devices and equipment to match the existing identification standards.

.10 Where existing panelboard circuits are modified, or rearranged, provide new typewritten panel directories indicating updated circuiting arrangements. Any breakers freed up from demolition shall be used for the renovation where applicable, or shall become spare and labelled accordingly.

.11 Disconnect and remove all wiring, conduit or equipment back to source for items that are redundant/abandoned, or being demolished.

.12 Turn over any equipment to the City of Winnipeg as indicated.

.13 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.

.14 It shall be the responsibility of the Electrical Sub-Contractor to ensure that any coring of holes through wall, floor or ceiling assemblies will not penetrate or damage existing structure, assemblies, conduit, wiring or equipment. Be responsible to take any and all action necessary to correct any damages at no additional cost to the the City of Winnipeg. Coring shall be coordinated with all trades prior to implementation.

.15 Where new ceilings are to be installed, existing devices are to be relocated to new ceiling unless otherwise noted. Reroute/extend/re-feed all wiring, conduit, equipment to suit.

26 05 35 OUTLET BOXES

.1 Outlet, junction and switch boxes shall be sheet metal galvanized steel of size and type to suit each individual application.

.2 Gang boxes shall be used. Sectional boxes shall not be used.

.3 Outlet boxes shall not be installed back to back in walls. Provide a minimum separation of 150mm (6") between boxes in back to back installations. Provide a minimum separation of 600mm (24") between boxes in acoustic walls.

26 06 22 MISCELLANEOUS APPARATUS AND APPLIANCES

1.1 GENERAL

.1 Provide all required electrical devices, components, conduits, fittings, wiring, disconnects, and miscellaneous equipment to make all connections to equipment.

.2 Be familiar with the apparatus being supplied and carefully coordinate and cooperate with the supplier/installer to ensure a proper and complete installation.

.3 Provide all control wiring for The City of Winnipeg supplied equipment and as indicated.

1.2 RECEPTACLES

.1 Where equipment has line cord and plug, ensure cap is compatible with receptacle. Provide cord sets to equipment where required.

26 27 26 WIRING DEVICES

.1 Colours of receptacles, switches, outlets and coverplates shall be white. Confirm colour of devices with Contract Administrator.

.2 Wiring devices within public or common area spaces shall be standard style, commercial specification grade with stainless steel coverplates.

.3 Wiring devices within residential suites, shall be decorator style, residential grade with nylon coverplates.

.4 Utilize weather resistant receptacles complete with UV rated nylon and stainless steel mounting screws complete with metallic while-in-use covers for exterior applications. Substitute metallic covers with thermoplastic covers for residential suite applications only.

.5 Dimmer controls shall be rated to suit the application, and the luminaire type specified. Use Lutron Nova T series.

.6 Dimmer controls within residential suites only, shall be Lutron Maestro series.

END OF SECTION

APEGM
Certificate of Authorization
Epp Siepman Engineering Inc.
No. 4035 Date: 2015.02.18

No.	DATE	ISSUANCE
A	15.02.18	ISSUED FOR CONSTRUCTION

Seal

PROVINCE OF MANITOBA
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Project

BID OPPORTUNITY 149-2015
TURTLE ISLAND COMMUNITY CENTRE
RENOVATIONS
510 KING STREET

Sheet Title

SPECIFICATIONS

Project No. 14099

Date FEBRUARY 18, 2015

Sheet **E1.1**