

ADDRESS: 836 RUE ST. JOSEPH PROJECT No: 2010-031 SHEET TITLE: ELECTRICAL, TOXIC GAS DETECTION & BUILDING SECURITY SYSTEM SPECIFICATIONS DATE: 2012.03.09 FILE NAME: 2010031E10.dwg

1.1 ELECTRICAL SPECIFICATIONS

- 1. REFER TO DRAWINGS, NOTES 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 LATEST 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 WIRING RUNS AS SPECIFIED OR INQUIRE THROUGH CONTRACT ADMINISTRATOR BEFORE INSTALLATION BEGINS.
7. ARRANGE FOR, AND COORDINATE, ROUGH-IN AND FINAL INSPECTIONS WITH INSPECTION AUTHORITIES, CONTRACT ADMINISTRATOR.
8. 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 RECEPTABLES.

1.2 EXAMINATION

- 1 EXAMINE THE ARCHITECTURAL, STRUCTURAL, MECHANICAL & ELECTRICAL DRAWINGS TO ENSURE THAT THE WORK UNDER THIS CONTRACT CAN BE SATISFACTORILY CARRIED OUT. REPORT ANY DISCREPANCIES TO THE CONTRACT ADMINISTRATOR.
2 THE CONTRACTOR SHALL EXAMINE THE SITE, LOCAL CONDITIONS AND CONSIDER HOW THEY MAY AFFECT THE PROJECT.

1.3 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.

1.4 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 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.

1.5 APPROVAL OF MATERIAL

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

1.6 SHOP DRAWINGS

- 1 PROVIDE A MINIMUM OF FIVE (5) COPIES OF SHOP DRAWINGS TO 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 CONTRACTOR. THE REVIEW SHALL NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY TO MEET THE REQUIREMENTS OF THE CONTRACT DOCUMENTS. THE CONTRACTOR 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 ORDERING OR FABRICATION OF EQUIPMENT SHALL NOT COMMENCE UNTIL SHOP DRAWINGS OF SUCH EQUIPMENT HAVE BEEN REVIEWED AND APPROVED BY THE CONTRACT ADMINISTRATOR. TWO SETS SHALL BE SUBMITTED WITH LOCAL INSPECTION DEPARTMENT APPROVAL WHERE REQUIRED.
4 THE CONTRACTOR SHALL REVIEW ALL SHOP DRAWINGS REQUIRING ELECTRICAL CONNECTION AND COORDINATE VOLTAGE AND SIZES IN ACCORDANCE WITH THE LATEST CANADIAN ELECTRICAL CODES.

1.7 AS-BUILT DRAWINGS

- 1 KEEP A RECORD SET OF DRAWINGS ON THE SITE AT ALL TIMES & RECORD ANY CHANGES THAT MAY OCCUR ON THIS RECORD DRAWING SET. SUBMIT THESE DRAWINGS TO THE CONTRACT ADMINISTRATOR UPON COMPLETION OF THE WORK. AS-BUILTS SHALL INCLUDE TAGGING EXISTING AND NEW CIRCUITS AND EQUIPMENT.
2 SUBMIT A CERTIFICATE OF INSPECTION FROM THE LOCAL INSPECTION AUTHORITY UPON COMPLETION OF WORK AND INCLUDE IN 'AS-BUILT' DRAWINGS.
3 THE CONTRACT ADMINISTRATOR RESERVES THE RIGHT TO RECOMMEND A PORTION OF THE CONTRACT FUNDS BE WITHHELD PENDING SUBMISSION OF ACCEPTABLE AS-BUILT DRAWINGS.

1.8 TESTING

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

1.9 GUARANTEE

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

1.10 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.

1.11 GROUNDING

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

1.12 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 AC-90 TO CEILING SYSTEM IS PROHIBITED.
6 ALL CONDUITS MUST BE CLIPPED TO STRUCTURAL CONCRETE BY MEANS OF SUITABLE 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 HANGERS SHALL CONFORM TO LATEST EDITION OF CANADIAN ELECTRICAL CODE AND/OR MANUFACTURERS' INSTALLATION INSTRUCTIONS.

2.1 MATERIALS AND INSTALLATION

2.2 ELECTRICAL BOXES

- 1 OUTLET, JUNCTION AND SWITCH BOXES SHALL BE GALVANIZED PRESSED STEEL OF SIZE AND TYPE TO SUIT EACH INDIVIDUAL APPLICATION. OUTLET & SWITCH BOXES TO BE GANG-ABLE TYPE.
2 SEAL ALL AROUND EXTERIOR OUTLET BOXES, LIGHT FIXTURES, JUNCTION BOXES WITH APPROVED SEALANT OR WEATHERPROOF GASKETS.
3 CONCEAL ALL INTERIOR & EXTERIOR OUTLET & SWITCH BOXES WITHIN NEW WALLS PRIOR TO INSTALLATION OF SHEATHING.

2.3 WIRING METHODS

- 1 UNLESS OTHERWISE SHOWN ON THE DRAWINGS, ALL WIRE SHALL BE COPPER MINIMUM #12 AC-90.
2 CONDUITS INSTALLED IN AREAS EXPOSED TO MOISTURE SHALL HAVE WATERTIGHT FITTINGS.
3 CONDUIT AND WIRING SHALL BE GROUPED WHERE POSSIBLE AND CLIPPED IN A NEAT AND WORKMANLIKE MANNER.
4 ALL AC-90 USED FOR DROPS SHALL BE RUN TIGHT TO DECK AND FOLLOW LINES OF BEAMS AND BUILDING.

2.4 IDENTIFICATION OF EQUIPMENT

- 1 ALL EQUIPMENT SHALL BE IDENTIFIED WITH 3/8" X 1-1/2" (1 1/8" LETTERS) ENGRAVED LAMACOID NAMEPLATES INDICATING PANEL AND CIRCUIT NUMBER DESIGNATION. LAMACOIDS SHALL BE EITHER SCREWED OR RIVETED IN PLACE. WITH EXCEPTION TO RECEPTACLES AND LIGHTING SWITCHES, SELF ADHESIVE TYPE IS ACCEPTABLE. DYMO SELF-ADHESIVE WITH BLACK LETTERING ON WHITE SELF-ADHESIVE IS ACCEPTABLE FOR RECEPTABLES FACEPLATES, JUNCTION BOX COVER-PLATES, GAS TRANSMITTERS, RELAYS & FAN (EF-1).

2.5 INTERIOR LIGHTS

- 1 ALL FLUORESCENT FIXTURES SHALL BE COMPLETE WITH ELECTRONIC BALLASTS, AND LAMPS, AS PER LIGHT SCHEDULE.
2 ALL FLUORESCENT LAMPS SHALL BE 3500 K AND 82 CRI MINIMUM, UNLESS NOTED OTHERWISE.
3 ALL WIRING FROM PANEL 'G' TO INTERIOR LIGHT FIXTURES TO BE AC-90.
4 CONTRACTOR TO PROVIDE 2"X4" SUPPORT BLOCKING FOR CEILING MOUNTED FIXTURES. INSTALL BETWEEN CEILING JOISTS. FASTEN & SECURE FIXTURES TO SUPPORTS.

2.6 EXTERIOR LIGHTS

- 1 WALL MOUNTED METAL HALIDE LIGHT FIXTURES TO BE COMPLETE WITH ELECTRONIC BALLASTS, LAMPS & METAL GUARDS AS PER LIGHT SCHEDULE.
2 RECESSED METAL HALIDE LIGHT FIXTURES TO BE COMPLETE WITH BALLASTS, LAMPS & METAL GUARDS AS PER LIGHT SCHEDULE.
3 ALL WIRING FROM PANEL 'G' TO EXTERIOR LIGHT FIXTURES TO BE AC-90.

- 4 ALL EXTERIOR FIXTURES SHALL HAVE VANDAL-PROOF GUARDS INSTALLED AND POWDER COATED BLACK. PROVIDE SUPPORT BLOCKING AND LAG BOLT THROUGH BACK-PLATES INTO INTERIOR WALL SUPPORTS. MOUNT FIXTURES CENTERED ON EXTERIOR SIDING BOARD HEIGHTS.

2.7 CUTTING AND PATCHING

- 1 ARRANGE AND PAY FOR ALL CUTTING AND PATCHING AS REQUIRED FOR THE ELECTRICAL INSTALLATION.
2 REFER TO ARCHITECTURAL SPECIFICATIONS FOR PRODUCTS AND INSTALLATION DETAILS.

2.8 POWER 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/S.

2.9 SWITCHES

- 1 COLOR OF SWITCHES SHALL BE BLACK. COVER PLATES TO BE STAINLESS STEEL.
2 SWITCHES SHALL BE HUBBELL, ARROW HART, BRYANT, LEVITON, WOODHEAD, PASS & SEYMOUR, 15 AMPS, 240 / 347 VAC.
3 MOUNT 47" FROM CENTER OF DEVISE BOXES TO FINISHED CONCRETE SLAB UNLESS OTHERWISE NOTED.

2.10 INTERIOR RECEPTACLES

- 1 COLOR OF INTERIOR RECEPTACLES SHALL BE BLACK. COVER PLATES TO BE STAINLESS STEEL.
2 MOUNT 42" FROM CENTER OF DEVISE BOXES TO FINISHED CONCRETE SLAB UNLESS OTHERWISE NOTED.
3 ACCEPTABLE MANUFACTURERS FOR RECEPTACLES SHALL BE HUBBELL, ARROW HART, BRYANT, LEVITON, WOODHEAD, PASS & SEYMOUR.

2.11 (GFCI) EXTERIOR RECEPTACLES

- 1 COLOR OF GROUND FAULT CIRCUIT INTERRUPTERS (GFCI) SHALL BE BLACK.
2 MOUNT ± 42" FROM CENTER OF DEVISE BOXES TO FINISHED CONCRETE SLAB.
3 ACCEPTABLE MANUFACTURERS FOR RECEPTACLES SHALL BE HUBBELL, ARROW HART, BRYANT, LEVITON, WOODHEAD, PASS & SEYMOUR.

2.12 ELECTRICAL ROUGH-IN FOR BUILDING SECURITY ALARM SYSTEM

- 1 ALL CONDUIT RUNS FROM BUILDING ALARM CONTROL PANEL TO CEILING MOUNTED PULL BOXES TO BE 1" IN DIAMETER, UNLESS OTHERWISE NOTED. ALL CONDUIT RUNS FROM PULL BOXES TO BUILDING ALARM COMPONENTS TO BE 1/2" DIAMETER. INSTALL EQUIPMENT AND CONDUITS IN A WORKMANLIKE MANNER TO PRESENT A NEAT APPEARANCE TO THE SATISFACTION OF THE CONTRACT ADMINISTRATOR. INSTALL WALL & CEILING CONDUIT RUNS PARALLEL AND PERPENDICULAR TO BUILDING LINES. INSTALL ALL EXPOSED CONDUITS NEATLY AND GROUP TO PRESENT A TIDY APPEARANCE. ALL CONDUITS REFERENCED IN WORK TO BE EMT (ELECTRICAL METALLIC TUBING).
2 INSTALL ALL CEILING PULL BOXES BETWEEN AND ABOVE CEILING JOISTS BEHIND 2 X 4 WOOD BLOCKING WITH COVERS FACING UP.
3 INSTALL CEILING OCTAGON BOXES BETWEEN AND ABOVE CEILING JOISTS. FASTEN TO 2 X 4 WOOD BLOCKING WITH COVERS FACING DOWN.
4 INSTALL EQUIPMENT REQUIRING MAINTENANCE, ADJUSTMENT OR EVENTUAL REPLACEMENT WITH ADEQUATE CLEARANCES AND ACCESSIBILITY FOR SAME.
5 ALL FASTENERS TO BE CORROSION RESISTANT.
6 REPLACE WORK UNSATISFACTORY TO THE CONTRACT ADMINISTRATOR WITHOUT EXTRA COST.
7 ALL CONDUITS TO BE FASTENED TO WALLS, BETWEEN AND ABOVE CEILING JOISTS BY MEANS OF SUITABLE ANCHORS AND SUPPORTED BY 2X4 WOOD BLOCKING. ALL ELECTRICAL COMPONENTS MUST BE SUPPORTED INDEPENDENTLY.

3.0 CO & NO2 STAND ALONE 120 VOLT FOR UNHEATED AREAS

SUITABLE FOR SMALL APPLICATIONS WHERE THE VENTILATION SYSTEM WILL BE HOOKED UP DIRECTLY TO THE E3 STAND-ALONE MONITOR/S.

PART 1 - GENERAL

- 1.1 SCOPE OF WORK:
PROVIDE ALL LABOUR, MATERIALS, PRODUCTS, EQUIPMENT AND SERVICE TO SUPPLY AND INSTALL A CO AND DIESEL DETECTION AND CONTROL SYSTEM AS INDICATED ON THE DRAWINGS AND SPECIFIED IN THIS SECTION.

1.2 REFERENCE STANDARDS:

UNITS SHALL BE CERTIFIED TO ANSIIUL 61010-1 AND CSA-C22.2 NO. 61010-1 STANDARDS. MANUFACTURER SHALL BE CERTIFIED ISO-9001-2000.

PART 2 - PRODUCTS

2.1 ACCEPTABLE PRODUCTS:

HONEYWELL ANALYTICS MODEL E3SAHSCO STAND-ALONE CO MONITOR
HONEYWELL ANALYTICS MODEL E3SAHSNO2 STAND-ALONE CO MONITOR

THE MONITOR WILL BE POWERED BY 120 V_{ac}. THE MONITOR WILL INCORPORATE AN ELECTROCHEMICAL CELL FOR TOXIC GAS MONITORING. THE MONITOR WILL BE CAPABLE OF TRANSMITTING GAS CONCENTRATIONS TO A DDC SYSTEM THROUGH ITS 4-20 mA OUTPUT. FOR LOCAL ACTIVATION OF FANS OR LOUVERS (OR OTHER EQUIPMENT), TWO ON BOARD DPDT RELAYS SA, 30 Vdc OR 250 V_{ac} (RESISTIVE LOAD) WILL BE ACTIVATED AT PROGRAMMABLE SET POINTS (AND PROGRAMMABLE BEFORE AND AFTER TIME DELAYS), AN 8 CHARACTER, 2 LINE BACKLIT LCD DISPLAY WILL PROVIDE LOCAL GAS CONCENTRATION READINGS. TRANSMITTER WILL BE CAPABLE OF OPERATING WITHIN RELATIVE HUMIDITY RANGES OF 5 - 95% NON-CONDENSING AND TEMPERATURE RANGES OF -4° F TO 104° F (-20° C TO 40° C). THE TRANSMITTER WILL HAVE A PLUG-IN CAPACITY FOR A GAS CARTRIDGE WITH A SMART SENSOR TECHNOLOGY WITH SELF-TESTING CAPABILITIES ACCURACY OF ± 3% OF FULL SCALE @ 25 C. ENCLOSURE WILL BE POLYCARBONATE WITH RUBBERIZED SEALED COVER AND LED VISUAL INDICATIONS FOR POWER, ALARM & FAULT CONDITIONS. FOR LOCAL ACTIVATION OF AUDIBLE ALARMS, THE MONITOR SHALL HAVE AN ON-BOARD DEVICE ABLE TO GENERATE AN AUDIBLE OUTPUT OF 85 DBA @ 10FT (3m). TRANSMITTERS WILL BE PROTECTED ALL AROUND UNIT WITH 20 GAUGE ALUMINUM REMOVABLE PROTECTIVE COVERS WITH CUTOUTS FOR THE LED READOUT, CONTROLS & SENSOR LOCATIONS. MONITOR ALARM LEVELS ARE TO ACTIVATE AND THE UNIT IS TO BE INSTALLED IN ACCORDANCE WITH THE FOLLOWING PARAMETERS: SEE CO & NO2 SCHEDULE DWG M1. TRANSMITTERS TO BE INTER-CONNECTED TO MONITORED BUILDING ALARM PANEL SYSTEM. TRANSMITTERS WILL BE INTER-CONNECTED TO ON-BOARD RELAYS TO ACTIVATE VENTILATION SYSTEM. TRANSMITTERS TO BE INTER-CONNECTED TO ELECTRICAL FAN (EF-1) AND REMOTE MANUAL ELECTRONIC TIMER SWITCH FOR FAN OVER-RIDE.

PART 3 - EXECUTION

- 3.1 PROVIDE COMPLETE START-UP, TESTING & COMMISSIONING SERVICE WITH WRITTEN REPORTS BY THE MANUFACTURERS AUTHORIZED REPRESENTATIVE.
3.2 PROVIDE 2 YEAR SERVICE AGREEMENT FROM THE DATE OF SUBSTANTIAL COMPLETION DATE.
3.3 PROVIDE DEMONSTRATION & TRAINING FOR ON-SITE STAFF.
3.4 PROVIDE CALIBRATION FOR 3 YEARS, ONCE PER YEAR PER MONITOR.
3.5 CONTRACTOR TO PROVIDE THREE (3) COPIES OF EQUIPMENT O&M'S TO CONTRACT ADMINISTRATOR.

NOTES:
ALSO SEE CIVIL, ARCHITECTURAL, STRUCTURAL & MECHANICAL DWGS.

ORIGINAL STAMPED BY: DOUG PALEY
DATE: 2012.03.09

Table with 4 columns: No., REVISION/DESCRIPTION, BY, DATE

Table with 4 columns: DRAWN, RCP, CHECKED, DAP, DESIGNED, RCP, APPROVED, DAP

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

PROJECT
WHITTIER PARK
STORAGE BUILDING
836 RUE ST. JOSEPH

SHEET TITLE
ELECTRICAL, TOXIC GAS DETECTION & BUILDING SECURITY SYSTEM SPECIFICATIONS

Table with 3 columns: SCALE, PROJECT No, SHEET No

DRAWING SHEET SIZE: A1 (841mm x 594mm) PLOT 1:1