Township of Muskoka Lakes

Request for Tender

Contract #T-2024-35

Walker's Point Community Center Kitchen Ventilation System Upgrades

ADDENDUM #2
April 18, 2024

The following addendum shall now form part of the contract documents and amends the applicable information contained in the original contract tendering documents.

All other information contained in the original tendering documents remains unchanged.

T-2024-35 ADDENDUM #2
April 18, 2024

Clarifications to Tender (No change to the Tender):

Tender Submittal Deadline:

The Tender submittal deadline **has not changed** as a result of this Addendum.

Questions and Answers:

N/A

Modifications to Tender:

1. Appendix A – **REVISIONS:**
2. The contract drawings (E-1 to E-4 and E-6) have been revised and attached. Descriptions of the changes have been listed below.
    1. E-1: Updated to show revision cloud and scope of work clouds.
    2. E-2: Revised SLD scope of work showing CB-1 and PP-K connected to splitter box (splitter box by others), and DH-1 being fed from PP-K. Revised notes. Revised cable schedule.
    3. E-3: Removed information as per revised scope.
    4. E-4: Revised wall and floor layouts as per revised scope. Added information about provision of kitchen equipment for clarity.
    5. E-6: Revised electrical specifications to show revised scope of work, equipment and execution.

Directions to Bidder

The Bidder shall:

1. Sign this Addendum in the space provided below and submit this Addendum to the Owner in the same envelope as the Tender.
2. This addendum must be used for the submission of the bid along with the remaining Form of Tender from the tender documents.
3. Enter this Addendum number, date and number of pages on the Tender (Part III – Form of Tender Section 1.1.d)

Signature of Bidder Date

SINGLE LINE SYMBOLS AND CONTROL DIAGRAMS

SYMBOL	DESCRIPTION
	CIRCUIT BREAKER, MOULDED CASE WITH THERMAL & MAGNETIC TRIPS
	MOTOR CIRCUIT PROTECTOR (MCP) STYLE BREAKER, WITH MAGNETIC TRIPS ONLY
	NEMA SIZE 1 STARTER WITH THERMAL OVERLOAD TRIP
VFD MS BP	VARIABLE FREQUENCY DRIVE, C/W BYPASS MOTOR STARTER/CONTACTOR AND CONTROL TRANSFORMER
	CURRENT TRANSFORMER
	CAPACITOR
	CONTROL POWER TRANSFORMER (CPT)
	FUSE
	FUSIBLE DISCONNECT SWITCH
	NON-FUSIBLE DISCONNECT SWITCH
	DRY-TYPE POWER TRANSFORMER (INDOOR)
	OIL-FILLED POWER TRANSFORMER (OUTDOOR)
	SEAL (EYS) FITTING C/W CHICO POWDER
MS1	MOTOR STARTER (MS) COIL, WITH COIL SUPPRESSOR
X	PILOT LIGHT, WHERE "X" INDICATES LENS COLOR: R=RED, W=WHITE, G=GREEN
X	PUSH TO TEST STYLE PILOT LIGHT
ETM	ELAPSE TIME METER, IN HOURS
CR#	CONTROL RELAY (# DENOTES RELAY NUMBER)
	TERMINAL BLOCK
	SOLENOID VALVE
	CONTACT, N.O. AND N.C.
	TEMPERATURE SWITCH, N.O AND N.C.
	LIMIT OR POSITION SWITCH, N.O AND N.C.
	PRESSURE SWITCH, N.O AND N.C.
	LEVEL OR FLOAT SWITCH, N.O AND N.C.
	TORQUE SWITCH, N.O AND N.C.
	PUSHBUTTON DEVICE, N.O AND N.C.
	SELECTOR SWITCH, 2-POSITION & 3-POSITION

DRAWING LIST – ELECTRICAL

LIGHTING AND POWER ELECTRICAL SYMBOLS

SYMBOL	DESCRIPTION
X	1'x4' FLUORESCENT LUMINAIRE. "X" DENOTES LUMINAIRE TYPE (REFER TO LUMINAIRE SCHEDULE).
A–2a	A = DENOTES SWITCH LEG; 2 = DENOTES BRANCH CIRCUIT NUMBER; a = DENOTES PANEL DESIGNATION
X	2'x4' FLUORESCENT LUMINAIRE. "X" DENOTES LUMINAIRE TYPE (REFER TO LUMINAIRE SCHEDULE)
X	CEILING MOUNTED LUMINAIRE – "x" DENOTES TYPE
X	WALL MOUNTED LUMINAIRE – "x" DENOTES TYPE
X	EXIT LIGHT – "x" DENOTES TYPE
S T	LIGHT SWITCH C/W BACK BOX: – "S" INDICATES 2–WIRE SWITCH – "S3" INDICATES 3–WIRE SWITCH – "S4" INDICATES 4–WIRE SWITCH – "D" INDICATES DIMMER (SIZE TO SUIT) – "T" INDICATES MANUAL TIMER – "M" INDICATES MOTION DETECTOR
	EMERGENCY REMOTE HEADS
	EMERGENCY BATTERY UNIT WITH REMOTE HEADS AND CHARGER (BU#)
	EMERGENCY REMOTE HEADS: EXPLOSION PROOF – CLASS 1 DIV. 1&2
	ELECTRICAL PANEL/ENCLOSURE
	DUPLEX RECEPTACLE
	SINGLE RECEPTACLE
GFI	GFI TYPE DUPLEX RECEPTACLE
	SPLIT DUPLEX RECEPTACLE
D	DRYER RECEPTACLE
	HARD WIRED CONNECTION
	SINGLE PHASE MOTOR
	THREE PHASE MOTOR
	SINGLE PHASE MANUAL STARTER SWITCH WITH LOCK–OFF AND PILOT LIGHT
	MANUAL STARTER SWITCH C/W PILOT LIGHT AND HAND/OFF/AUTO SELECTOR SWITCH
	CONTROL STATION OR PANEL
#	DISCONNECT SWITCH, UN–FUSED, # DENOTES NUMBER OF POLES
K	UNAUTHORIZED ENTRY KEYPAD UNIT
DS	MAGNETIC REED DOOR SWITCH
MD	MOTION SENSOR
SD	SMOKE DETECTOR
	TELEPHONE OUTLET
	DATA OUTLET
JB	JUNCTION BOX
Tv	THERMOSTAT (VENTILATION)
TH	THERMOSTAT

GENERAL SYMBOLS

X / YZ	DETAIL SYMBOL: X = DETAIL NUMBER YZ = DRAWING NUMBER
	EQUIPMENT SUPPLIED BY ANOTHER DIVISION, INSTALLATION, WIRING AND CONDUIT BY DIVISION 16
	EXISTING OR RELOCATED EQUIPMENT, NEW WIRING AND CONDUIT BY DIVISION 16
4	SYMBOL INDICATES A REVISION, (# DENOTES REVISION NUMBER)
#	SYMBOL INDICATES MODIFICATION OR NEW WORK NOTE (# DENOTES NOTE NUMBER)
#	SYMBOL INDICATES A REMOVAL NOTE (# DENOTES NOTE NUMBER)

REVISION CLOUD

SCOPE OF WORK

STANDARD ABBREVIATIONS – ELECTRICAL

ABBREVIATION	DESCRIPTION
A	AMPERES (CONTINUOUS)
AC	ALTERNATING CURRENT
ASYM	ASYMMETRICAL
ATS	AUTOMATIC TRANSFER SWITCH
AUTO	AUTOMATIC
AWG	AMERICAN WIRE GAUGE
BU	BATTERY UNIT (EMERGENCY)
°C	DEGREE CELSIUS
C	CONDUCTOR
CCT	CIRCUIT
℄	CENTERLINE
C/W	COMPLETE WITH
CPT	CONTROL POWER TRANSFORMER
CSA	CANADIAN STANDARDS ASSOCIATION
CT	CURRENT TRANSFORMER
Cu	COPPER
DC	DIRECT CURRENT
DISC	DISCONNECT
DPDT	DOUBLE POLE DOUBLE THROW
DPST	DOUBLE POLE SINGLE THROW
EEMAC	ELECTRICAL AND ELECTRONIC MANUFACTURERS ASSOCIATION OF CANADA
EP	EXPLOSION PROOF (SEE "CLASSIFICATION SUMMARY")
ETM	ELAPSED TIME METER
ESA	ELECTRICAL SAFETY AUTHORITY
GFI	GROUND FAULT INTERRUPTER
GND	GROUND
HOA	HAND–OFF–AUTOMATIC
HP	HORSEPOWER
Hz	HERTZ
IEEE	INSTITUTE OF ELECTRICAL & ELECTRONIC ENGINEERS
INST	INSTANTANEOUS
I/O	INPUT/OUTPUT
ISB	INTRINSIC SAFETY BARRIER
JB	JUNCTION BOX
kAIC	KILO–AMP INTERRUPTING CAPACITY
kVA	KILOVOLTAMPERE
kW	KILOWATT
kWh	KILOWATT HOUR
kV	KILOVOLT
LA	LIGHTNING ARRESTOR
LOR	LOCAL–OFF–REMOTE
LUC	LOCAL UTILITY COMPANY
MAN	MANUAL
MCC	MOTOR CONTROL CENTRE
MH	MANHOLE
mm	MILLIMETER
MOT	MOTOR
N	NEUTRAL
NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
N/A	NON AUTOMATIC
N.O.	NORMALLY OPEN
N.C.	NORMALLY CLOSED
NP	NAMEPLATE
NTS	NOT TO SCALE
OESC	ONTARIO ELECTRICAL SAFETY CODE
O/H	OVERHEAD
O/L	OVERLOAD
OO	ON–OFF
PB	PUSHBUTTON
PDC	POWER DISTRIBUTION CENTRE
PH. OR ø	PHASE OR DIAMETER
PLC	PROGRAMMABLE LOGIC CONTROLLER
REM	REMOTE
RGS	RIGID GALVANIZED STEEL
RPVC	RIGID PVC CONDUIT
SN	SOLID NEUTRAL
SPDT	SINGLE POLE DOUBLE THROW
SPMDD	STANDARD PROCTOR MAXIMUM DRY DENSITY
SPST	SINGLE POLE SINGLE THROW
SS	STAINLESS STEEL
SW	SWITCH
SYM	SYMMETRICAL
TDC	TIME DELAY ON CLOSING
TDDO	TIME DELAY ON DROP–OUT (OR OFF TIMER)
TDO	TIME DELAY ON OPENING
TDPU	TIME DELAY ON PICK–UP
TYP.	TYPICAL
U/G	UNDERGROUND
VA	VOLT–AMPERE
VFD	VARIABLE FREQUENCY DRIVE
WP	WEATHERPROOF
316SS	316 STAINLESS STEEL

MASTER ELECTRICAL LEGEND

ALL SYMBOLS/DEVICES/ABBREVIATIONS LISTED MAY NOT APPLY

CONTRACTOR MUST VERIFY ALL DIMENSIONS AND BE RESPONSIBLE FOR SAME. ANY DISCREPANCIES MUST BE REPORTED TO THE ENGINEER BEFORE COMMENCING WORK. DRAWINGS ARE NOT TO BE SCALED.

3

NOTES

No.	REVISION DESCRIPTION	DATE
1	ISSUED FOR CLIENT REVIEW	FEB/24
2	ISSUED FOR TENDER	FEB/24
3	ISSUED FOR ADDENDUM 2	APR/24

ENGINEER SEAL

LICENSED PROFESSIONAL ENGINEER
S. R. S. TAYLOR
100518503
18APR'24
PROVINCE OF ONTARIO

WALKERS POINT COMMUNITY CENTER

TOWNSHIP OF MUSKOKA LAKES

TATHAM ENGINEERING

ELECTRICAL

LEGEND AND DRAWING LIST

DESIGN: JES	FILE: 123244	DWG: E-1
DRAWN: JES	DATE: SEP 2023	
CHECK: SRT	SCALE: AS SHOWN	

Drawing Name: 123244 – E-1 to E-5.dwg, Plotted: Apr 18, 2024

POWER CABLE SCHEDULE

EX01	3C#750MCM + GND, AL, RW90 IN FROM U/G DUCTBANK
PC02	3C#1/0AWG + #6AWG GND, Cu, TECK CABLE
PC03	2C#2AWG + #6AWG GND, Cu, TECK CABLE
PC04	3C#3/0AWG + #6AWG GND, Cu, TECK CABLE

POWER CABLE BY OTHERS

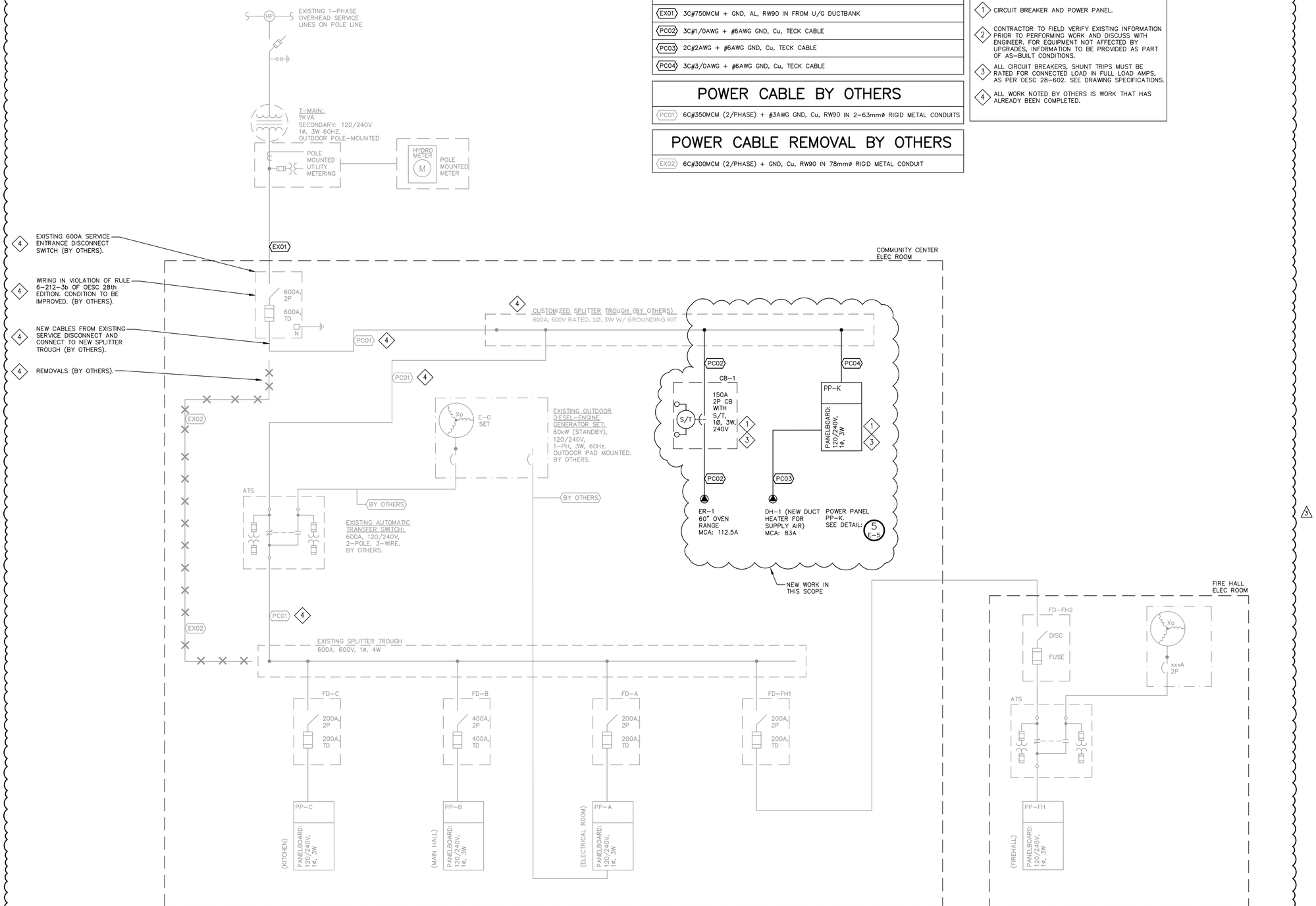
PC01	6C#350MCM (2/PHASE) + #3AWG GND, Cu, RW90 IN 2-63mmø RIGID METAL CONDUITS

POWER CABLE REMOVAL BY OTHERS

EX02	6C#300MCM (2/PHASE) + GND, Cu, RW90 IN 78mmø RIGID METAL CONDUIT

NOTES

1. CIRCUIT BREAKER AND POWER PANEL.
2. CONTRACTOR TO FIELD VERIFY EXISTING INFORMATION PRIOR TO PERFORMING WORK AND DISCUSS WITH ENGINEER. FOR EQUIPMENT NOT AFFECTED BY UPGRADES, INFORMATION TO BE PROVIDED AS PART OF AS-BUILT CONDITIONS.
3. ALL CIRCUIT BREAKERS, SHUNT TRIPS MUST BE RATED FOR CONNECTED LOAD IN FULL LOAD AMPS, AS PER OESC 28-602. SEE DRAWING SPECIFICATIONS.
4. ALL WORK NOTED BY OTHERS IS WORK THAT HAS ALREADY BEEN COMPLETED.



1 E-2 SINGLE LINE DIAGRAM 2
NTS

NOTES

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PROVINCE OF ONTARIO

WALKERS POINT COMMUNITY CENTER
TOWNSHIP OF MUSKOKA LAKES

TATHAM ENGINEERING

ELECTRICAL
SINGLE LINE DIAGRAM

DESIGN: JES	FILE: 123244	DWG:	E-2
DRAWN: JES	DATE: SEP 2023		
CHECK: SRT	SCALE: AS SHOWN		

Drawing Name: 123244 – E-1 to E-5.dwg, Plotted: Apr 18, 2024

NOT USED

3

DISCLAIMER AND COPYRIGHT

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18APR'24
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WALKERS POINT COMMUNITY CENTER

TOWNSHIP OF MUSKOKA LAKES

ELECTRICAL
SERVICE ENTRANCE
DISCONNECT LAYOUT

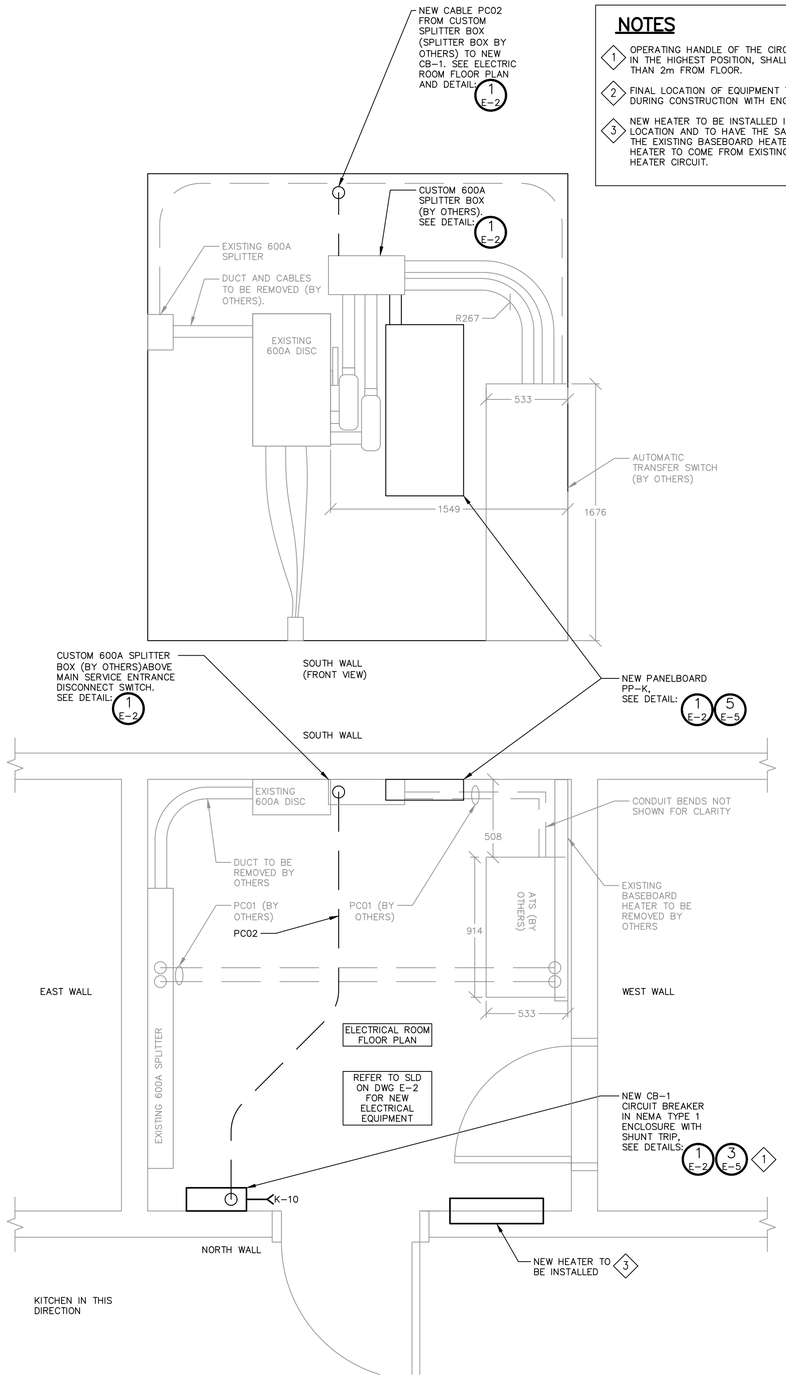
TATHAM ENGINEERING

DESIGN: JES	FILE: 123244	DWG: **E-3**
DRAWN: JES	DATE: SEP 2023	
CHECK: SRT	SCALE: AS SHOWN	

Drawing Name: 123244 – E-1 to E-5.dwg, Plotted: Apr 18, 2024

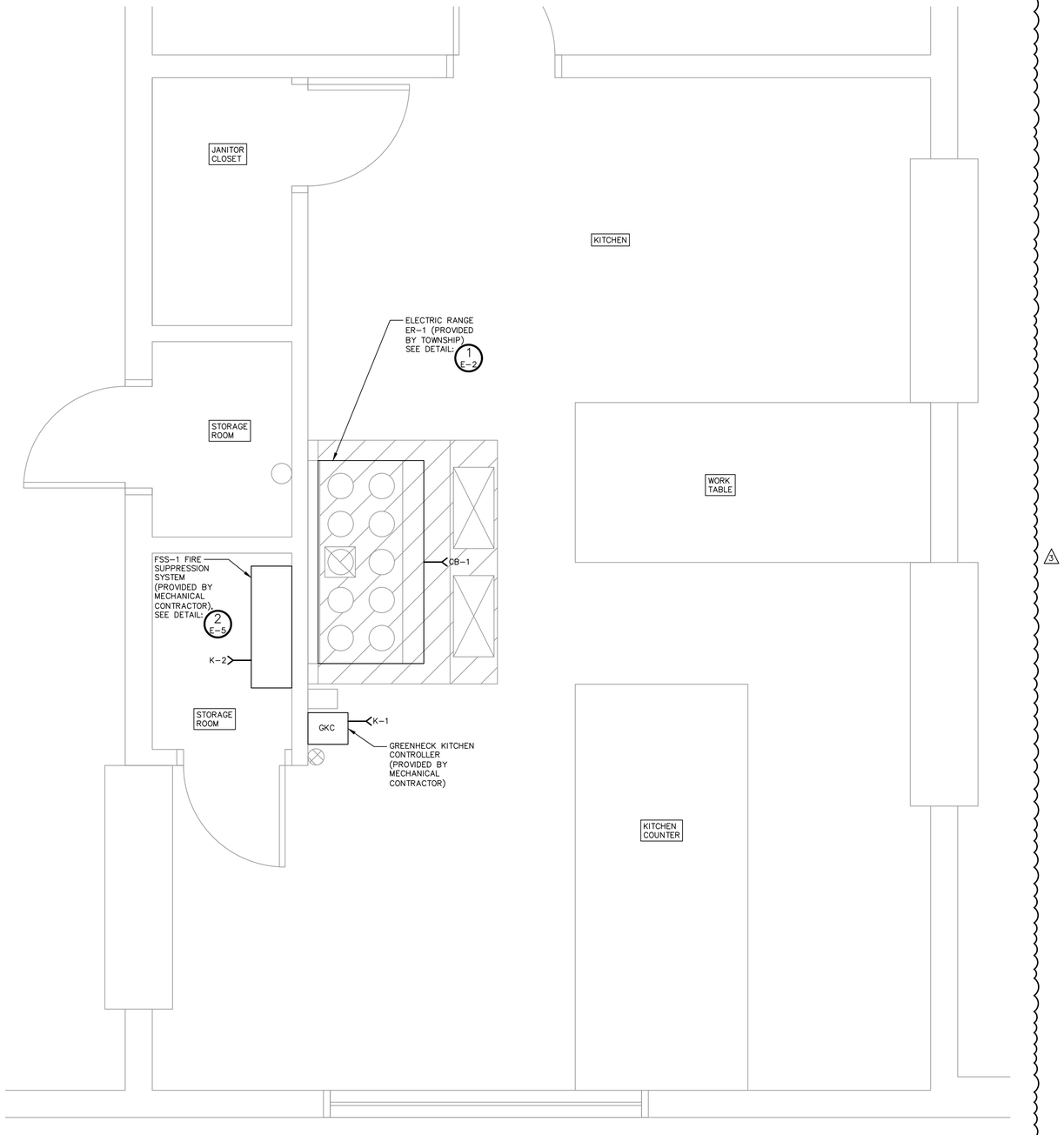
NOTES

1. OPERATING HANDLE OF THE CIRCUIT BREAKER, WHEN IN THE HIGHEST POSITION, SHALL NOT BE MORE THAN 2m FROM FLOOR.
2. FINAL LOCATION OF EQUIPMENT TO BE CONFIRMED DURING CONSTRUCTION WITH ENGINEER.
3. NEW HEATER TO BE INSTALLED IN AN ALTERNATE LOCATION AND TO HAVE THE SAME HEAT OUTPUT AS THE EXISTING BASEBOARD HEATER. POWER FOR NEW HEATER TO COME FROM EXISTING BASEBOARD HEATER CIRCUIT.



1 E-4 ELECTRICAL ROOM LAYOUT 2

- SCALE 1:20
- FOR ALTERNATE LAYOUT OF CB-1 AND PP-K, CONFIRM ARRANGEMENT WITH ENGINEER DURING CONSTRUCTION
- INSTALL ALL EQUIPMENT WITH 1m CLEARANCE IN FRONT OF EQUIPMENT AS PER OESC.



2 E-4 KITCHEN LAYOUT

- SCALE 1:20

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TATHAM ENGINEERING

ELECTRICAL

BUILDING LAYOUT

DESIGN: JES	FILE: 123244	DWG: E-4
DRAWN: JES	DATE: SEP 2023	
CHECK: SRT	SCALE: AS SHOWN	

Drawing Name: 123244 – E-1 to E-5.dwg, Plotted: Apr 18, 2024

Electrical Specifications

PART 1 – GENERAL

1.1 General

.1 In case of a discrepancy between statement(s) or value(s) in this section or contract drawing(s), the higher statement or value takes precedence and shall govern.

.2 "Local Inspector, Inspection Department or Authority" mean agents of any authority having jurisdiction over construction and safety standards associated with any part of electrical work on site, such as ESA for Ontario.

.3 "Power Supply Authority" or "LUC" means electrical local utility company responsible for delivery of electrical power to project site.

.4 "Electrical Code" or "OESC" means Ontario Electrical Safety Code C22.1 or code in force at project location, latest edition.

.5 "Indicated" means as shown on contract drawings or noted in contract documents.

.6 "Provide" means fabricate, supply, install, test and commission the electrical system and/or equipment.

.7 "Remove" or "Removed" means to disconnect, remove, and dispose of equipment, material or item.

1.2 Scope of Work

.1 Provide new shunt trip circuit breaker for new electric range as per contract drawings.

.2 Provide new panelboard as per contract drawings.

.3 Provide control wiring for HOA, kitchen controller and fire suppression system as per contract drawings.

.4 Site Acceptance Testing (SAT) Assistance: When system is ready for service, provide assistance with operating instructions and start-up procedures during scheduled commissioning. Provide all necessary assistance to place the equipment into normal operating modes and train the Township operators.

.5 Coordinate construction schedule with the Township prior to commencing work.

.6 Conduit systems, as indicated, complete with wiring and terminations.

.7 All conduit, fittings, outlets, field terminations, field wiring and cable as required, to provide a complete operating system.

.8 Include all necessary mounting hardware, channel supports and fasteners to provide a complete operating system.

.9 ESA Inspections throughout project construction stages as required. Final inspection certificate will be required for Substantial Performance.

1.3 Standards

.1 Provide all products and services in accordance with the latest addition of the following codes and standards:
- .1 Ontario Electrical Safety Code, latest edition applicable.
- .2 Canadian Standards Association.
- .3 Ontario Building Code, Latest Edition.

Electrical Specifications

1.4 Permits, Fees and Inspection

.1 Provide all licenses, permits and certificates required by the LUC at no additional expense.

.2 Arrange and pay for all required inspection(s), including but not limited to the Electrical Safety Authority.

.3 Upon completion of the Work, provide the Township with final, unconditional certificates of approval by the local inspection authorities.

1.5 Examination of the Site and Contract Documents

.1 Examine Drawings and Specifications of the complete Project and become familiar with all local site conditions.

.2 Submission of Tender confirms the Contractor accepts the Contract and site conditions without qualifications.

.3 Failure to determine the existing conditions or the nature of the construction shall not be a basis for granting compensation.

1.6 Construction Drawings

.1 The electrical drawings are diagrammatic, intended to convey the scope of work and indicate general arrangements of equipment. **Do not scale drawings unless a scale is identified.**

.2 Have the location all equipment shown in the drawings reviewed by the Township before proceeding with the installation. Inform the Township of significant changes in location of equipment to meet field conditions and receive their authorization before proceeding. Obtain from the Township the location of equipment not definitely located in the drawings.

.3 Locations of all material equipment indicated in the drawings are approximate and may be subject to revision found necessary or desirable by the Consultant at the time the work is installed. The Township may at their discretion request the relocation of electrical equipment within three metres of that shown prior to roughing in. This relocation shall be at no additional cost.

.4 Drawings do not generally indicate the number of wires within conduits for control wiring. Provide the correct wire size and quantity as required by the indicated circuitry and control diagrams.

1.7 Submissions

.1 Submit shop drawings in accordance with general Contract Conditions and include arrangement drawings, bill of materials, diagrams, nameplate drawings and product data as applicable for the following equipment:
- .1 Circuit breaker with shunt trip and enclosure.
- .2 Panelboard and breakers.

.2 Product data sheets shall include the name of the manufacturer and be clearly marked to show which items, features and options are offered.

.3 Shop drawings that are not presented as required will be returned for revision and resubmission.

.4 Submittal Procedure:
- .1 The Contractor shall submit digital copies in PDF format to the Owner and Engineer via email. All drawings are to be submitted electronically in pdf format.
- .2 The drawings will be returned to the Contractor stamped and marked "Conforms with Intended Design", "Conforms with Intended Design with Revisions Noted", or "Non-Conforming – Revise and Resubmit".
- .3 When drawings are returned "Non-Conforming – Revise and Resubmit", make the necessary alterations and resubmit.
- .4 When drawings are returned "Conforms with Intended Design with Revisions Noted", the drawings may be used to execute the work in compliance with the Contract Documents. No other alterations are to be made to the drawings by the Contractor subsequent to receipt of drawings stamped and marked as above. If further changes are made in addition to the Engineer's notations, then the drawings must be resubmitted for further review.

Electrical Specifications

- .5 When drawings are returned "Conforms with Intended Design", the Contractor shall be responsible for distribution of additional copies of Shop Drawings as necessary and as requested by the Engineer..

.5 The review of shop drawings by the Township or Engineer does not relieve the Contractor of their responsibilities for compliance with the Contract Documents.

.6 At end of project, provide PDF copy of the Operating and Maintenance Manuals of all equipment, including copies of shop drawings and all test results.

1.8 Construction Record Drawings

.1 Keep one set of all applicable contract (including updates) and shop drawings at the site.

.2 Ensure that the latest issue drawings are marked up to reflect the work as installed and have these available for the Township's review at site.

.3 Upon completion of the work, transfer all revisions to a clean set of prints and submit to Consultant for "As-Built" record as part of the final job documentation.

1.9 Finishes

.1 Shop-finish metal enclosures by application of rust resistant primer inside and out, and at least two coats of finishing enamel.

.2 Clean and touch up any surfaces on shop-painted surfaces marred during shipment or installation with paint selected to match the original.

.3 Wire brush and prime using a zinc-rich coating on any non-coated steel hangers, racks and fasteners to prevent rusting.

1.10 Warranty

.1 All material to warrantied for material and labour for one (1) year upon substantial completion.

PART 2 – PRODUCTS

2.1 Basic Materials

.1 Provide all necessary mounting brackets, hangars, etc., as required for installation.

.2 Upon delivery of equipment on site and quantities accounted for, the contractor will assume liability for damaged, lost, stolen, etc..

.3 Contractor is responsible for all labour and material costs during the for equipment failures during the warranty period.

2.2 Circuit Breaker with Shunt Trip

.1 Indoor, NEMA Type 1 enclosure.

.2 H-Frame 150A, 2 pole, 600VAC, 25kAIC at 240V, lugs, thermal magnetic, 80% with Shunt Trip Circuit Breaker Accessory, 110VAC to 130VAC.

.3 General arrangement of circuit breaker with shunt trip as indicated on electrical contract drawings. Accommodate shunt trip control wiring as indicated.

.4 Provide all necessary warning signs as required by local inspection authorities.

.5 Acceptable Enclosure: H150S

.6 Acceptable Circuit Breaker: HDL26150.

.7 Acceptable Shunt Trip Circuit Breaker Accessory: S29386.

.8 Acceptable manufacturer: Square D/Schneider Electric.

Electrical Specifications

2.3 Power Panelboard

.1 Indoor, NEMA Type 1 enclosure.

.2 Acceptable manufacturers: Square D/Schneider Electric

.3 Designed for as indicated c/w main breaker rated 22kAIC. Main and feeder breakers must be series rated for 22kAIC.

.4 Panelboard: bus and feeder breakers rated for 10,000 A (symmetrical) interrupting cap or as indicated.

.5 Sequence phase bussing with odd numbered breakers on left and even on right, with each breaker identified by permanent number identification as to circuit number and phase.

.6 Panelboards: voltage mains, number of circuits, and number and size of branch circuit breakers as indicated.

.7 Copper buses with neutral of same ampere rating as mains, and Copper ground bar.

.8 Mains: suitable for bolt on breakers.

.9 Base panelboards on CSA C22.2 No. 29 – specification.

.10 Acceptable Products: NQ Circuit Breaker Panel with front NC44S and box MH44

.11 Panelboard Breakers:
- .1 Breakers with thermal and magnetic tripping in panelboards except as indicated otherwise.
- .2 Main breaker: separately mounted on top or bottom of panel to suit cable entry. When mounted vertically, down position should open breaker.
- .3 Lock on devices as indicated.
- .4 Bolt-on moulded case circuit breaker: quick-make, quick-break type, for manual and automatic operation with temperature compensation for 40°C ambient.
- .5 Common-trip breakers: with single handle for multi-pole applications.
- .6 Ground fault protection circuit breakers: Class A type, 120V AC, complete with automatic shunt trip, zero sequence transformer and facilities for testing and reset pushbuttons.
- .7 Acceptable Products: QOB-VH.

2.4 Low Voltage Wire (1000V and Below)

.1 Conductors: stranded Copper conductors, with minimum power conductor size: No. 12 AWG, minimum control conductor size: No. 14 AWG.

.2 Power conductors: size as indicated, with cross linked polyethylene (XLPE) insulation rated 1000 V – RW90 or RWU90, as indicated.

.3 Provide Sunlight Resistant ("SR" type) insulated conductors where exposed to weather.

.4 Control conductors: RW90, XLPE insulation rated 600V – RW90.

.5 Control wiring: copper with thermoplastic insulation type TEW rated at 600V.

2.5 Conduits and Ducts

.1 Minimum above grade conduit size: 21mm (3/4"), and minimum below grade conduit size: 27mm (1").

.2 Rigid PVC conduit, manufactured to schedule 40 wall thickness. Solvent weld compound for all PVC joints. Complies with CSA C22.2 No. 211.2-06. All conduit to be UV rated.

.3 Fittings: manufactured for use with conduit specified. Coating and UV rating: same as conduit. Fittings to incorporate nylon insulated throat or bushing.

.4 Factory "ells" where 90° bends. Use "large or utility" sweeping bends to reduce pulling cable tensions.

2.6 Miscellaneous Equipment

.1 Wire markers: computer printed, black letters on white background, self-laminating – vinyl markers, number of markers as required.

.2 Cable markers for cables or conductors greater than 13 mm diameter: strap-on type, rigid PVC, black letters on white background, with PVC covered aluminium straps.

Electrical Specifications

.3 Terminal blocks: minimum 600 V rated, modular, sized to accommodate conductor size used.

.4 Where screw-type terminals are provided on equipment field wiring: terminate with pressure-type insulated copper fork tongue terminals.

.5 Splice connectors for wire sizes Nos. 12-10 AWG inclusive: compression spring type.

.6 Splice connectors for wire sizes No. 8 AWG and larger: split-bolt type, sized to suit number and size of conductors, c/w flame retardant foot-type insulator.

.7 Cable ties shall be nylon, one-piece, self-locking type.

PART 3 – EXECUTION

3.1 Installation Requirements

.1 Install circuit breaker with shunt trip, and power panelboard as indicated.

.2 Make power and control connections as indicated.

.3 Make grounding connections between equipment ground busses and system grounding system.

.4 Connect loads to circuits. Perform a "load balance" check after all loads are connected.

.5 Breaker sizes listed in the panelboard schedule(s) are provided as a general guide. Prior to installation, contractor to confirm all breaker sizes with final equipment loads

.6 Contractor to size all panelboard feeder wiring and conduit based on Ontario Electrical Safety Code - latest edition. Include insulated ground conductor in all conduit raceways.

.7 Provide a typed directory for the new panelboard.

.8 Check all factory-made connections for mechanical security, electrical continuity and current phasing.

.9 Provide a Lamicoid nameplate on new circuit breaker and new power panelboard. Lamicoid: 3mm thick plastic engraving sheet, black face, white core, with double-sided adhesive tape.

3.2 Conduits and Wiring

.1 Install all wire and cable according to the drawings, with a minimum power conductor size of No. 12 AWG and minimum control conductor size of No. 14 AWG.

.2 No splices shall be permitted in cable or wiring runs, and shall only be permitted in junction boxes.

.3 Identify each conductor by plastic slip-on markers at each termination with circuit or wire number.

.4 Use CSA approved lubricants of type compatible with cable jacket to reduce pulling tension.

3.3 Testing and Commissioning

.1 Provide testing and commissioning of all electrical work and control systems.

.2 Nolify the Township at least three working days before the testing and commissioning is scheduled to start. The Township may request repetition of any test for which due notification was not received.

.3 Provide insulation test using 500V megger on all new power cables.

END OF SPECIFICATIONS

△3

NOTES

No.	REVISION DESCRIPTION	DATE
1	ISSUED FOR CLIENT REVIEW	FEB/24
2	ISSUED FOR TENDER	FEB/24
3	ISSUED FOR ADDENDUM 2	APR/24

ENGINEER SEAL

LICENSED PROFESSIONAL ENGINEER
S. R. S. TAYLOR
100518503
18APR'24
PROVINCE OF ONTARIO

WALKERS POINT COMMUNITY CENTER

TOWNSHIP OF MUSKOKA LAKES

ELECTRICAL

ELECTRICAL SPECIFICATIONS

TATHAM ENGINEERING

DESIGN: JES	FILE: 123244	DWG: E-6
DRAWN: JES	DATE: SEP 2023	
CHECK: SRT	SCALE: AS SHOWN	