



Invitation to Tender

CITY OF KENORA

INVITATION TO TENDER / ADVERTISEMENT

Sealed Tenders for: City Hall Ventilation (the "Project")
Tender Number: 125-001-23

Will be received
by:

City of Kenora
(the "City")

at:

1 Main Street South
Kenora, ON P9N 3X2
Attention: City Clerk

Time and date for Tender Closing is:

11:00:00 a.m. CDT on April 3, 2025
(the "Tender Closing")

1. The work to be undertaken generally involves, but is not necessarily limited to:
The supply and installation of two (2) energy recovery ventilators (ERV) to service the second and third floors of the City Hall building located at 1 Main Street South in Kenora, Ontario (the "Work") as set out on the list of drawings and specifications described in Appendix A and Appendix B.
2. The Successful Bidder shall achieve substantial performance of the Work for the Project by June 27, 2025.
3. The drawings and specifications for the Project can be obtained from the second-floor reception desk at the City of Kenora Operations Centre located at 60 Fourteenth Street North, Kenora, Ontario.
4. All written inquiries regarding the technical aspects of the drawings and specifications for the Work shall be emailed to Chris Lock, Facilities Manager (Acting) (clock@kenora.ca), however the bidder(s) acknowledge and agree that the CITY does not have an obligation to provide a response to any written inquiry and that it is in the sole and unfettered discretion of the CITY to provide any written response to a written inquiry. Telephone inquiries and email inquiries will not be replied to.
5. Submission of a tender by a Bidder gives the CITY the right to require the Bidder to execute the contract to perform the Work as set out within the tender documents. Tenders may not be withdrawn after the Tender Closing and will be irrevocable and open for acceptance by the CITY for a period of sixty (60) days following the end of the day of the Tender Closing. The Successful Bidder will be notified in writing of the award of the Tender when the CITY delivers a letter of intent to the Successful Bidder.



INSTRUCTIONS TO TENDERERS

CITY OF KENORA

INSTRUCTIONS TO TENDERERS

1 BACKGROUND

- 1.1 The City of Kenora (the "CITY") is seeking tenders for the supply and installation of two (2) energy recovery ventilators (ERV) to service the second and third floors of the City Hall building located at 1 Main Street South in Kenora, Ontario (the "Work") as more particularly set out in Appendix "A" & "B" attached to these Instructions to Tenderers.
- 1.2 The CITY will receive sealed tenders until 11:00:00 a.m. CDT on April 3, 2025 ("Tender Closing"). Faxed tenders will not be accepted and will be returned to the Tenderer.

2 SUBMISSION OF TENDERS

- 2.1 Each Tender shall be addressed to the CITY in a sealed envelope clearly marked with the Tenderer's name, address and tender number. The sealed envelope containing the Tender shall be delivered before the Tender Closing to the CITY in accordance with the Invitation to Tender and the Instructions to Tenderers at:

**City of Kenora
1 Main Street South
Kenora, ON P9N 3X2
Attention: Heather Pihulak, City Clerk**

- 2.2 In the event of a dispute or issue about whether or not a tender complies with the Instructions to Tenderers, the CITY reserves the right to retain and open a copy of the tender in question in order to seek and obtain a legal opinion in relation thereto. The opening of a tender does not in any way constitute an admission by the CITY as to the compliance, or not, of the subject tender.

3 TENDER FORM

- 3.1 Each Tenderer shall submit a complete tender on the Tender Form which forms part of the Tender Documents with the blank spaces filled in. The tender sum must be written in words as well as figures, and must be for a sum in Canadian Dollars including all tariffs, freight, duties and taxes other than the Harmonized Sales Tax which must be shown as a separate amount unless otherwise specifically stipulated (hereinafter referred to as the "Tender Sum"). In the event of a discrepancy between an amount written in words and an amount written in figures, the amount written in words shall be deemed the intended amount. Tenders shall be written in English.
- 3.2 Notwithstanding the foregoing, the CITY shall be entitled to accept a Tender in such form as the CITY in its sole and unfettered discretion deems acceptable irrespective of irregularities whether of a trivial nature, or whether the Tender is noncompliant in a trivial manner.
- 3.3 The CITY shall not be obligated to accept Tenders that are unsigned, incomplete, conditional, illegible, unbalanced, obscure, contain irregularities of any kind, or

contain mathematical or calculation errors of any kind. On Unit Price Tenders, if there is a discrepancy found between the unit price and the extended amount, the unit price shall be deemed to represent the intention of the Tenderer. Discrepancies between words and figures will be resolved in favour of the words. Discrepancies between the indicated sum of any figures and the correct sum thereof will be resolved in favour of the correct sum. Any discrepancies between the Tender Form and a post Tender Closing submission required by the Tender Documents will be resolved in favour of the post Tender Closing submission.

- 3.4 Tenders shall not be withdrawn, modified or clarified after being delivered in accordance with the Tender Documents unless such withdrawal, modification or clarification is made in writing and actually received by Heather Pihulak, City Clerk of the CITY prior to the Tender Closing. Any withdrawal, modification or clarification of the Tender must be followed by a letter of confirmation signed and sealed in the same manner as the Tender and delivered to the address for the CITY in the Invitation to Tender within 48 hours of the Notice of the Withdrawal, Modification or Clarification.

4 THE FREEDOM OF INFORMATION AND PROTECTION OF PRIVACY ACT

- 4.1 All documents submitted to the CITY will be subject to the protection and disclosure provisions of Ontario's *Freedom of Information and Protection of Privacy Act* ("FOIP"). FOIP allows persons a right of access to records in the CITY's custody or control. It also prohibits the CITY from disclosing the Tenderer's personal or business information where disclosure would be harmful to the Tenderer's business interests or would be an unreasonable invasion of personal privacy as defined in sections 17 and 21 of FOIP. Tenderers are encouraged to identify what portions of their submissions are confidential and what harm could reasonably be expected from its disclosure. However, the CITY cannot assure Tenderers that any portion of the Tenderer's documents can be kept confidential under FOIP.

5 TENDER DOCUMENTS

- 5.1 The documents for the Tender are:
- Invitation to Tender
 - Instructions to Tenderers
 - Appendix A – Specifications
 - Appendix B – Drawings
 - Appendix C – Tender Form
 - Appendix D – Draft Service Agreement

(hereinafter collectively referred to as the "Tender Documents")

By submitting its Tender, the Tenderer acknowledges and agrees that it has received and reviewed the Tender Documents.

6 VARIATION IN TENDER DOCUMENTS AND NO IMPLIED OBLIGATIONS

- 6.1 The Tenderer shall carefully examine the Tender Documents. Any errors, omissions, discrepancies or clauses requiring clarification shall be reported in

writing to the CITY at least 10 calendar days prior to the Tender Closing. Where necessary the CITY shall respond to reported errors, omissions, discrepancies or clauses requiring clarification by way of Addenda.

- 6.2 Should a Tenderer fail to report any such errors, omissions, discrepancies or clauses requiring clarification at least 10 calendar days prior to the Tender Closing, the CITY shall be the sole judge as to the intent of the Tender Documents.
- 6.3 No implied obligation of any kind by or on behalf of the CITY shall arise from anything in the Tender Documents, and the express covenants and agreements contained in the Tender Documents and made by the CITY, are and shall be the only covenants and agreements that apply.
- 6.4 Without limiting the generality of Article 6.3, the Tender Documents supercede all communications, negotiations, agreements, representations and warranties either written or oral relating to the subject matter of the Tender made prior to the Tender Closing, and no changes shall be made to the Tender Documents except by written Addenda.

7 ADDENDA

- 7.1 Any changes to the Tender shall be in writing in the form of Addenda. Any Addenda issued to the Tender shall form part of the Tender Documents, whether or not the receipt of same has been acknowledged by a Tenderer, and the cost for doing the work therein shall be included in the Tender Sum. Verbal representations shall not be binding on the CITY nor form part of the Tender Documents. Technical inquiries into the meaning or intent of the Tender Documents must be submitted in writing to the person identified in Article 2.1 of the Instructions to Tenderers.

8 TENDER

- 8.1 Tenderers submitting Tenders shall be actively engaged in the line of work required by the Tender Documents and shall be able to refer to work of a similar nature performed by them. They shall be fully conversant with the general technical phraseology in the English language of the lines of work covered by the Tender Documents.
- 8.2 Each Tenderer shall review the Tender Documents provided by the CITY and confirm that it is in possession of a full set of Tender Documents when preparing its Tender.
- 8.3 Tenders shall be properly executed in full compliance with the following requirements:
 - 8.3.1 The signatures of persons executing the Tender must be in their respective handwriting; and
 - 8.3.2 If the Tender is made by a limited company, the full name of the company shall be accurately printed immediately above the signatures of its duly authorized officers and the corporate seal shall be affixed;

8.3.3 If the Tender is made by a partnership, the firm name or business name shall be accurately printed above the signature of the firm and the Tender shall be signed by a partner or partners who have authority to sign for the partnership;

8.3.4 If the Tender is made by an individual carrying on business under the name other than its own, its business name together with its name shall be printed immediately above its signature or

8.3.5 If the Tender is made by a sole proprietor who carries on business in its own name, the proprietor shall print its name immediately below its signature.

8.4 Tenders received from agents representing principals must be accompanied by a Power of Attorney signed by the said principals showing that the agents are duly authorized to sign and submit the Tender and have full power to execute the Contract on behalf of their principals. The execution of the Contract will bind the principals and have the same effect as if it were duly signed by the principals.

9 TENDER DEPOSIT

9.1 Not used.

10 PERFORMANCE AND LABOUR AND MATERIAL PAYMENT BONDS

10.1 Not used.

11 INSURANCE

11.1 The Tender shall be accompanied by a Certificate of Insurance, certifying that the insurance as required by the Contract, is in place or, if the required insurance is not in place, by a Letter of Insurability or Undertaking of Insurance in standard form from the Tenderer's Insurance Broker certifying that the required insurance will be issued to the Tenderer if the Tenderer is the Successful Tenderer.

11.2 The Successful Tenderer shall be required to secure and maintain at its own expense the insurance provided for in the Contract.

11.3 The Successful Tenderer shall provide all required insurance to the CITY no later than 10 working days after receipt of a Letter of Intent from the CITY provided in accordance with Article 16.

12 COMMENCEMENT AND COMPLETION OF WORK

12.1 The Successful Tenderer shall commence the Work within 10 working days after receipt of the Letter of Intent from the CITY and shall complete the Work by the dates specified in the Contract.

13 SITE CONDITIONS

- 13.1 The Tenderer is responsible for inspecting the site(s) of the Work and for making whatever inquiries or arrangements necessary for it to become fully informed of the nature of the site(s) of the Work, including the soil structure and topography of the site(s), and of the Work to be performed and all matters which may in any way affect the Work. Without limiting the foregoing, by the submission of its Tender, the Tenderer acknowledges that it has investigated and satisfied itself as to:
- a) the nature of the Work;
 - b) the location and all conditions relating to the location of the Work including, but not limited to, accessibility, general character, surface and sub-surface conditions, soil structure, utilities, road, uncertainties of seasonal weather and all other physical, topographical, geological and geographic conditions;
 - c) the general character, conditions, laws and restrictions applicable to the Work that might affect the performance of the Work;
 - d) all environmental risks, conditions, laws and restrictions applicable to the Work that might affect the Work; and
 - e) the magnitude of the work required to execute and complete the Work.
- 13.2 The Tenderer is fully responsible for obtaining all information required for the preparation of its Tender and for the execution of the Work. The CITY is not responsible for undertaking any investigations to assist the Tenderer. Any information, plans, drawings, shop drawings or existing equipment or facilities, photos of the original construction, reports or other documents which are not included or referred to in the Tender Documents (the "Non-Tender Information"), form no part of this Tender. The CITY and the CITY's Consultants assume no responsibility of any kind whatsoever arising from or relating to its failure to include or refer to such Non-Tender Information. Tenderers who obtain or rely upon such Non-Tender Information or other documents, do so entirely at their own risk.
- 13.3 The Tenderer's obligation to become familiar with the information described in Article 13.1 is not lessened or discharged by reason of any technical reports, including soils reports or data, test hole drilling reports or other soils information, made available or supplied in conjunction with the tendering process. Any technical reports so provided are for information only and neither the CITY nor the CITY's Consultants accept or assume any responsibility for the contents or accuracy of such technical reports and the Tenderer agrees that the CITY, the CITY's Consultants and their representatives shall not be liable in any way to the Tenderer in respect of such technical reports. The Tenderer further agrees that it shall not rely upon any oral information provided to it by the CITY, the CITY's Consultants or their representatives.

14 PRIME COST AND CONTINGENCY SUMS

- 14.1 The Tenderer shall include in its Tender Sum any prime cost sums or contingency sums. The Harmonized Sales Tax shall be shown as a separate amount.

15 PERMITS AND INSPECTIONS

- 15.1 The Tenderer shall include in its Tender Sum the cost of permits and inspections required by any governmental or other authority having jurisdiction or as required to fully perform the Work in accordance with the Contract.

16 SUCCESSFUL TENDERER

- 16.1 Award of Contract by the CITY occurs once the Tenderer receives a Letter of Intent duly executed by Greg Breen, Director of Engineering and Infrastructure of the CITY after Greg Breen has been duly and legally authorized by the CITY to send such Letter of Intent.
- 16.2 Following the receipt of the Letter of Intent, the Successful Tenderer shall provide a Certificate of Insurance unless previously provided.
- 16.3 The forfeiture of a Successful Tenderer's certified cheque or Bid Bond or irrevocable letter of credit shall not be construed as a waiver of any rights or remedies which the CITY may have against such Tenderer for loss or damages incurred or suffered in excess of the amount of such certified cheque or Bid Bond or irrevocable letter of credit.
- 16.4 Within 10 working days of receipt of the Contract from the CITY, the Successful Tenderer shall duly execute the Contract and return the Contract to the CITY.
- 16.5 Within 10 working days of receipt of a Letter of Intent in accordance with Article 16.1, the Successful Tenderer shall submit a proposed Construction Schedule showing the anticipated time of commencement and completion of each of the various operations to be performed under the Contract.

17. TENDER EVALUATION CRITERIA

- 17.1 Each Tender will be evaluated on the basis of the criteria listed below and the CITY will have the sole and unfettered discretion to award up to the maximum number of points for each criteria as listed below. By submitting a Tender, the Tenderer acknowledges and agrees that the CITY has, and it is hereby entitled to exercise, the sole and unfettered discretion to award the points for the evaluation of the noted criteria.

- 17.2 By submitting its Tender, each Tenderer acknowledges and agrees that it waives any right to contest in any legal proceedings, the decision of the CITY to award points in respect of the criteria noted below. The criteria and the maximum number of points for each criteria are as follows:

1. Price **100 points.**

Total Points **100 points**

18 WORKERS' COMPENSATION

- 18.1 Each Tenderer is to submit with its Tender, a letter of account from the Workers' Compensation Board – Ontario. This letter is to be current and not dated 14 calendar days prior to the Tender Closing.
- 18.2 The Tenderers who do not have an account with the Workers' Compensation Board- Ontario shall provide with their Tender evidence of a subcontractor or other company that will carry such coverage on their behalf.
- 18.3 If the Tenderer is performing work in any exempt industry within the meaning of the Workers Compensation Board Act (the "WCB Act") and does not carry coverage, the Tenderer acknowledges that
- 18.3.1 the CITY is subject to a deeming order under s. 14(2) of the WCB Act (the "Deeming Order"); and
 - 18.3.2 the Deeming Order states that all of the Tenderer's employees, directors, proprietors, partners or employees are deemed to be CITY employees for the purposes of the WCB Act while performing work for the CITY; and
 - 18.3.3 the effect of the Deeming Order is that the Tenderer's employees, directors, proprietors and partners who are injured while performing work for the CITY under the Contract, have no right to sue anyone and are limited to a claim under the WCB Act.
- 18.4 The Tenderer shall communicate the existence and effect of the Deeming Order to all of its employees, directors, proprietors, partners or employees.
- 18.5 The CITY may reject any Tender which fails to comply with the provisions set out in Article 18.

19 REGISTRATION

- 19.1 Prior to commencing the Work, the Successful Tenderer shall obtain all authorizations required by the laws of the Province of Ontario and of the Country of Canada enabling it to carry on business to complete the Work required under the Contract. Failure to be properly authorized shall entitle the CITY to forthwith terminate the Contract without compensation.

20 TENDERS EXCEEDING BUDGET

20.1 In addition to the rights contained within Article 20 herein, if the Tender Sum of every Tenderer exceeds the amount the CITY has budgeted for the Work, the CITY may reject all Tenders or attempt to negotiate a lower price with the Tenderer who, in the sole and unfettered discretion of the CITY, has submitted the most advantageous Tender.

20.2 Each Tenderer acknowledges and agrees that the CITY has the sole and unfettered discretion to employ any criteria in order to determine the Tender most advantageous to the CITY, that the CITY has no obligation to neither disclose such criteria nor employ the criteria listed outlined in Article 17 Tender Evaluation Criteria.

20.3 By submitting its Tender, each Tenderer waives its right to contest in any action, application, case or legal proceeding in any court, the decision which the CITY may pursue under Article 20.1 and 20.2 herein.

20.4 If the Tender Sum of every Tenderer exceeds the amount budgeted for the Work and the CITY negotiates with the Tenderer who has submitted the Tender considered most advantageous to the CITY:

20.4.1 All statements made by either side in the course of negotiation are without prejudice and confidential;

20.4.2 In particular, the CITY's attempt to negotiate with such Tenderer does not constitute a rejection of its Tender; and

20.4.3 The CITY will not attempt to obtain a lower price for the same work that the Tenderer originally bid on, but may attempt to obtain a lower price for an altered scope of work. In no event will the CITY be obliged to disclose the amount budgeted for the Work.

21 CERTIFICATE OF RECOGNITION ("C.O.R.") SAFETY PROGRAM REQUIREMENT

21.1 Not used.

22 CANADIAN FREE TRADE AGREEMENT

22.1 The provisions of the Canadian Free Trade Agreement ("CFTA") apply to this Tender.

23 ACCEPTANCE OR REJECTION OF TENDERS

23.1 As it is the purpose of the CITY to obtain the Tender most suitable and most advantageous to the interests of the CITY, and notwithstanding anything else contained within the Tender Documents, the CITY reserves the right, in its sole and unfettered discretion, to reject or accept any Tender, including the right to reject all Tenders. Without limiting the generality of the foregoing, any Tender which

a) is incomplete, obscure, irregular or unrealistic;

- b) is non-compliant in a trivial/immaterial or substantial/material manner, or conditional;
- c) has erasures or corrections;
- d) omits a price on any one or more items in the Tender;
- e) fails to complete the information required in the Tender;
- f) is accompanied by an insufficient certified cheque, irrevocable letter of credit or by a Bid Bond in an unsatisfactory form,

may at the CITY's sole and unfettered discretion be rejected or accepted. Further, a Tender may be rejected or accepted on the basis of the CITY's unfettered assessment of its best interest, which includes the CITY's unfettered assessment as to a Tenderer's past work performance for the CITY or for anyone else or as to a Tenderer's financial capabilities, completion schedule, or ability to perform the Work, or the CITY's desire to reduce the number of different contractors on the location of the Work at any given time. The CITY reserves the right to negotiate after Tender Closing time with the Tenderer that the CITY deems has provided the most advantageous Tender; in no event will the CITY be required to offer any modified terms to any other Tenderer prior to entering into a Contract with the successful Tenderer and the CITY shall incur no liability to any other Tenderers as a result of such negotiation or modification.

24 LAW AND FORUM OF TENDER

24.1 The law to be applied in respect of the Tender Documents and the Contract shall be the law of the Province of Ontario and all civil actions commenced in relation to the Tender Documents or Contract shall be adjudicated by the Courts of the Province of Ontario and by submitting Tenders, Tenderers are taken to have agreed to attorn to the jurisdiction of the Courts of the said Province.

25 ACCEPTANCE PERIOD

25.1 The Tender shall be irrevocable and open for acceptance by the CITY for the period of time contained in the Invitation to Tender, namely, sixty (60) days following the end of the day of the Tender Closing. The time and date of the Tender Closing is as defined in the Invitation to Tender.



**CITY OF KENORA
INVITATION TO TENDER**

ITT #125-001-23

**Appendix A
Specifications**

Part 1 General

1.1 SUMMARY OF WORK COVERED BY CONTRACT DOCUMENTS

.1 Mechanical

- .1 Supply and install Energy Recovery Ventilator in accordance with manufacturer's instructions and as specified in drawing package. This shall include applicable controller included with unit.
- .2 Supply and install spiral ductwork throughout, complete with diffusers/grilles/dampers/louvers where applicable. Provide insulation to intake and exhaust ducts as required and in accordance with good practice.
- .3 Supply and install fire dampers at each duct penetration through a fire wall. Locations indicated on drawings.
- .4 Supply and install in duct, electric preheat coil serving the energy recovery ventilator as indicated on drawings.

.2 Electrical

- .1 Supply and install electrical receptacle as indicated on drawings to be used as power supply for ERV.
- .2 Install ERV wall control as indicated on drawings.
- .3 Supply and install duct smoke detector, connect to building fire alarm system and interlock with ERV.
- .4 Provide power to electric preheat coil installed by mechanical contractor.

.3 Commissioning

- .1 Commission all installed equipment as per manufacturer's instructions.
- .2 Ensure all equipment operates as expected.
- .3 Provide TAB.
- .4 Submit all closeout documents as outlined in Section 01 78 00
- .5 Provide demonstration and training as required and in accordance with Section 01 79 00

.4 Safety

- .1 Ensure all work is completed by certified personal. Work shall comply with enclosed space and working at heights regulations where applicable.

1.2 WORK BY OTHERS

- .1 Co-operate with other Contractors in carrying out their respective works and carry out instructions from engineer.

1.3 WORK SEQUENCE

- .1 Construct Work in stages to accommodate Owner's continued use of premises during construction.
- .2 Coordinate Progress Schedule.

1.4 CONTRACTOR USE OF PREMISES

- .1 Limit use of premises for storage, to allow:
 - .1 Owner occupancy.
 - .2 Work by other contractors.
- .2 Co-ordinate use of premises under direction of City of Kenora Project Manager/Coordinator, in consultation with facility staff.
- .3 Repair or replace portions of existing work which have been altered during construction operations to match existing or adjoining work, as directed by Engineer.

1.5 OWNER OCCUPANCY

- .1 Owner will occupy premises during entire construction period for execution of normal operations.
- .2 Co-operate with Owner in scheduling operations to minimize conflict and to facilitate Owner usage.

1.6 EXISTING SERVICES

- .1 Notify, City of Kenora Project Manager/Coordinator, Engineer and utility companies of intended interruption of services and obtain required permission.
- .2 Where Work involves breaking into or connecting to existing services, give engineer and project coordinator 48 hours notice for necessary interruption of mechanical or electrical service throughout course of work. Minimize duration of interruptions. Carry out work at times as directed by governing authorities with minimum disturbance to tenant operations.
- .3 Establish location and extent of service lines in area of work before starting Work. Notify engineer of findings.
- .4 Submit schedule for approval by engineer for any shut-down or closure of active service or facility including power and communications services. Adhere to approved schedule and provide notice to affected parties.
- .5 Provide temporary services when directed by engineer to maintain critical building and tenant services.
- .6 Provide adequate bridging over trenches which cross sidewalks or roads to permit normal traffic.
- .7 Where unknown services are encountered, immediately advise engineer and confirm findings in writing.
- .8 Protect, relocate or maintain existing active services. When inactive services are encountered, cap off in manner approved by authorities having jurisdiction.
- .9 Record locations of maintained, re-routed, and abandoned service lines.

END OF SECTION

1.1 RESTRICTIONS ON USE OF PREMISES

- .1 Limit use of premises for *Work* and storage to allow;
 - .1 *Owner* occupancy.
 - .2 Public usage.
- .2 Coordinate use of premises under direction of *Owner*.

1.2 WORK SEQUENCE

- .1 Schedule and construct *Work* in stages to accommodate *Owner's* continued use of premises during construction.

1.3 OWNER OCCUPANCY

- .1 *Owner* will occupy premises during entire construction period.
- .2 Cooperate with *Owner* in scheduling operations to minimize disruptions and to facilitate *Owner* usage.

1.4 RESTRICTED HOURS OF WORK IN OCCUPIED FACILITIES

- .1 *Work* may not be performed during *Owner's* normal business hours which are Monday to Friday from 8:00am to 4:30pm.
- .2 Allow for hours of work restrictions in construction progress schedule.

1.5 MAINTAINING LIFE SAFETY SYSTEMS IN OCCUPIED FACILITIES

- .1 Maintain operational life safety systems and public access to exits in occupied areas during all stages of the *Work*.
- .2 Determine nature and exact locations of existing fire and smoke sensors prior to the commencement of the *Work*. Avoid direct or indirect jarring while working in adjacent areas and exercise caution to avoid triggering these devices.
- .3 Be responsible for costs incurred by *Owner* on account of false fire alarms activated as a result of the execution of the *Work* without adequate precautions.

END OF SECTION

1.1 CASH ALLOWANCES FOR SERVICES

- .1 Amount of each cash allowance includes:
 - .1 All costs related to the services, excluding *Value Added Taxes*.
 - .2 *Subcontractor's* and sub-*Subcontractor's* overheads and profits related to the cash allowance.
- .2 Amount of each cash allowance does not include *Contractor's* overhead and profit, and other related costs, which shall be included in the *Contract Price* and not in the cash allowance.
- .3 Allow a stipulated sum of \$3,200.00 for coring through the exterior wall of City Hall to allow installation of the supply and exhaust vents for the new energy recovery ventilators. This cash allowance shall more specifically cover the following services:
 - .1 Coring a maximum of four (4) vent openings, as required.
 - .2 Materials, specialized equipment rentals, and labour directly related to the preparation, operation, and cleanup of coring activities for the openings.
 - .3 The cash allowance will not cover costs associated with rental or use of a boom lift for accessing the roof during coring activities.
 - .4 The cash allowance will not cover any costs associated with asbestos remediation, if required. Asbestos remediation will be handled independently if required.

1.2 EXPENDITURE OF CASH ALLOWANCES

- .1 *Owner* will provide *Contractor* with documentation required to permit pricing of a cash allowance item.
- .2 *Owner* may request *Contractor* to identify potential *Suppliers* or *Subcontractors*, as applicable, and to obtain at least three competitive prices for each cash allowance item.
- .3 *Owner* may request the *Contractor* to disclose originals of all bids, quotations, and other price related information received from potential *Suppliers* or *Subcontractors*.
- .4 *Owner* will determine by whom and for what amount each cash allowance item will be performed. Obtain *Owner's* prior written approval in the form of a *Change Order* before entering into a subcontract, amending an existing subcontract, or performing own forces work included in a cash allowance. Upon issuance of the *Change Order*, the *Contractor's* responsibilities for a cash allowance item shall be the same as for other work of the *Contract*.
- .5 *Contractor* shall retain all receipts and invoices corresponding to expenditure of the cash allowance for submission to the *Owner* as requested.
- .6 *Contractor* shall maintain clear and accurate timesheets for all workers completing work on a cash allowance item.
 - .1 The timesheets shall include at a minimum the following information:
 - .1 The cash allowance item to which the work is being attributed.
 - .2 The date the work was performed.

- .3 The name of the worker.
 - .4 The worker's hourly rate.
 - .5 The hours worked by the worker on the cash allowance scope, accurate to the nearest quarter hour.
- .2 These timesheets shall be submitted to the *Owner* upon request to support expenditure of the cash allowance.

END OF SECTION

1.1 DEFINITION

- .1 In this Section "Substitution" means a *Product*, a manufacturer, or both, not originally specified in *Contract Documents* by proprietary name but proposed for use by *Contractor* in place of a *Product*, a manufacturer, or both, specified by proprietary name.

1.2 SUBSTITUTION PROCEDURES

- .1 *Contractor* may propose a Substitution wherever a *Product* or manufacturer is specified by proprietary name(s), unless there is accompanying language indicating that Substitutions will not be considered.
- .2 *Contractor* may propose a Substitution wherever a *Product* or manufacturer is specified by proprietary name(s) and accompanied by language such as "or equal", "or approved equal", or other similar words. Do not construe such language as an invitation to unilaterally provide a Substitution without *Consultant's* prior acceptance in writing. Do not order or install any Substitution without a *Supplemental Instruction* or *Change Order*.
- .3 Provided a proposed Substitution submission includes all of the information specified in this Section under Submission Requirements For Proposed Substitutions, *Consultant* will promptly review and accept or reject the proposed Substitution.
- .4 *Consultant* may accept a Substitution if satisfied that:
 - .1 the proposed substitute *Product* is the same type as, is capable of performing the same functions as, interfaces with adjacent work the same as, and meets or exceeds the standard of quality, performance and, if applicable, appearance and maintenance considerations, of the specified *Product*,
 - .2 the proposed substitute manufacturer has capabilities comparable to the specified manufacturer, and
 - .3 the Substitution provides a benefit to *Owner*.
- .5 If *Contractor* fails to order a specified *Product* or order a *Product* by a specified manufacturer in adequate time to meet *Contractor's* construction schedule, *Consultant* will not consider that a valid reason to accept a Substitution.
- .6 If *Consultant* accepts a Substitution and subject to *Owner's* agreement, the change in the *Work* will be documented in the form of either a *Supplemental Instruction* or *Change Order*.
- .7 If a Substitution is accepted in the form of a *Supplemental Instruction* or *Change Order*, *Contractor* shall not revert to an originally specified *Product* or manufacturer without *Consultant's* prior written acceptance.

1.3 SUBMISSION REQUIREMENTS FOR PROPOSED SUBSTITUTIONS

- .1 Include with each proposed Substitution the following information:
 - .1 Identification of the Substitution, including product name and manufacturer's name, address, telephone numbers, and web site.
 - .2 Reason(s) for proposing the Substitution.

- .3 A statement verifying that the Substitution will not affect the *Contract Price* and *Contract Time* or, if applicable, the amount and extent of a proposed increase or decrease in *Contract Price* and *Contract Time* on account of the Substitution.
- .4 A statement verifying that the Substitution will not affect the performance or warranty of other parts of the *Work*.
- .5 Manufacturer's *Product* literature for the Substitution, including material descriptions, compliance with applicable codes and reference standards, performance and test data, compatibility with contiguous materials and systems, and environmental considerations.
- .6 Product samples as applicable.
- .7 A summarized comparison of the physical properties and performance characteristics of the specified *Product* and the Substitution, with any significant variations clearly highlighted.
- .8 Availability of maintenance services and sources of replacement materials and parts for the Substitution, as applicable, including associated costs and time frames.
- .9 If applicable, estimated life cycle cost savings resulting from the Substitution.
- .10 Details of other projects and applications where the Substitution has been used.
- .11 Identification of any consequential changes in the *Work* to accommodate the Substitution and any consequential effects on the performance of the *Work* as a whole. A later claim for an increase to the *Contract Price* or *Contract Time* for other changes in the *Work* attributable to the Substitution will not be considered.

END OF SECTION

1.1 SCHEDULE OF VALUES

- .1 Prior to the first application for payment, submit for *Owner's* review an initial schedule of values. Modify the initial schedule of values if and as requested by *Owner*. Obtain *Owner's* written acceptance of the initial schedule of values prior to the first application for payment.
- .2 Together with the first and all subsequent applications for payment, submit updated versions of the schedule of values to indicate the values, to the date of application for payment, of work performed and *Products* delivered to *Place of the Work*.
- .3 Provide the schedule of values in an electronic spreadsheet format that provides for inclusion of the following information:
 - .1 Identifying information including title and location of the *Work*, name of *Contractor*, number and date of application for payment, and period covered by the application for payment.
 - .2 A work breakdown structure that is sufficiently detailed and comprehensive to facilitate *Owner's* evaluation of applications for payment at an appropriate level of detail.
 - .5 Provisions for approved *Change Orders* so that the breakdown amounts indicated in the schedule of values aggregate to the current total *Contract Price*. Also provide for indicating the estimated value of *Change Directives* within the schedule of values, separately from the current total *Contract Price*.
 - .6 For each item in the work breakdown structure, provide as a minimum the following information, under headings as indicated:
 - .1 Breakdown Amount: A dollar amount, including an appropriate pro rata portion of *Contractor's* overhead and profit.
 - .2 Performed to Date: The value of *Work* performed and *Products* delivered to *Place of the Work* up to the date of the application for payment, stated as a percentage of the *Contract Price* and in dollars.
 - .3 Previously Performed: The value of *Work* performed and *Products* delivered to the *Place of the Work* for which payment has been previously certified, stated in dollars.
 - .4 Current Period: The value of *Work* performed and *Products* delivered to *Place of the Work* for which *Contractor* is currently applying for payment, stated in dollars.
 - .5 Balance to Complete: The value of *Work* not yet performed and *Products* not yet delivered to *Place of the Work*, stated in dollars.

1.2 WORKERS' COMPENSATION CLEARANCE

- .1 Submit proof of workers' compensation clearance with each application for payment.

1.3 STATUTORY DECLARATIONS

- .1 Submit a statutory declaration in the form of CCDC 9A – Statutory Declaration of Progress Payment Distribution by *Contractor* with each application for payment except the first.

1.4 PAYMENT FOR PRODUCTS STORED OFF SITE

- .1 *Owner* may, due to extraordinary circumstances and at *Owner's* sole discretion, make payments for *Products* delivered to and stored at a location other than *Place of the Work*, subject to:
 - .1 a request submitted by *Contractor* in writing, with appropriate justification, and
 - .2 whatever conditions *Owner* or *Consultant* may establish for such payments, as required to protect *Owner's* interests.

1.5 RELEASE OF HOLDBACK

- .1 Holdback shall be released in accordance with the Ontario Construction Act, R.S.O. 1990.
- .2 Where the *Contractor* believes that they have achieved *Substantial Performance* of the *Work*, they shall submit an application in writing to the *Owner*.
- .3 The application will be promptly reviewed and if the *Owner* is in agreement, they will issue a Certificate of Substantial Performance. If the *Owner* disagrees with the *Contractor's* application, they shall advise the *Contractor* in writing as to the reasons why the work is not accepted to be substantially performed.
- .4 Upon receipt of the Certificate of Substantial Performance, the *Contractor* shall publish the certificate in accordance with the act and regulations.
- .5 Upon publishing, the *Contractor* shall provide the *Owner* with a Certificate of Publication demonstrating that the Certificate of Substantial Performance has been published, including the date.
 - .1 The date of publication shall initiate the lien period for the project.
- .6 The *Contractor* shall submit an application for payment of the holdback during the lien period for review and processing by the *Owner*.
- .7 Upon expiration of the lien period 60 days after publishing or as otherwise required by the Act and regulations, the *Owner* shall ensure that no lines have been registered against the project.

- .8 If any liens have been registered, the holdback amount shall be reduced by the amount necessary to clear the registered liens for the project. In the event of a clear title search, the full amount of the holdback shall be released to the *Contractor* on the first business day following expiration of the lien period.

END OF SECTION

1.1 ADMINISTRATIVE

- .1 Submit specified submittals to *Owner* for issuance to the *Consultant*. Submit with reasonable promptness and in orderly sequence so as to not cause delay in the *Work*. Failure to submit in ample time is not considered sufficient reason for an extension of *Contract Time* or for *Product* substitutions or other deviations from the *Drawings* and *Specifications*.
- .2 Where required by authorities having jurisdiction, provide submittals to such authorities for review and approval.
- .3 Do not proceed with *Work* affected by a submittal until review is complete.
- .4 Review submittals, provide verified field measurements where applicable, and affix *Contractor's* review stamp prior to submission to *Consultant*. *Contractor's* review stamp represents that necessary requirements have been determined and verified, and that the submittal has been checked and coordinated with requirements of the *Work* and *Contract Documents*.
- .5 Verify field measurements and that affected adjacent work is coordinated.
- .6 Submittals not meeting specified requirements will be returned with comments.

1.2 SHOP DRAWINGS AND PRODUCT DATA

- .1 Indicate *Products*, methods of construction, and attachment or anchorage, erection diagrams, connections, explanatory notes and other information necessary for completion of the *Work*.
- .2 Where *Products* attach or connect to other *Products*, indicate that such items have been coordinated, regardless of Section under which adjacent items will be supplied and installed. Indicate cross-references to *Drawings*, *Specifications* and other already reviewed *Shop Drawings*.
- .1 *Shop Drawing* submittals shall include:
 - .1 Date and revision dates.
 - .2 *Project* title and number.
 - .3 Name and address of:
 - .1 *Subcontractor*.
 - .2 *Supplier*.
 - .3 *Manufacturer*.
 - .4 *Contractor's* stamp, date, and signature of *Contractor's* authorized representative responsible for *Shop Drawing* review, indicating that each *Shop Drawing* has been reviewed for compliance with *Contract Documents* and, where applicable, that field measurements have been verified.
 - .5 Details of appropriate portions of the *Work* as applicable:
 - .1 Fabrication.
 - .2 Layout, showing dimensions, including identified field dimensions, and clearances.

- .3 Setting or erection details.
 - .4 Capacities.
 - .5 Performance characteristics.
 - .6 Standards.
 - .7 Operating weight.
 - .8 Wiring diagrams.
 - .9 Single line and schematic diagrams.
 - .10 Relationships to other parts of the *Work*.
- .2 *Product* data submittals shall include safety data sheets (SDS) for all controlled Products.
 - .3 Submit 1 electronic copy of *Shop Drawings* where specified in the technical *Specifications*.
 - .4 Submit 1 electronic copy of Product data sheets or brochures where specified in the technical *Specifications*.
 - .5 Where a submittal includes information not applicable to the *Work*, clearly identify applicable information and strike out non-applicable information.
 - .6 Supplement standard information to include details applicable to *Project*.
 - .7 Allow 10 *Working Days* for *Consultant's* review of each submittal.
 - .8 If upon *Consultant's* review no errors or omissions are discovered, or if only minor corrections are required as indicated, submittal will be returned and fabrication or installation of *Work* may proceed.
 - .9 If upon *Consultant's* review significant errors or omissions are discovered, a so noted copy will be returned for correction and resubmission. Do not commence fabrication or installation.
 - .10 *Consultant's* notations on submittals are intended to ensure compliance with *Contract Documents* and are not intended to constitute a change in the *Work* requiring change to the *Contract Price* or *Contract Time*. If *Contractor* considers any *Consultant's* notation to be a change in the *Work*, promptly notify *Owner* in writing before proceeding with the *Work*.
 - .11 Resubmit corrected submittals through same procedure indicated above, before any fabrication or installation of the *Work* proceeds. When resubmitting, notify *Consultant* in writing of any revisions other than those requested by *Consultant*.

END OF SECTION

1.1 GENERAL

- .1 Provide *Products* that are not damaged or defective, and suitable for purpose intended, subject to specified requirements. If requested by *Owner* or *Consultant*, furnish evidence as to type, source and quality of *Products* provided.
- .2 Unless otherwise specified, maintain uniformity of manufacture for like items throughout.
- .3 Permanent manufacturer's markings, labels, trademarks, and nameplates on *Products* are not acceptable in prominent locations, except where required by regulatory requirements or for operating instructions, or when located in mechanical or electrical rooms.

1.2 PRODUCT AVAILABILITY AND DELIVERY TIMES

- .1 Promptly upon Contract award and periodically during construction, review and confirm *Product* availability and delivery times. Order *Products* in sufficient time to meet the construction progress schedule and the *Contract Time*.
- .2 If a specified *Product* is no longer available, promptly notify the *Owner*. *Owner* will take action as required.
- .3 If delivery delays are foreseeable, for any reason, promptly notify *Owner*.
 - .1 If a delivery delay is beyond *Contractor's* control, *Owner* will provide direction.
 - .2 If a delivery delay is caused by something that was or is within *Contractor's* control, *Contractor* shall propose actions to maintain the construction progress schedule for *Owner's* review and acceptance.

1.3 STORAGE, HANDLING, AND PROTECTION

- .1 Store, handle, and protect *Products* during transportation to *Place of the Work* and before, during, and after installation in a manner to prevent damage, adulteration, deterioration and soiling.
- .2 Comply with manufacturer's instructions for storage, handling and protection.
- .3 Store packaged or bundled *Products* in original and undamaged condition with manufacturer's seals and labels intact. Do not remove from packaging or bundling until required in *Work*.
- .4 Comply with the requirements of the workplace hazardous materials information system (WHMIS) regarding use, handling, storage, and disposal of hazardous materials, including requirements for labeling and the provision of safety data sheets (SDS).
- .5 Store *Products* subject to damage from weather in weatherproof enclosures.
- .6 Store sheet *Products* on flat, solid, supports and keep clear of ground. Slope to shed moisture.

- .7 Remove and replace damaged *Products*.

END OF SECTION

1.1 SUMMARY

- .1 Except where otherwise specified in technical *Specifications* or otherwise indicated on *Drawings*, comply with requirements of this Section.

1.2 MANUFACTURER'S INSTRUCTIONS

- .1 Install, erect, or apply *Products* in strict accordance with manufacturer's instructions.
- .2 Notify *Owner*, in writing, of conflicts between *Contract Documents* and manufacturer's instructions where, in *Contractor's* opinion, conformance with *Contract Documents* instead of the manufacturer's instructions may be detrimental to the *Work* or may jeopardize the manufacturer's warranty.
- .3 Do not rely on labels or enclosures provided with *Products*. Obtain written instructions directly from manufacturers.
- .4 Provide manufacturer's representatives with access to the *Work* at all times. Render assistance and facilities for such access so that manufacturer's representatives may properly perform their responsibilities.

1.3 CONCEALMENT

- .1 Conceal pipes, ducts, and wiring in floors, walls and ceilings in finished areas, unless otherwise directed:
 - .1 after review by *Consultant* and authority having jurisdiction, and
 - .2 where locations differ from those shown on *Drawings*, after recording actual locations on as-built drawings.
- .2 Provide incidental furring or other enclosures as required.
- .3 Notify *Owner* in writing of interferences before installation.

1.4 FASTENINGS - GENERAL

- .1 Provide metal fastenings and accessories in same texture, colour and finish as adjacent materials.
- .2 Prevent electrolytic action and corrosion between dissimilar metals and materials by using suitable non-metallic strips, washers, sleeves, or other permanent separators to avoid direct contact.
- .3 Use non-corrosive fasteners and anchors for securing exterior work and in spaces where high humidity levels are anticipated.
- .4 Space anchors within individual load limit or shear capacity and ensure they provide positive permanent anchorage.
- .5 Keep exposed fastenings to a minimum, space evenly and install neatly.

- .6 Do not use fastenings or fastening methods that may cause spalling or cracking of material to which anchorage is made.

1.5 FASTENINGS - EQUIPMENT

- .1 Use fastenings of standard commercial sizes and patterns with material and finish suitable for service.
- .2 Bolts shall not project more than one diameter beyond nuts.

1.6 FIRE RATED ASSEMBLIES

- .1 When penetrating fire rated walls, ceiling, or floor assemblies, completely seal voids with fire-stopping materials, smoke seals, or both, in full thickness of the construction element as required to maintain the integrity of the fire rated assembly.

1.7 LOCATION OF FIXTURES, OUTLETS AND DEVICES

- .1 Consider location of fixtures, outlets, and devices indicated on *Drawings* as approximate.
- .2 Locate fixtures, outlets, and devices to provide minimum interference, maximum usable space, and as required to meet safety, access, maintenance, acoustic, and regulatory, including barrier free, requirements.
- .3 Promptly notify *Owner* in writing of conflicting installation requirements for fixtures, outlets, and devices. If requested, indicate proposed locations and obtain approval for actual locations.

1.8 PROTECTION OF COMPLETED WORK AND WORK IN PROGRESS

- .1 Adequately protect parts of the *Work* completed and in progress from any kind of damage.
- .2 Promptly remove, replace, clean, or repair, as directed by *Owner*, work damaged as a result of inadequate protection.
- .3 Do not load or permit to be loaded any part of the *Work* with a weight or force that will endanger the safety or integrity of the *Work*.

1.9 REMEDIAL WORK

- .1 Notify *Owner* of, and perform remedial work required to, repair or replace defective or unacceptable work. Ensure that properly qualified workers perform remedial work. Coordinate adjacent affected work as required.

END OF SECTION

1.1 REGULATORY REQUIREMENTS

- .1 Comply with applicable regulatory requirements when disposing of waste materials.
- .2 Obtain permits from authorities having jurisdiction and pay disposal fees where required for disposal of waste materials and recyclables.

1.2 GENERAL CLEANING REQUIREMENTS

- .1 Use only cleaning materials recommended by manufacturer of surface to be cleaned, and as recommended by cleaning material manufacturer.

1.3 PROGRESSIVE CLEANING AND WASTE MANAGEMENT

- .1 Maintain the *Work* in a tidy and safe condition, free from accumulation of waste materials and construction debris.
- .2 Remove waste materials and recyclables from work areas, separate, and deposit in designated containers at end of each *Working Day*.
- .3 Remove waste materials and recyclables from *Place of the Work* daily.
- .4 Clean interior building areas throughout work due to ongoing *Owner* occupancy and maintain free of dust and other contaminants during finishing operations.
- .5 Schedule cleaning operations so that resulting dust, debris and other contaminants will not fall on wet, newly finished surfaces nor contaminate building systems.

1.4 FINAL CLEANING

- .1 Before final cleaning, arrange a meeting at *Place of the Work* to determine the acceptable standard of cleaning. Ensure that *Owner* and *Contractor* are in attendance.
- .2 Remove from *Place of the Work* surplus *Products*, waste materials, recyclables, *Temporary Work*, and *Construction Equipment* not required to perform any remaining work.
- .3 Re-clean as necessary areas that have been accessed by *Contractor*'s workers prior to *Owner* occupancy.
- .4 Remove stains, spots, marks, and dirt from finished surfaces, electrical and mechanical fixtures, furniture fitments, walls, and floors.
- .5 Clean and polish glass, mirrors, hardware, wall tile, stainless steel, chrome, porcelain enamel, baked enamel, plastic laminate, and all other finished surfaces, including mechanical and electrical fixtures. Replace broken, scratched or otherwise damaged glass.
- .6 Remove dust from lighting reflectors, lenses, lamps, bulbs, and other lighting surfaces.
- .7 Vacuum clean and dust exposed wall, floor, and ceiling surfaces, behind grilles, louvres and screens.

- .8 Clean mechanical, electrical, and other equipment. Replace filters for mechanical equipment if equipment is used during construction.
- .9 Remove waste material and debris from crawlspaces and other accessible concealed spaces.
- .10 Remove stains, spots, marks, and dirt from exterior facades.
- .11 Clean exterior and interior window glass and frames.

1.5 WASTE MANAGEMENT AND DISPOSAL

- .1 Dispose of waste materials and recyclables at appropriate municipal landfills and recycling facilities in accordance with applicable regulatory requirements.
- .2 Do not burn or bury waste materials at *Place of the Work*.
- .3 Do not dispose of volatile and other liquid waste such as mineral spirits, oil, paints and other coating materials, paint thinners, cleaners, and similar materials together with dry waste materials or on the ground, in waterways, or in storm or sanitary sewers. Collect such waste materials in appropriate covered containers, promptly remove from *Place of the Work*, and dispose of at recycling facilities or as otherwise permitted by applicable regulatory requirements.
- .4 Cover or wet down dry waste materials to prevent blowing dust and debris.

END OF SECTION

1.1 INSPECTION AND REVIEW BEFORE SUBSTANTIAL PERFORMANCE

- .1 *Contractor's Inspection:* Before applying for Substantial Performance and the subsequent inspection by the *Owner*:
 - .1 Ensure that the specified prerequisites to *Substantial Performance* of the *Work* are completed.
 - .2 Conduct an inspection of the *Work* to identify defective, deficient, or incomplete work.
 - .3 Prepare a comprehensive and detailed list of items to be completed or corrected.
 - .4 Provide an anticipated schedule and costs for items to be completed or corrected.
- .2 *Owner's Review:* Upon receipt of the *Contractor's* application for review, together with the *Contractor's* list of items to be completed or corrected, the *Owner* and the *Contractor* shall arrange a mutually satisfactory agreed date and time to jointly review the *Work*. The *Owner* will advise the *Contractor* whether or not the *Work* is *Substantially Performed*. Add additional items, if any, to the *Contractor's* list of items to be completed or corrected. Provide the *Consultant* with a copy of the revised list.
- .3 Maintain the list of items to be completed or corrected and promptly correct or complete defective, deficient and incomplete work. The *Contractor's* inspection and *Owner's* review procedures specified above shall be repeated until the *Work* is *Substantially Performed* and no items remain on the *Contractor's* list of items to be completed or corrected.
- .4 When the *Owner* determines that the *Work* is *Substantially Performed*, the *Owner* will notify the *Contractor* and the *Consultant* in writing to that effect.

1.2 PREREQUISITES TO FINAL PAYMENT

- .1 After *Substantial Performance* of the *Work* and before submitting an application for final payment in accordance with the General Conditions of Contract:
 - .1 Correct or complete all remaining defective, deficient, and incomplete work.
 - .2 Remove from the *Place of the Work* all remaining surplus *Products*, *Construction Equipment*, and *Temporary Work*.
 - .3 Perform final cleaning and waste removal necessitated by the *Contractor's* work performed after *Substantial Performance*, as specified in Section 01 74 00 – Cleaning and Waste Management.

END OF SECTION

1.1 OPERATION AND MAINTENANCE MANUAL

- .1 Prepare a comprehensive operation and maintenance manual, in the language of the *Contract*, using personnel qualified and experienced for this task.
- .2 Submit final version to *Owner* in electronic format.

1.2 OPERATION AND MAINTENANCE MANUAL FORMAT

- .1 Organize data in the form of an instructional manual.
- .2 Provide electronic copy of manual in PDF format.

1.3 OPERATION AND MAINTENANCE MANUAL – GENERAL CONTENT

- .1 Table of contents.
- .2 Introductory information including:
 - .1 Date of manual submission.
 - .2 Complete contact information for *Consultant*, subconsultants, other consultants, and *Contractor*, with names of responsible parties.
 - .3 Schedule of *Products* and systems indexed to content of volume.
- .4 For each *Product* or system, include complete contact information for *Subcontractors*, *Suppliers* and manufacturers, including local sources for supplies and replacement parts.
- .5 *Product* Data: mark each sheet to clearly identify specific products, options, and component parts, and data applicable to installation. Delete or strike out inapplicable information. Supplement with additional information as required.
- .6 Reviewed *Shop Drawings*.
- .7 Permits, certificates, letters of assurance and other relevant documents issued by or required by authorities having jurisdiction.
- .8 Warranties.
- .9 Operating and maintenance procedures, incorporating manufacturer's operating and maintenance instructions, in a logical sequence.
- .10 Training materials as specified in Section 01 79 00 - Demonstration and Training.

1.4 OPERATION AND MAINTENANCE MANUAL - EQUIPMENT AND SYSTEMS CONTENT

- .1 Each Item of Equipment and Each System: include description of unit or system and component parts. Give function, normal operation characteristics, and limiting conditions.

- Include performance curves, with engineering data and tests, and complete nomenclature and commercial number of replaceable parts.
- .2 Panel Board Circuit Directories: provide electrical service characteristics, controls, and communications.
 - .3 Include installed colour coded wiring diagrams.
 - .4 Operating Procedures: include start-up, break-in, and routine normal operating instructions and sequences. Include regulation, control, stopping, shut-down, and emergency instructions. Include summer, winter, and any special operating instructions.
 - .5 Maintenance Requirements: include routine procedures and guide for trouble-shooting; disassembly, repair, and reassembly instructions; and alignment, adjusting, balancing, and checking instructions.
 - .6 Provide servicing and lubrication schedule, and list of lubricants required.
 - .7 Include manufacturer's printed operation and maintenance instructions.
 - .8 Include sequence of operation by controls manufacturer.
 - .9 Provide original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.
 - .10 Provide installed control diagrams by controls manufacturer.
 - .11 Provide *Contractor's* coordination drawings, with installed colour coded piping diagrams.
 - .12 Provide charts of valve tag numbers, with location and function of each valve, keyed to flow and control diagrams.
 - .13 Provide list of original manufacturer's spare parts, current prices, and recommended quantities to be maintained in storage.
 - .14 Include testing and balancing reports.
 - .15 Include additional content as specified in technical *Specifications* sections.
- 1.5 OPERATION AND MAINTENANCE MANUAL - PRODUCTS AND FINISHES
CONTENT
- .1 Include *Product* data, with catalogue number, options selected, size, composition, and colour and texture designations. Provide information for re-ordering custom manufactured *Products*.
 - .2 Instructions for cleaning agents and methods, precautions against detrimental agents and methods, and recommended schedule for cleaning and maintenance.

- .3 Include an outline of requirements for routine and special inspections and for regular maintenance to ensure that on-going performance of the building envelope will meet the initial building envelope criteria.
 - .4 Include additional content as specified in technical *Specifications* sections.
- 1.6 OPERATION AND MAINTENANCE MANUAL - WARRANTIES CONTENT
- .1 Separate each warranty with index tab sheets keyed to Table of Contents listing.
 - .2 List each warrantor with complete contact information.
 - .3 Verify that documents are in proper form and contain full information. Ensure that warranties are for the correct duration and are in *Owner's* name.
- 1.7 CONTRACTOR'S AS-BUILT DRAWINGS
- .1 The *Contractor* shall prepare and submit final as-built drawings to the *Owner*.
- 1.8 SPARE PARTS, MAINTENANCE MATERIALS, AND SPECIAL TOOLS
- .1 Supply spare parts, maintenance materials, and special tools in quantities specified in technical *Specifications* sections.
 - .2 Ensure spare parts and maintenance materials are new, not damaged nor defective, and of same quality, manufacturer, and batch or production run as installed *Products*.
 - .3 Provide tags for special tools identifying their function and associated *Product*.
 - .4 Deliver to and store items at location directed by *Owner* at *Place of the Work*. Store in original packaging with manufacturer's labels intact and in a manner to prevent damage or deterioration.
 - .5 Catalogue all items and submit to *Owner* an inventory listing organized by *Specifications* section. Include *Owner* reviewed inventory listing in operation and maintenance manual.

END OF SECTION

1.1 SUMMARY

- .1 Demonstrate and provide training to *Owner's* personnel on operation and maintenance of equipment prior to scheduled date of completion of the *Work*.
- .2 *Owner* will provide list of personnel to receive training and will coordinate their attendance at agreed upon times.
- .3 Coordinate and schedule demonstrations and training provided by *Subcontractors* and *Suppliers* as required.

1.2 SUBMITTALS

- .1 Submit proposed dates, times, durations, and locations for demonstration and training of each item of equipment and each system for which demonstration and training is required. Allow sufficient time for training and demonstration for each item of equipment or system, or time as may be specified in technical *Specifications*.
- .2 *Consultant* and *Owner* will review submittal and advise *Contractor* of any necessary revisions.
- .3 Submit report(s) within 10 *Working Days* after completion of demonstration and training:
 - .1 identifying time and date of each demonstration and training session,
 - .2 summarizing the demonstration and training performed, and
 - .3 including a list of attendees.

1.3 PREREQUISITES TO DEMONSTRATION AND TRAINING

- .1 Testing, adjusting, and balancing has been performed in accordance with *Contract Documents*.
- .2 Equipment and systems are fully operational.
- .3 Copy of completed operation and maintenance manual is available for use in demonstration and training.

1.4 DEMONSTRATION AND TRAINING

- .1 Demonstrate start-up, operation, control, adjustment, trouble-shooting, servicing, and maintenance of each item of equipment and system.
- .2 Review operation and maintenance manual in detail to explain all aspects of operation and maintenance.
- .3 Prepare and insert additional information in operation and maintenance manual if required.

END OF SECTION

1.1 CONTRACTOR RESPONSIBILITIES

- .1 Prepare each system ready for commissioning. Verify systems installation is complete and in operation.
- .2 Perform and document verification, performance testing, adjusting, and balancing operations.
- .3 Provide personnel and operate systems at designated times, and under conditions required for proper commissioning.
- .4 Participate in commissioning meetings.
- .5 Correct deficiencies identified in commissioning process.
- .6 Incorporate commissioning data into operation and maintenance manual.
- .7 Provide instruments necessary for commissioning.

1.2 CONSULTANT RESPONSIBILITIES

- .1 *Consultant* will:
 - .1 Participate in commissioning meetings.
 - .3 Review verification and performance test results and direct *Contractor* to correct defects or deficiencies in the *Work*.
 - .4 Provide technical support for *Change Orders* or *Change Directives* identified as necessary by the commissioning process.
 - .5 Review final commissioning report.

1.3 OWNER RESPONSIBILITIES

- .1 *Owner* will:
 - .1 Initiate *Change Orders* or *Change Directives* identified as necessary by the commissioning process.
 - .2 Assign operations and maintenance personnel to participate in meetings and witnessing demonstrations and training.
 - .2 Designate a person to acknowledge receipt of reports.

1.4 SCHEDULE OF EQUIPMENT AND SYSTEMS TO BE COMMISSIONED

- .1 Energy Recovery Ventilator including Controller.
- .2 Duct Heater and Local Controls.

- .3 Condensate Pump
- .4 Balancing Dampers

END OF SECTION

Part 1 General

1.1 RELATED REQUIREMENTS

- .1 Section 23 05 93 - Testing, Adjusting and Balancing for HVAC

1.2 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Product Data: Submit manufacturer's instructions, product literature, and data sheets for products and include product characteristics, performance criteria, physical size, finish and limitations.
- .2 Shop Drawings:
 - .1 Indicate on drawings:
 - .1 Mounting arrangements.
 - .2 Operating and maintenance clearances.
 - .2 Shop drawings and product data accompanied by:
 - .1 Detailed drawings of bases, supports, and anchor bolts.
 - .2 Acoustical sound power data, where applicable.
 - .3 Points of operation on performance curves.
 - .4 Manufacturer to certify current model production.

1.3 CLOSEOUT SUBMITTALS

- .1 Operation and Maintenance Data: submit operation and maintenance data and incorporate into manual.
 - .1 Operation and maintenance manual approved by, and final copies submitted to engineer before final inspection.
 - .2 Operation data to include:
 - .1 Control schematics for systems including environmental controls.
 - .2 Description of systems and their controls.
 - .3 Description of operation of systems at various loads together with reset schedules and seasonal variances.
 - .4 Operation instruction for systems and component.
 - .5 Description of actions to be taken in event of equipment failure.
 - .6 Valves schedule and flow diagram.
 - .7 Colour coding chart.
 - .3 Maintenance data to include:
 - .1 Servicing, maintenance, operation and trouble-shooting instructions for each item of equipment.
 - .2 Data to include schedules of tasks, frequency, tools required and task time.
 - .4 Performance data to include:

- .1 Equipment manufacturer's performance datasheets with point of operation as left after commissioning is complete.
- .2 Equipment performance verification test results.
- .3 Special performance data as specified.
- .4 Testing, adjusting and balancing reports as specified in Section 23 05 93 - Testing, Adjusting and Balancing for HVAC.
- .5 Additional data:
 - .1 Prepare and insert into operation and maintenance manual additional data when need for it becomes apparent during specified demonstrations and instructions.
- .6 Site records:
 - .1 Engineer will provide 1 set of reproducible mechanical drawings. Mark changes as work progresses and as changes occur. Include changes to existing mechanical systems, control systems and low voltage control wiring.
 - .2 Make available for reference purposes and inspection.
- .7 As-built drawings:
 - .1 Prior to start of Testing, Adjusting and Balancing for HVAC, finalize production of as-built drawings.
 - .2 Identify each drawing in lower right hand corner in letters at least 12 mm high as follows: - "AS BUILT DRAWINGS: THIS DRAWING HAS BEEN REVISED TO SHOW MECHANICAL SYSTEMS AS INSTALLED" (Signature of Contractor) (Date).
 - .3 Submit to Engineer for approval and make corrections as directed.
 - .4 Perform testing, adjusting and balancing for HVAC using as-built drawings.
 - .5 Submit completed reproducible as-built drawings with Operating and Maintenance Manuals.
- .8 Submit copies of as-built drawings for inclusion in final TAB report.

Part 2 Execution

2.1 EXAMINATION

- .1 Verification of Conditions: verify that conditions of substrate previously installed are acceptable for installation in accordance with manufacturer's instructions.
 - .1 Inform engineer of unacceptable conditions immediately upon discovery.
 - .2 Proceed with installation only after unacceptable conditions have been remedied and after receipt of written approval to proceed engineer.

2.2 ADJUSTING

- .1 Prime and touch up marred finished paintwork to match original.
- .2 Perform painting in accordance with drawings.
- .3 Restore finishes which have been damaged to a "like new" condition.

2.3 CLEANING

- .1 Final Cleaning: Clean interior and exterior of all systems including strainers. Vacuum interior of ductwork and air handling units.

2.4 DEMONSTRATION

- .1 Supply labour, material, and instruments required for testing.
- .2 Supply tools, equipment and personnel to demonstrate and instruct operating and maintenance personnel in operating, controlling, adjusting, trouble-shooting and servicing of all systems and equipment during regular work hours, prior to acceptance.
- .3 Use operation and maintenance manual, as-built drawings, and audio-visual aids as part of instruction materials.
- .4 Instruction duration time requirements as specified in appropriate Sections.

2.5 PROTECTION

- .1 Protect equipment and systems openings from dirt, dust, and other foreign materials with materials appropriate to system.

END OF SECTION

Part 1 General

1.1 SUMMARY

- .1 TAB is used throughout this Section to describe the process, methods, and requirements of testing, adjusting and balancing for HVAC.
- .2 TAB means to test, adjust and balance to perform in accordance with requirements of Contract Documents and to do other work as specified in this section.

1.2 QUALIFICATIONS OF TAB PERSONNEL

- .1 TAB: performed in accordance with the requirements of standard under which TAB Firm's qualifications are approved:
 - .1 Associated Air Balance Council, (AABC) National Standards for Total System Balance, MN-1-2002.
 - .2 National Environmental Balancing Bureau (NEBB) TABES, Procedural Standards for Testing, Adjusting, Balancing of Environmental Systems.
 - .3 Sheet Metal and Air Conditioning Contractors' National Association (SMACNA), HVAC TAB HVAC Systems - Testing, Adjusting and Balancing.
- .2 Recommendations and suggested practices contained in the TAB Standard: mandatory.
- .3 Use TAB Standard provisions, including checklists, and report forms to satisfy Contract requirements.
- .4 Use TAB Standard for TAB, including qualifications for TAB Firm and Specialist and calibration of TAB instruments.
- .5 Where instrument manufacturer calibration recommendations are more stringent than those listed in TAB Standard, use manufacturer's recommendations.
- .6 TAB Standard quality assurance provisions such as performance guarantees form part of this contract.
 - .1 For systems or system components not covered in TAB Standard, use TAB procedures developed by TAB Specialist.
 - .2 Where new procedures, and requirements, are applicable to Contract requirements have been published or adopted by body responsible for TAB Standard used (AABC, NEBB, or TABB), requirements and recommendations contained in these procedures and requirements are mandatory.

1.3 PURPOSE OF TAB

- .1 Test to verify proper and safe operation, determine actual point of performance, evaluate qualitative and quantitative performance of equipment, systems and controls at design, average and low loads using actual or simulated loads
- .2 Adjust and regulate equipment and systems to meet specified performance requirements and to achieve specified interaction with other related systems under normal and emergency loads and operating conditions.

- .3 Balance systems and equipment to regulate flow rates to match load requirements over full operating ranges.

1.4 EXCEPTIONS

- .1 TAB of systems and equipment regulated by codes, standards to satisfaction of authority having jurisdiction.

1.5 COORDINATION

- .1 Schedule time required for TAB (including repairs, re-testing) into project construction and completion schedule to ensure completion before acceptance of project.
- .2 Do TAB of each system independently and subsequently, where interlocked with other systems, in unison with those systems.

1.6 PRE-TAB REVIEW

- .1 Review Contract Documents before project construction is started and confirm in writing to engineer adequacy of provisions for TAB and other aspects of design and installation pertinent to success of TAB.
- .2 Review specified standards and report to engineer in writing proposed procedures which vary from standard.
- .3 During construction, coordinate location and installation of TAB devices, equipment, accessories, measurement ports and fittings.

1.7 START-UP

- .1 Follow start-up procedures as recommended by equipment manufacturer unless specified otherwise.
- .2 Follow special start-up procedures specified elsewhere in Division 23.

1.8 START OF TAB

- .1 Notify engineer.
- .2 Start TAB when building/renovation is essentially completed, including:
 - .1 Installation of ceilings, doors, windows, other construction affecting TAB.
 - .2 Application of weatherstripping, sealing, and caulking.
 - .3 Pressure, leakage, other tests specified elsewhere Division 23.
 - .4 Provisions for TAB installed and operational.
- .3 Start-up, verification for proper, normal and safe operation of mechanical and associated electrical and control systems affecting TAB including but not limited to:
 - .1 Proper thermal overload protection in place for electrical equipment.
 - .2 Air systems:
 - .1 Filters in place, clean.
 - .2 Duct systems clean.
 - .3 Ducts, air shafts, ceiling plenums are airtight to within specified tolerances.

- .4 Correct fan rotation.
- .5 Fire, smoke, volume control dampers installed and open.
- .6 Coil fins combed, clean.
- .7 Access doors, installed, closed.
- .8 Outlets installed, volume control dampers open.

1.9 APPLICATION TOLERANCES

- .1 Do TAB to following tolerances of design values:
 - .1 HVAC systems: plus 10%, minus 10%.

1.10 ACCURACY TOLERANCES

- .1 Measured values accurate to within plus or minus 2% of actual values.

1.11 INSTRUMENTS

- .1 Calibrate in accordance with requirements of most stringent of referenced standard for either applicable system or HVAC system.
- .2 Calibrate within 3 months of TAB.

1.12 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit, prior to commencement of TAB:
- .2 Proposed methodology and procedures for performing TAB if different from referenced standard.

1.13 PRELIMINARY TAB REPORT

- .1 Submit for checking and approval of engineer, prior to submission of formal TAB report, sample of rough TAB sheets. Include:
 - .1 Details of instruments used.
 - .2 Details of TAB procedures employed.
 - .3 Calculations procedures.
 - .4 Summaries.

1.14 TAB REPORT

- .1 Format in accordance with referenced standard.
- .2 TAB report to show results in SI units and to include:
 - .1 Project record drawings.
 - .2 System schematics.
- .3 Submit copy of TAB Report to engineer for verification and approval, in English, complete with index tabs.

1.15 VERIFICATION

- .1 Reported results subject to verification by engineer.

- .2 Provide personnel and instrumentation to verify up to 30% of reported results.
- .3 Number and location of verified results as directed by engineer.
- .4 Pay costs to repeat TAB as required to satisfaction of engineer.

1.16 SETTINGS

- .1 After TAB is completed to satisfaction of engineer, replace drive guards, close access doors, lock devices in set positions, ensure sensors are at required settings.
- .2 Permanently mark settings to allow restoration at any time during life of facility. Do not eradicate or cover markings.

1.17 COMPLETION OF TAB

- .1 TAB considered complete when final TAB Report received and approved by engineer.

1.18 AIR SYSTEMS

- .1 Standard: TAB to most stringent of this section or TAB standards of ASHRAE.
- .2 Do TAB of following systems, equipment, components, controls:
 - .1 Energy Recovery Ventilator
 - .2 Pre-heat electric resistance air coil
- .3 Qualifications: personnel performing TAB current member in good standing/qualified to standards of AABC or NEBB.
- .4 Measurements: to include as appropriate for systems, equipment, components, controls: air velocity, static pressure, flow rate, pressure drop (or loss), temperatures (dry bulb, wet bulb, dewpoint), duct cross-sectional area, RPM, electrical power, voltage, noise, vibration.
- .5 Locations of equipment measurements: to include as appropriate:
 - .1 Inlet and outlet of dampers, filter, coil, humidifier, fan, other equipment causing changes in conditions.
 - .2 At controllers, controlled device.
- .6 Locations of systems measurements to include as appropriate: main ducts, main branch, sub-branch, run-out (or grille, register or diffuser).

1.19 OTHER TAB REQUIREMENTS

- .1 General requirements applicable to work specified this paragraph:
 - .1 Qualifications of TAB personnel: as for air systems specified this section.
 - .2 Quality assurance: as for air systems specified this section.
- .2 Smoke management systems:
 - .1 Test for proper operation of all smoke and fire dampers, sensors, detectors, installed as component parts of air systems specified Division 23.

END OF SECTION

Part 1 General

1.1 RELATED REQUIREMENTS

- .1 Section 26 05 00 - Common Work Results for Electrical

1.2 REFERENCE STANDARDS

- .1 American National Standards Institute (ANSI)/American Society of Heating, Refrigeration and Air-Conditioning Engineers (ASHRAE):
 - .1 ANSI/ASHRAE 84-2020, Method of Testing Air-to-Air Heat/Energy Exchangers

1.3 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Product Data:
 - .1 Submit manufacturer's instructions, printed product literature and data sheets for energy recovery equipment and include product characteristics, performance criteria, physical size, finish and limitations.
- .2 Manufacturers' Instructions: submit manufacturer's installation instructions.

1.4 DELIVERY, STORAGE, AND HANDLING

- .1 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address.
- .2 Storage and Handling Requirements:
 - .1 Store materials off ground, indoors and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.

Part 2 Products

2.1 GENERAL

- .1 Comply with ASHRAE 84.

2.2 ENTHALPY TYPE AIR TO AIR ROTARY HEAT EXCHANGER

- .1 Capacity: as indicated.
- .2 Casing: welded structural steel, galvanized after manufacture, with removable side panels.
- .3 Seals: adjustable at periphery of rotor, on duct divider and on purge sections.
- .4 Motor: variable speed, with belt drive.
- .5 Media: non-metallic and bacteriostatic with desiccant and coated with silicate.
- .6 Purge section, maximum cross contamination of particulates: 0.2% of supply air volume and 0.04% of exhaust air volume.
- .7 Performance characteristics: as indicated.

Part 3 Execution

3.1 EXAMINATION

- .1 Verification of Conditions: verify that conditions of substrate previously installed under other Sections or Contracts are acceptable for energy recovery equipment installation in accordance with manufacturer's written instructions.
 - .1 Inform engineer of unacceptable conditions immediately upon discovery.
 - .2 Proceed with installation only after unacceptable conditions have been remedied.

3.2 INSTALLATION

- .1 Install in accordance with manufacturers recommendations.
- .2 Support independently of adjacent ductwork.

END OF SECTION

Part 1 General

1.1 RELATED REQUIREMENTS

- .1 Section 23 05 00 - Common Work Results for HVAC
- .2 Section 23 05 93 - Testing, Adjusting and Balancing for HVAC
- .3 Section 26 05 00 - Common Work Results for Electrical

1.2 REFERENCE STANDARDS

- .1 CSA Group (CSA):
 - .1 CSA C22.2 No.155, Electric Duct Heaters

1.3 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Product Data:
 - .1 Submit manufacturer's instructions, product literature and data sheets for duct heaters and controls and include product characteristics, performance criteria, physical size, finish and limitations.
- .2 Shop Drawings:
 - .1 Submit drawings showing:
 - .1 Element support details.
 - .2 Unit support.
 - .3 Internal components wiring diagrams.
 - .2 Submit duct heater schedule indicating quantities, sizes, mounting arrangement and the following performance data:
 - .1 Electrical: total kW rating, voltage, phase.
 - .2 Heater element watt/density.
 - .3 Controller type.
 - .4 Number of stages and kW rating.
 - .5 Minimum operating airflow.
 - .6 Maximum discharge temperature.
 - .7 Pressure drop at operating airflow.
 - .8 Accessories included.

1.4 DELIVERY, STORAGE, AND HANDLING

- .1 Deliver, store, and handle materials in accordance with Section 23 05 00 - Common Work Results for HVAC.

Part 2 Products

2.1 OPEN COIL DUCT HEATERS

- .1 Duct heater approved to CSA C22.2 No.155 and listed for zero clearance to combustible material.
- .2 Performance/Design Criteria:
 - .1 Refer to duct heater schedule for size, electrical requirements (volts, phases), capacity (kW), operating airflow, controller type, number of stages and special accessories.
 - .2 Open Coil Duct Heaters: ENERGY STAR certified.
- .3 Construction:
 - .1 Frame: corrosion-resistant galvanized steel.
 - .2 Heating elements: helical coils of high grade nickel-chrome alloy resistance wire supported and insulated by floating ceramic bushings fastened to the frame and supporting brackets.
 - .3 Coil terminal pins: mechanically secured and insulated from the frame with high temperature ceramic bushings.
 - .4 Mounting: slip-in insertion type.
 - .5 Protective Screens: installed on both sides of heater.
- .4 Safety Controls:
 - .1 High Temperature Cutouts: include fail-safe thermal protection devices which automatically de-energize the heater on overheating condition.
 - .1 Primary High Limit Switch: automatic reset disc type thermal cutout.
 - .2 Secondary High-Limit Switch: additional manual reset disc type thermal cutout
 - .2 Airflow Proving Switch: diaphragm type air pressure switch with automatic reset, screw type setpoint adjustment and static pressure probe; switch to de-energize duct heater circuits in case of insufficient air flow.
- .5 Panel:
 - .1 All built-in controls and electrical components to be factory mounted and wired inside the panel; wiring to be terminated on clearly identified terminal blocks.
 - .2 Provide unit specific wiring diagram permanently attached inside the panel.
- .6 Controls:
 - .1 Duct heater to include the following built-in controls: magnetic contactors, control transformer, safety controls and controllers.
 - .2 Controller Type: as indicated on duct heater schedule.
 - .1 Stage Control: on-off control of a single or multiple stages.
 - .2 Proportional Control: single-stage proportional control providing full modulation of the heater's capacity.
 - .3 Hybrid Control: Vernier type step control system combining multiple on-off stages with one proportional SCR stage.
 - .4 Thermostat: ENERGY STAR certified.

2.2 ACCESSORIES

- .1 Provide accessories where indicated on duct heater schedule.
- .2 Thermostats: low voltage electronic thermostat compatible with duct heater controller.
 - .1 Duct Thermostats: insertion type with casing and adjustable setpoint.

Part 3 Execution

3.1 EXAMINATION

- .1 Verification of Conditions: verify site conditions are acceptable for duct heater installation in accordance with manufacturer's written instructions.
 - .1 Inform engineer of unacceptable conditions immediately upon discovery.
 - .2 Proceed with installation only after unacceptable conditions have been remedied.

3.2 INSTALLATION

- .1 Perform installation in accordance with manufacturer's instructions.
- .2 Locate duct heater in accordance with manufacturer's minimum recommended distances for operation, service access and unit removal.
- .3 Provide additional hangers and supports where duct heater weight cannot be supported solely by existing duct.
- .4 Make power and control connections to CSA C22.2 No.155
- .5 Verify that ductwork and casings are free of debris before operating and testing duct heaters.

3.3 SITE QUALITY CONTROL

- .1 Perform tests in accordance with Section 26 05 00 - Common Work Results for Electrical.
- .2 Duct Heater Controls: test operation of safety controls and duct heater staging/modulation by simulating a demand from the local thermostat or external control signal.
- .3 Site Adjustments: test and adjust airflow controls during system testing, adjusting and balancing in coordination with Section 23 05 93 - Testing, Adjusting and Balancing for HVAC.

END OF SECTION

Part 1 General

1.1 DEFINITIONS

- .1 Electrical and electronic terms: unless otherwise specified or indicated, terms used in these specifications, and on drawings, are those defined by IEEE SP1122.

1.2 REFERENCE STANDARDS

- .1 CSA Group
 - .1 CSA C22.1-12, Canadian Electrical Code, Part 1 (22nd Edition), Safety Standard for Electrical Installations.
 - .2 CSA C22.2
- .2 Institute of Electrical and Electronics (IEEE)/National Electrical Safety Code Product Line (NESC)
 - .1 IEEE SP1122-2000, The Authoritative Dictionary of IEEE Standards Terms, 7th Edition.

Part 2 Products

2.1 DESIGN REQUIREMENTS

- .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.
 - .1 Equipment to operate in extreme operating conditions established in above standard without damage to equipment.
- .3 Language operating requirements: provide identification nameplates and labels for control items in English.

2.2 ELECTRIC MOTORS, EQUIPMENT AND CONTROLS

- .1 Verify installation and co-ordination responsibilities related to motors, equipment and controls, as indicated.

2.3 WARNING SIGNS

- .1 Warning Signs: in accordance with requirements of authority having jurisdiction.

2.4 WIRING TERMINATIONS

- .1 Ensure lugs, terminals, screws used for termination of wiring are suitable for either copper or aluminum conductors.

2.5 EQUIPMENT IDENTIFICATION

- .1 Identify electrical equipment with nameplates and labels.

2.6 WIRING IDENTIFICATION

- .1 Identify wiring with permanent indelible identifying markings, numbered and/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 coding: to CSA C22.1
- .4 Use colour coded wires in communication cables, matched throughout system.

2.7 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 15 m intervals.
- .3 Colours: 25 mm wide prime colour and 20 mm wide auxiliary colour.

Type	Prime	Auxiliary
up to 250 V	Yellow	
up to 600 V	Yellow	Green
up to 5 kV	Yellow	Blue
up to 15 kV	Yellow	Red
Telephone	Green	
Other Communication Systems	Green	Blue
Fire Alarm	Red	
Emergency Voice	Red	Blue
Other Security Systems	Red	Yellow

Part 3 Execution

3.1 EXAMINATION

- .1 Verification of Conditions: verify that conditions of substrate previously installed under other Sections or Contracts are acceptable for installation in accordance with manufacturer's written instructions.
 - .1 Inform engineer of unacceptable conditions immediately upon discovery.
 - .2 Proceed with installation only after unacceptable conditions have been remedied.

3.2 INSTALLATION

- .1 Do complete installation in accordance with CSA C22.1 except where specified otherwise.
- .2 Do overhead and underground systems in accordance with CAN/CSA-C22.3 No.1 except where specified otherwise.

3.3 NAMEPLATES AND LABELS

- .1 Ensure manufacturer's nameplates, CSA labels and identification nameplates are visible and legible after equipment is installed.

3.4 MOUNTING HEIGHTS

- .1 Mounting height of equipment is from finished floor to centreline of equipment unless specified or indicated otherwise.
- .2 If mounting height of equipment is not specified or indicated, verify before proceeding with installation.

3.5 CO-ORDINATION OF PROTECTIVE DEVICES

- .1 Ensure circuit protective devices such as overcurrent trips, relays and fuses are installed to required values and settings.

END OF SECTION



**CITY OF KENORA
INVITATION TO TENDER**

ITT #125-001-23

**Appendix B
Drawings**

CITY OF KENORA

CITY HALL VENTILATION

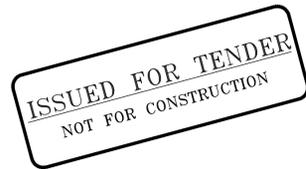
1 MAIN ST. SOUTH

KENORA, ON

LBE Group Project #23167

DRAWING LIST

		REV.
23-167-G01	NOTES AND SCHEDULES	3
23-167-M01	SECOND FLOOR VENTILATION	3
23-167-M02	THIRD FLOOR VENTILATION	0
23-167-M03	SECOND FLOOR SUPPLY AND EXHAUST PLAN	3
23-167-E01	ERV ELECTRICAL PLAN	3



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GENERAL NOTES

- DRAWINGS ARE DIAGRAMMATIC ONLY. DO NOT SCALE.
- CONTRACTOR SHALL VERIFY ALL DIMENSIONS ON SITE PRIOR TO INSTALLATION AND REPORT ANY ERRORS AND/OR OMISSIONS TO THE ENGINEER.
- CONTRACTOR SHALL MAINTAIN DIGITAL PHOTOGRAPHIC RECORDS OF ALL INSTALLATIONS PRIOR TO CONCEALMENT BY SUPPORTING TRADES.
- ALL WORK TO BE COMPLETED BY APPROPRIATELY LICENSED PERSONNEL IN ACCORDANCE WITH THE LATEST EDITION OF THE ONTARIO BUILDING CODE AND ALL APPLICABLE RULES AND REGULATIONS.
- ALL WORK SHALL COMPLY WITH THE MOST CURRENT VERSION OF ALL APPLICABLE CODES AND STANDARDS. IN THE CASE OF CONFLICTING REQUIREMENTS, THE MOST STRINGENT REGULATION SHALL PREVAIL.
- CONTRACTOR TO OBTAIN AND PAY FOR ALL NECESSARY PERMITS TO ALLOW COMPLETION OF THE WORK.
- CONTRACTOR TO ARRANGE AND PAY FOR ALL NECESSARY INSPECTIONS REQUIRED BY THE AUTHORITIES HAVING JURISDICTION.
- DOCUMENT THE COMPLETE INSTALLATION WITH PHOTOGRAPHS. SUBMIT PHOTOGRAPHS TO THE OWNER AND ENGINEER AS THE PROJECT PROGRESSES.
- ANY CHANGES FROM THE DRAWINGS TO BE APPROVED BY ENGINEER BEFORE COMPLETION.
- KEEP ONE SET OF DRAWINGS ON SITE TO RECORD ALL CHANGES FROM THE DRAWINGS. MARK THE DRAWINGS "AS BUILT" AND SUBMIT TO OWNER OR ENGINEER UPON COMPLETION OF THE PROJECT.
- CONTRACTOR IS RESPONSIBLE FOR FINAL LAYOUT AND ROUTING.
- SUBMIT SHOP DRAWINGS TO ENGINEER FOR APPROVAL PRIOR TO ORDERING EQUIPMENT.
- THE APPROVAL OF SHOP DRAWINGS DOES NOT RELIEVE THE CONTRACTOR FROM THE RESPONSIBILITY OF THE FITTING OF EQUIPMENT AND COMPONENTS. ANY DISCREPANCIES IN THE SHOP DRAWINGS ARE THE RESPONSIBILITY OF THE CONTRACTOR.

HEATING/COOLING

- EQUIPMENT TO BE INSTALLED GENERALLY IN ACCORDANCE WITH THE DRAWINGS, HOWEVER, FIELD FITTING MAY BE REQUIRED.
- INSTALL ALL EQUIPMENT TO ALLOW SUFFICIENT ROOM FOR FUTURE SERVICE AND MAINTENANCE.
- INSTALL CONDENSATE DRAINS IN ACCORDANCE WITH MANUFACTURERS' RECOMMENDATIONS. WHERE POSSIBLE CONDENSATE SHALL BE DRAINED BY GRAVITY. IF GRAVITY DRAIN IS NOT POSSIBLE INSTALL CONDENSATE PUMPS.
- INSTALL THERMOSTATS WHERE INDICATED AT A HEIGHT OF 5 FT ABOVE THE FINISHED FLOOR ELEVATION.
- ALL EQUIPMENT WILL BE AS OUTLINED IN THE EQUIPMENT SCHEDULE. REPORT ANY DISCREPANCIES, ERRORS OR OMISSIONS TO THE ENGINEER.
- PROVIDE 24 HOUR EMERGENCY SERVICE FOR THE ENTIRE WARRANTY PERIOD AT NO COST TO THE OWNER.
- MECHANICAL COMPONENTS BEING STORED ON SITE TO BE PROTECTED UNTIL INSTALLATION INTO SYSTEM.

DUCTWORK

- ALL WORK SHALL BE COMPLETED OR DIRECTLY SUPERVISED BY A LICENSED SHEET METAL WORKER.
- DUCTWORK SHALL BE INSTALLED IN ACCORDANCE WITH DESIGN DRAWINGS. FIELD FITTING MAY BE REQUIRED AND IF REQUIRED, SHALL BE CONFIRMED WITH ENGINEER BEFORE INSTALLATION BEGINS.
- ALL DUCTWORK CONNECTIONS TO FURNACES SHALL BE ISOLATED FROM THE DUCTWORK BY INSTALLATION OF FLEXIBLE DUCT CONNECTIONS ON BOTH SUPPLY AND RETURN DUCTWORK.
- SUPPLY PLENUMS AND RETURN AIR PLENUMS LOCATED OUTSIDE SHALL BE INSULATED WITH 2" THICK FIBERGLASS INSULATION WITH CLADDING.
- CONTRACTOR TO ENSURE ALL MATERIALS MODIFIED OR INSTALLED IN AN AIR PLENUM ARE RATED FOR SUCH USE.
- ALL DUCTWORK WILL BE GALVANIZED STEEL AND SHALL BE FABRICATED IN ACCORDANCE WITH ASHRAE RECOMMENDATIONS.
- INSTALL ULC RATED FIRE DAMPERS WITH FUSIBLE LINKS WHERE REQUIRED. ARRANGEMENT TYPE B OR C, BLADES OUT OF AIR STREAM LISTED AND BEAR LABEL OF ULC, MEET REQUIREMENTS OF PROVINCIAL FIRE AUTHORITY AND ANSI/NFPA 90A.
- PROVIDE GRILLES AND DIFFUSERS COLOURED AS SPECIFIED OR TO MATCH FINISHES.

ELECTRICAL

- GENERAL**
 - ALL ELECTRICAL WORK TO BE COMPLETED BY LICENSED ELECTRICAL CONTRACTOR IN ACCORDANCE WITH THE ONTARIO ELECTRICAL CODE.
 - OBTAIN ELECTRICAL PERMIT AND INSPECTION.
 - PROVIDE AND INSTALL A MEANS OF ELECTRICAL DISCONNECT AT EACH PIECE OF EQUIPMENT, AS REQUIRED BY CODE.
 - PROVIDE ALL MATERIALS, LABOUR, PLANT AND EQUIPMENT NECESSARY TO MAKE A COMPLETE INSTALLATION AS DESCRIBED AND SHOWN. THIS INSTALLATION SHALL BE LEFT COMPLETE AND READY FOR OPERATION.
 - THE INSTALLATION SHALL CONFORM IN EVERY RESPECT TO THE RULES AND REGULATIONS OF THE LATEST EDITION OF THE CANADIAN ELECTRICAL CODE. ALL WORK SHALL BE UNIFORM AND HIGH QUALITY. ALL EQUIPMENT SUPPLIED UNDER THIS CONTRACT SHALL BE NEW AND BUILT IN ACCORDANCE WITH EEMAC STANDARDS. SHALL BE CSA CERTIFIED COMPONENTS MUST ALSO HAVE A CSA OR EQUIVALENT CERTIFICATION FOR THE ENTIRE ASSEMBLY. PROVIDE INSPECTION CERTIFICATE UPON COMPLETION OF THE WORK.
 - OBTAIN ALL NECESSARY PERMITS, PAY ALL NECESSARY FEES, GIVE ALL NECESSARY NOTICES AND OBTAIN APPROVAL OF THE ELECTRICAL AUTHORITIES HAVING JURISDICTION.

2. REMOVALS

- REMOVE ALL UNNECESSARY EXISTING ELECTRICAL EQUIPMENT, WIRING AND FIXTURES IN THOSE PORTIONS OF THE EXISTING BUILDING WHICH ARE BEING REMODELED OR DEMOLISHED. THE OWNER MAY SELECT FROM THE MATERIALS AND/OR EQUIPMENT REMAINING WHICH THEY WISH TO RETAIN AND THE REMAINDER SHALL BE REMOVED FROM THE SITE.
- ANY ELECTRICAL EQUIPMENT IN REMODELED SECTIONS OR IN STRUCTURES REMOVED OR ALTERED, ADJACENT TO NEW WORK, NECESSARY FOR THE OPERATION OF THE EXISTING BUILDING, SHALL BE RELOCATED AND/OR RECONNECTED AS NECESSARY.
- ALL EXISTING EQUIPMENT REUSED SHALL BE MADE GOOD AND GUARANTEED.
- POWER INTERRUPTIONS SHALL BE KEPT TO A MINIMUM AND SHALL BE TIME SUITABLE TO THE BUILDING OCCUPANT(S).

3. WORK IN EXISTING BUILDING

- COORDINATION
 - SHOULD AND TEMPORARY 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 CONTRACT ADMINISTRATOR.
 - IF EXISTING EQUIPMENT SHOWN ON DRAWINGS IS DEFECTIVE IT SHOULD BE BROUGHT TO THE CONTRACT ADMINISTRATOR'S ATTENTION PRIOR TO WORK COMPLETION.
- INSTALLATIONS
 - INSTALL BOXES, CONDUIT AND WIRING THROUGH EXISTING AREAS AS REQUIRED FOR THE NEW INSTALLATION.
 - ADD MODULES, SWITCHES, ETC. IN EXISTING CONTROL PANELS, AS REQUIRED, TO EXTEND EXISTING SYSTEMS TO NEW OR RENOVATED AREAS.
 - PATCH AND REPAIR WALLS AND CEILINGS IN EXISTING AREAS THAT HAVE BEEN DAMAGED OR CUT OPEN DUE TO THE NEW ELECTRICAL INSTALLATION.
 - WHERE NEW CABLES OR CONDUITS HAVE BEEN INSTALLED THROUGH EXISTING FIRE RATED WALLS, SEAL OPENINGS AROUND CABLES AND CONDUIT TO MAINTAIN FIRE RATING.
- ALL EXISTING EQUIPMENT REUSED SHALL BE MADE GOOD AND GUARANTEED
 - POWER INTERRUPTIONS SHALL BE KEPT TO A MINIMUM AND SHALL BE A TIME SUITABLE TO THE BUILDING OCCUPANT(S).

4. WIRING METHOD

- FOR OUTDOOR WIRING USE TECK CONDUCTORS, UNLESS OTHERWISE SPECIFIED.
- ALL CONDUCTORS SHALL BE COPPER. MINIMUM CONDUCTOR SIZE SHALL BE #12 AWG EXCEPT AS NOTED.

5. GROUNDING

- THE ENTIRE INSTALLATION SHALL BE GROUNDED IN CONFORMANCE TO THE LATEST EDITION OF THE CANADIAN ELECTRICAL CODE.
- ALL CONDUIT TO HAVE A SEPARATE INSULATED GROUND CONDUCTOR.

6. CONDUITS AND CABLE

- DRAWINGS DO NOT INDICATE ALL CONDUIT AND CABLE RUNS. THOSE INDICATED ARE IN DIAGRAMMATIC FORM ONLY.
- MINIMUM CONDUIT SIZE SHALL BE 3/4" UNLESS INDICATED OTHERWISE.
- ALL CONDUITS SHALL HAVE SEPARATE INSULATED GREEN GROUND CONDUCTOR.

7. CONDUITS, FASTENINGS AND FITTINGS

- ONE HOLE STEEL STRAPS TO SECURE SURFACE CONDUITS 50MM AND SMALLER.
- FITTINGS FOR RACEWAYS: TO CSA C22.2 NO. 18.
- FITTINGS: MANUFACTURED FOR USE WITH CONDUIT SPECIFIED COATING SAME AS CONDUIT.
- FACTORY "ELLS" WHERE 90° BENDS ARE REQUIRED.

8. CONDUIT AND CABLE IDENTIFICATION

- COLOUR CODE CONDUITS, BOXES AND METALLIC SHEATHED CABLE.
- COLOUR CODING TO MATCH EXISTING WHERE APPLICABLE.
- CODE WITH PLASTIC TAPE OR PAINT AT POINTS WHERE CONDUIT OR CABLE ENTERS WALL, CEILING OR FLOOR AND AT 15M INTERVALS.
- COLOURS: 25MM WIDE PRIME COLOUR AND 200MM WIDE AUXILIARY COLOUR.
 - PRIME
 - UP TO 250V (NORMAL POWER)
 - YELLOW
- OTHER CONDUIT SYSTEMS AS DIRECTED ON SITE; ALL CONDUIT SYSTEMS SHALL BE IDENTIFIED.

9. POWER DISTRIBUTION SYSTEM

- PROVIDE ALL BREAKERS, CONDUIT DISCONNECTS, CONDUCTORS AND ACCESSORIES REQUIRED FOR THE INSTALLATION OF PANELBOARDS AS INDICATED ON THE DRAWING AND IN THIS SPECIFICATION.
- SUBMIT SHOP DRAWINGS IN ACCORDANCE WITH ELECTRICAL GENERAL PROVISIONS.
- DRAWINGS TO INCLUDE ELECTRICAL DETAIL OF PANEL, BRANCH BREAKER TYPE, QUANTITY, AMPACITY AND ENCLOSURE DIMENSION.
- IN ADDITION TO CSA REQUIREMENTS, MANUFACTURE'S NAMEPLATE MUST SHOW FAULT CURRENT THAT PANEL INCLUDING BREAKERS HAD BEEN BUILT TO WITHSTAND.
- PANELBOARDS: TO CSA C-22.2 NO. 29.
- PANELBOARDS: PRODUCT OF ONE MANUFACTURER.
- SEQUENCE PHASE BUSSING SUCH THAT CIRCUIT BREAKERS WILL BE NUMBERED IN CONSECUTIVE ORDER, WITH EACH BREAKER IDENTIFIED BY PERMANENT BY NUMBER IDENTIFICATION AS TO CIRCUIT BREAKERS AS INDICATED.
- PANELBOARDS: MAZES, NUMBER OF CIRCUITS, AND NUMBER AND SIZE OF BRANCH CIRCUIT BREAKERS AS INDICATED.
- PROVIDE PANEL COVERS FOR ALL PANELBOARDS AND SUPPLY TWO KEYS FOR EACH PANELBOARD AND KEY PANELBOARDS ALIKE.
- COMPLETE CIRCUIT DIRECTORY WITH TYPEWRITTEN LEGEND SHOWING LOCATION OF EACH CIRCUIT.
- LOCATE PANELBOARDS AS INDICATED AND MOUNT SECURELY, PLUMB, TRUE AND SQUARE, TO ADJOINING SURFACES. PROVIDE 3/4" THICK PLYWOOD BACKER BOARD WHERE REQUIRED.

GRILLE & DIFFUSER SCHEDULE			
TAG	SERVICE	DESCRIPTION	REMARKS
A	SUPPLY	CURVED SPIRAL DUCT DIFFUSER	C/W DAMPER
B	RETURN	LINEAR BAR GRILLE	

ENERGY RECOVERY VENTILATOR SCHEDULE													
TAG	DESCRIPTION	MAKE	MODEL	AIRFLOW	HEATING			CONTROLS			ELECTRICAL	REMARKS	
					EXTERNAL STATIC PRESS.	PREHEAT COIL		INTERLOCK					INTERFACE
					CFM	IN. H2O	Y/N	SUPPLY	INSTALL	WITH			(V/A/Ø/Hz)
ERV-1	SECOND FLOOR VENTILATION	VANEE	V210E75RS	210	0.3	Y	MECH	MECH	DH-1		120/3.6/1/60	CEILING MOUNTED, INTAKE AND EXHAUST C/W WEATHER HOOD (BLACK)AND BIRD SCREEN	
ERV-2	THIRD FLOOR VENTILATION	VANEE	V210E75RT	210	0.3	Y	MECH	MECH	DH-2		120/3.6/1/60	CEILING MOUNTED, INTAKE AND EXHAUST C/W WEATHER HOOD (BLACK)AND BIRD SCREEN	

DUCT HEATER SCHEDULE													
TAG	DESCRIPTION	MAKE	MODEL	ELECTRICAL				CONTROLS					REMARKS
				P (KW)	VAC/Ø	I (A)	CTRL V	SIGNALS	SUPPLY	INSTALL	INTERLOCK	THERMOSTATS	
DH-1	ELECTRICAL PREHEAT COIL	NEPTRONIC	DF CFOOH	5	120/1	41.67	24	ON/OFF	MECH	MECH/ELEC	ERV-1	TRO5404/STC 8-11	OPERATING TEMP. SET POINT @ 0°C
DH-2	ELECTRICAL PREHEAT COIL	NEPTRONIC	DF CFOOH	5	120/1	41.67	24	ON/OFF	MECH	MECH/ELEC	ERV-2	TRO5404/STC 8-11	OPERATING TEMP. SET POINT @ 0°C

3	REVISED SCHEDULES	2023/10/30
2	REVISED FOR SECOND FLOOR ONLY	2023/09/21
1	ISSUED FOR TENDER	2023/09/07
0	ISSUED FOR COMMENT	2023/08/18
W	WORK	REV

SCALE



The Contractor shall check and verify all dimensions and report all errors and omissions to the Engineer (as applicable) for his/her written direction before proceeding with the Work.

A	Sheet No
B	Sheet No when detailed



LBE group inc.

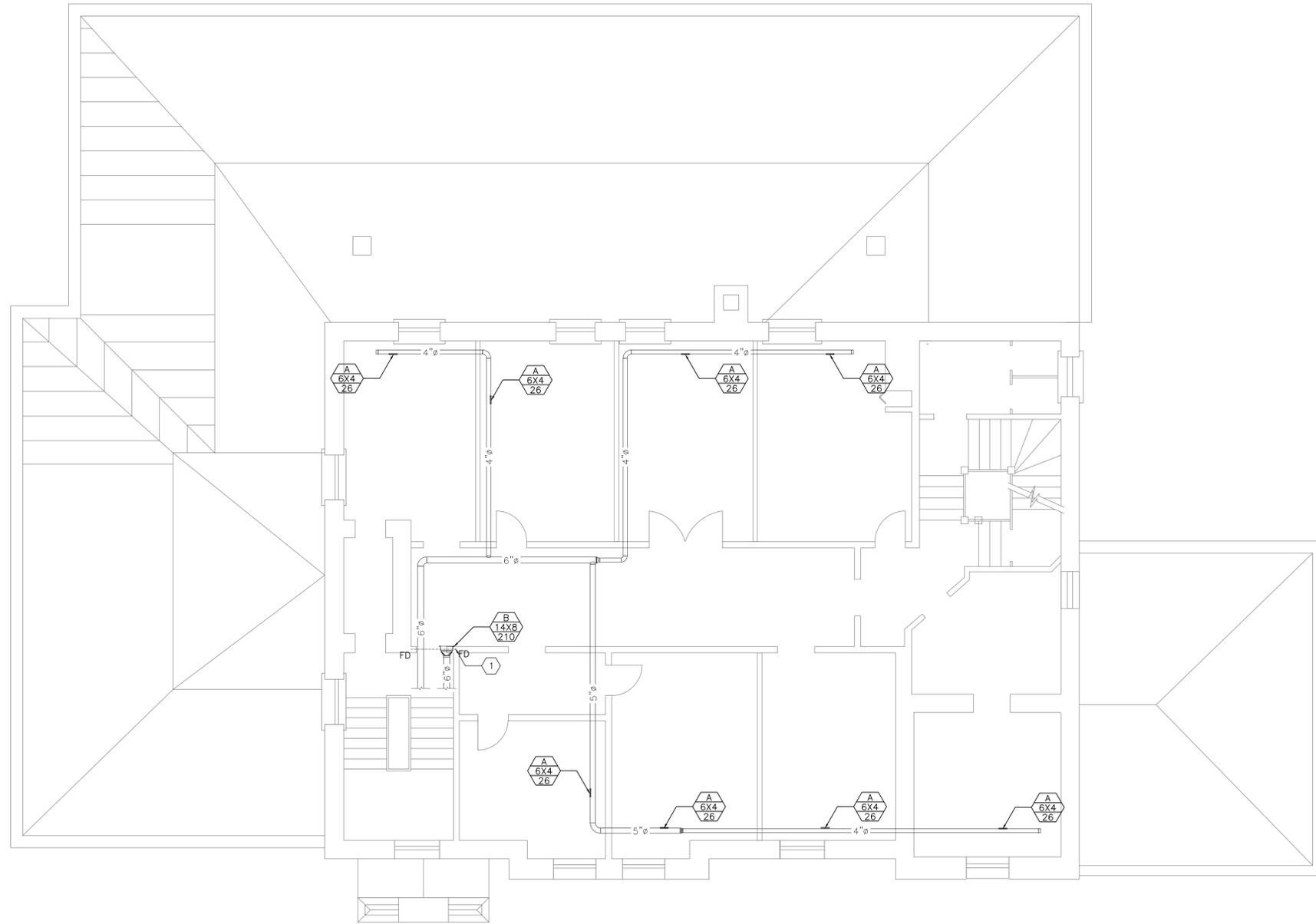
CITY OF KENORA

CITY HALL VENTILATION

1 MAIN ST. SOUTH
KENORA, ON

NOTES AND SCHEDULES

DATE AS NOTED	DATE
2022-08-31	2022-08-31
DATE BY	DATE BY
23-167-G01	3
ISSUED BY	
1	5



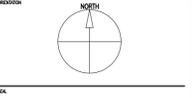
- GENERAL NOTES**
- DRAWINGS ARE DIAGRAMMATIC ONLY. DO NOT SCALE.
 - CONTRACTOR SHALL VERIFY ALL DIMENSIONS ON SITE PRIOR TO INSTALLATION AND REPORT ANY ERRORS AND/OR OMISSIONS TO THE ENGINEER.
 - CONTRACTOR SHALL MAINTAIN DIGITAL PHOTOGRAPHIC RECORDS OF ALL INSTALLATIONS PRIOR TO CONCEALMENT BY SUPPORTING TRADES.
 - ALL WORK TO BE COMPLETED BY APPROPRIATELY LICENSED PERSONNEL IN ACCORDANCE WITH THE LATEST EDITION OF THE ONTARIO BUILDING CODE AND ALL APPLICABLE RULES AND REGULATIONS.
 - ALL WORK SHALL COMPLY WITH THE MOST CURRENT VERSION OF ALL APPLICABLE CODES AND STANDARDS. IN THE CASE OF CONFLICTING REQUIREMENTS, THE MOST STRINGENT REGULATION SHALL PREVAIL.
 - CONTRACTOR TO OBTAIN AND PAY FOR ALL NECESSARY PERMITS TO ALLOW COMPLETION OF THE WORK.
 - CONTRACTOR TO ARRANGE AND PAY FOR ALL NECESSARY INSPECTIONS REQUIRED BY THE AUTHORITIES HAVING JURISDICTION.
 - DOCUMENT THE COMPLETE INSTALLATION WITH PHOTOGRAPHS. SUBMIT PHOTOGRAPHS TO THE OWNER AND ENGINEER AS THE PROJECT PROGRESSES.
 - ANY CHANGES FROM THE DRAWINGS TO BE APPROVED BY ENGINEER BEFORE COMPLETION.
 - KEEP ONE SET OF DRAWINGS ON SITE TO RECORD ALL CHANGES FROM THE DRAWINGS. MARK THE DRAWINGS "AS BUILT" AND SUBMIT TO OWNER OR ENGINEER UPON COMPLETION OF THE PROJECT.
 - CONTRACTOR IS RESPONSIBLE FOR FINAL LAYOUT AND ROUTING.
 - SUBMIT SHOP DRAWINGS TO ENGINEER FOR APPROVAL PRIOR TO ORDERING EQUIPMENT.
 - THE APPROVAL OF SHOP DRAWINGS DOES NOT RELIEVE THE CONTRACTOR FROM THE RESPONSIBILITY OF THE FITTING OF EQUIPMENT AND COMPONENTS. ANY DISCREPANCIES IN THE SHOP DRAWINGS ARE THE RESPONSIBILITY OF THE CONTRACTOR.

- LEGEND:**
- 1 PROVIDE FIRE DAMPER WHERE REQUIRED.

- DRAWING NOTES**
- DUCTWORK TO BE EXPOSED SPIRAL, FINISH TO BE DETERMINED BY CLIENT.
 - PROVIDE SUFFICIENT CLEARANCES FOR INTAKE AND EXHAUST WITH RESPECT TO OTHER BUILDING SERVICES.
 - PROVIDE 24" ON EITHER SIDE OF DUCT HEATER BEFORE ANY TRANSITION, OR ELBOW.
 - RETURN AIR FROM OFFICES VIA DOOR UNDERCUT. INSURE MINIMUM UNDERCUTS OF 1" AFF.

001 SECOND FLOOR VENTILATION PLAN
M01 NTS

3	ADDITIONAL THIRD FLOOR	2023/10/20
2	REVISED FOR SECOND FLOOR ONLY	2023/09/20
1	ISSUED FOR TENDER	2023/09/07
0	ISSUED FOR COMMENT	2023/08/18
REV	REVISED	DATE



ISSUED FOR TENDER
NOT FOR CONSTRUCTION

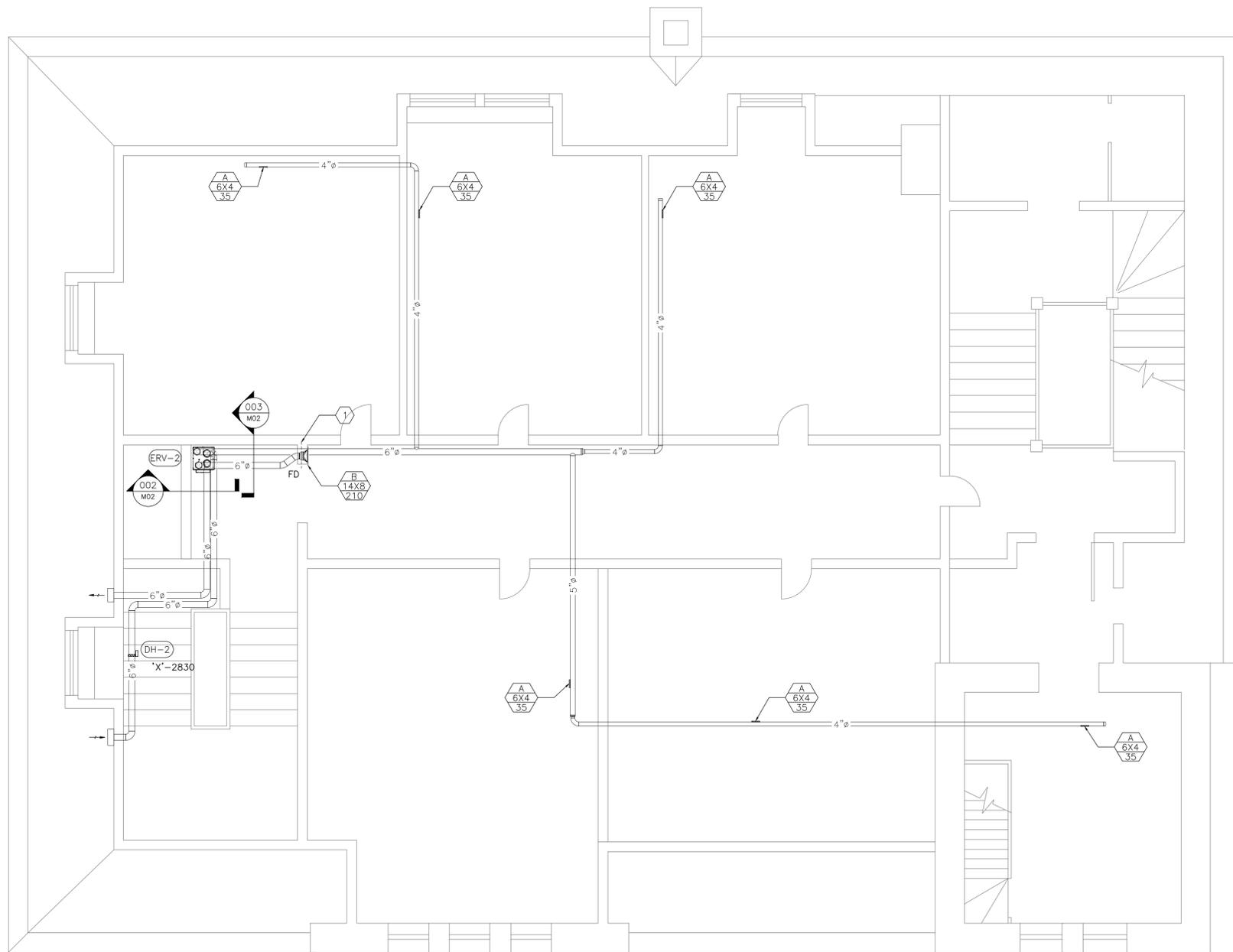
The Contractor shall check and verify all dimensions and report all errors and omissions to the Engineer (as applicable) for his/her written direction before proceeding with the Work.

A Detail No.
B Sheet No. when detailed



CLIENT
CITY OF KENORA
PROJECT
CITY HALL VENTILATION
LOCATION
1 MAIN ST. SOUTH
KENORA, ON
PROJECT TITLE
SECOND FLOOR VENTILATION PLAN

DATE AS NOTED	DATE	2022-08-31
DRAWN BY	DATE	2023-08-31
CHECKED BY	DATE	2023-08-31
APPROVED BY	DATE	2023-08-31
PROJECT NO.	23-167-M01	3
SHEET NO.		2 of 5



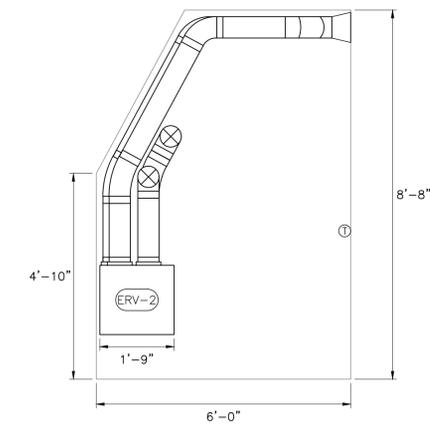
- DRAWING NOTES**
1. DUCTWORK TO BE EXPOSED SPIRAL, FINISH TO BE DETERMINED BY CLIENT.
 2. PROVIDE SUFFICIENT CLEARANCES FOR INTAKE AND EXHAUST WITH RESPECT TO OTHER BUILDING SERVICES.
 3. PROVIDE 24" ON EITHER SIDE OF DUCT HEATER BEFORE ANY TRANSITION, OR ELBOW.
 4. RETURN AIR FROM OFFICES VIA DOOR UNDERCUT. INSURE MINIMUM UNDERCUTS OF 1" AFF.

001 THIRD FLOOR VENTILATION PLAN
M02 NTS

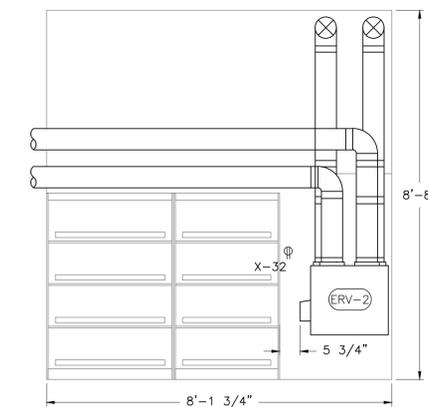
- GENERAL NOTES**
1. DRAWINGS ARE DIAGRAMMATIC ONLY. DO NOT SCALE.
 2. CONTRACTOR SHALL VERIFY ALL DIMENSIONS ON SITE PRIOR TO INSTALLATION AND REPORT ANY ERRORS AND/OR OMISSIONS TO THE ENGINEER.
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 6. CONTRACTOR TO OBTAIN AND PAY FOR ALL NECESSARY PERMITS TO ALLOW COMPLETION OF THE WORK.
 7. CONTRACTOR TO ARRANGE AND PAY FOR ALL NECESSARY INSPECTIONS REQUIRED BY THE AUTHORITIES HAVING JURISDICTION.
 8. DOCUMENT THE COMPLETE INSTALLATION WITH PHOTOGRAPHS. SUBMIT PHOTOGRAPHS TO THE OWNER AND ENGINEER AS THE PROJECT PROGRESSES.
 9. ANY CHANGES FROM THE DRAWINGS TO BE APPROVED BY ENGINEER BEFORE COMPLETION.
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 12. SUBMIT SHOP DRAWINGS TO ENGINEER FOR APPROVAL PRIOR TO ORDERING EQUIPMENT.
 13. THE APPROVAL OF SHOP DRAWINGS DOES NOT RELIEVE THE CONTRACTOR FROM THE RESPONSIBILITY OF THE FITTING OF EQUIPMENT AND COMPONENTS. ANY DISCREPANCIES IN THE SHOP DRAWINGS ARE THE RESPONSIBILITY OF THE CONTRACTOR.

LEGEND:

① PROVIDE FIRE DAMPER WHERE REQUIRED.



002 ELEVATION VIEW
M02 NTS



003 ELEVATION VIEW
M02 NTS

NO.	REVISION	DATE
0	ADDENDUM	2023/10/20
1	ISSUE	

DATE: 2023/10/20

SCALE: AS SHOWN

ORIENTATION: NORTH

ISSUED FOR TENDER
NOT FOR CONSTRUCTION

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A Detail No.
B Sheet No. when detailed



LBE group inc.

CITY OF KENORA
CITY HALL VENTILATION

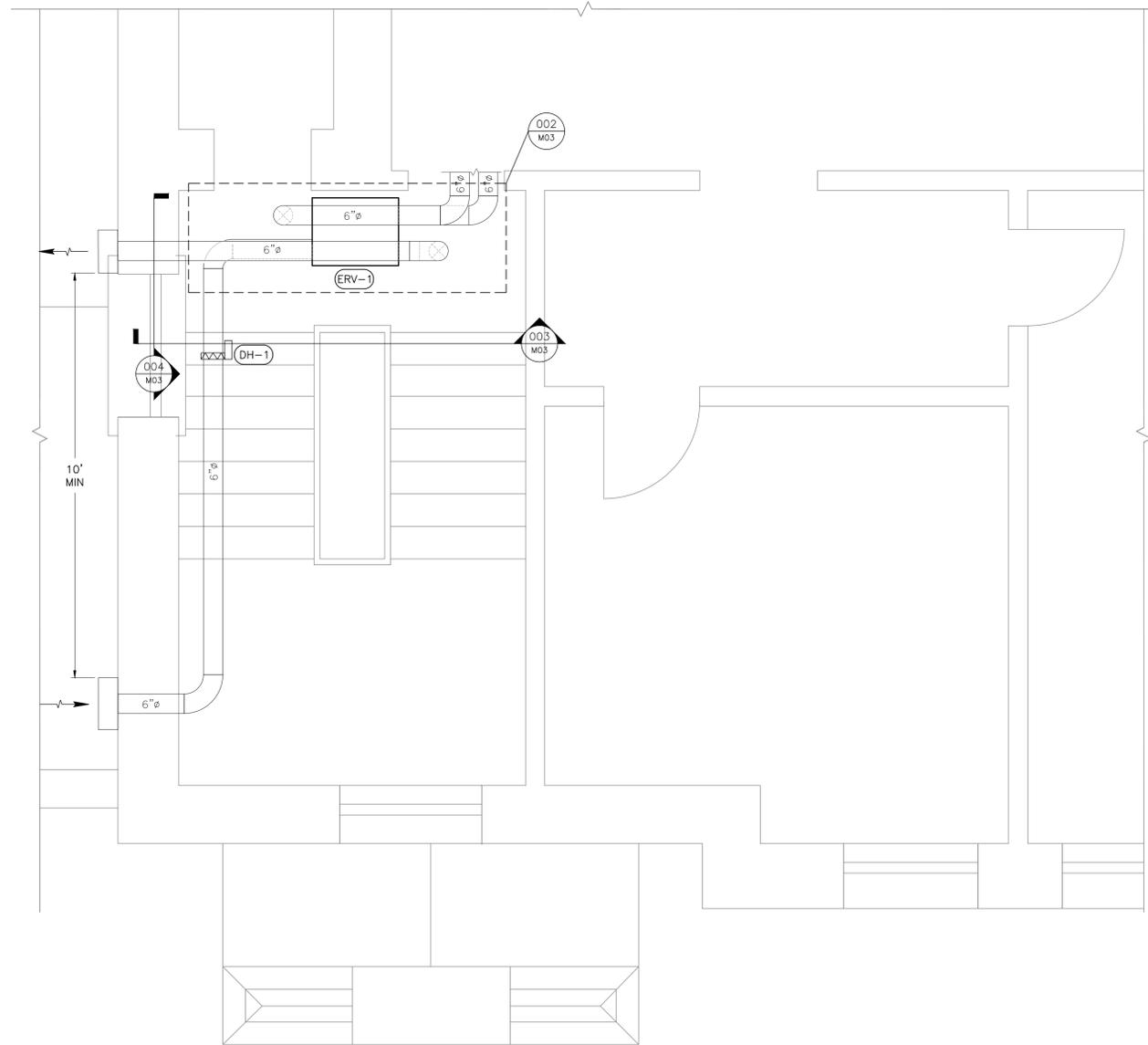
1 MAIN ST. SOUTH
KENORA, ON

THIRD FLOOR VENTILATION PLAN

DATE AS NOTED	DATE
2022-08-31	2022-08-31
DESIGN BY	DATE
DK	23-167-M02
CHECKED BY	0
DK	
APPROVED BY	

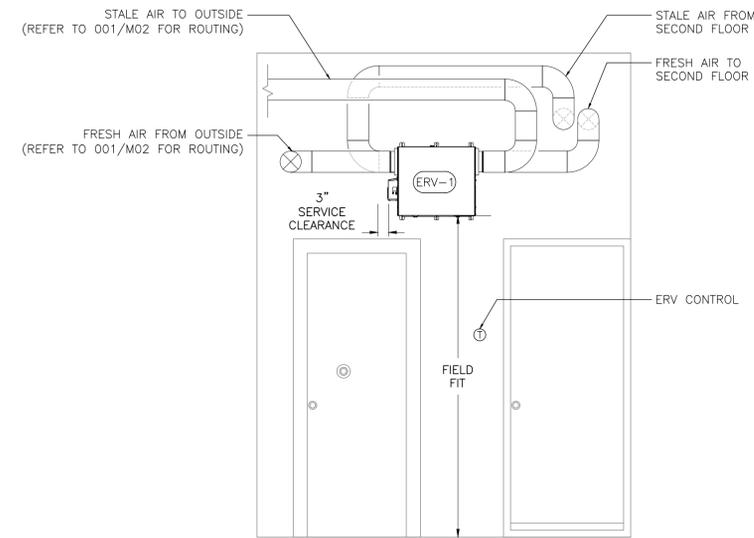
3 of 5

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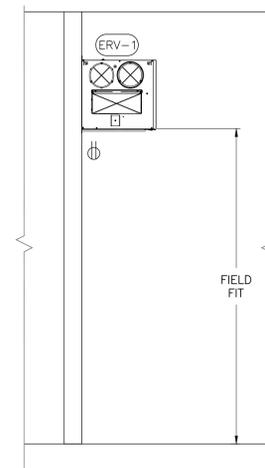
- DRAWING NOTES:**
- DUCTWORK TO BE EXPOSED SPIRAL, FINISH TO BE DETERMINED BY CLIENT.
 - PROVIDE SUFFICIENT CLEARANCES FOR INTAKE AND EXHAUST WITH RESPECT TO OTHER BUILDING SERVICES.
 - INTAKE AND EXHAUST VENTS, BLACK IN COLOUR, TO BE COMPLETE WITH BIRD SCREENS AND ANTI-GUST HOODS. EXHAUST TO ALSO INCLUDE BACKDRAFT DAMPER.

001 SUPPLY AND EXHAUST AIR PLAN
M03 NTS

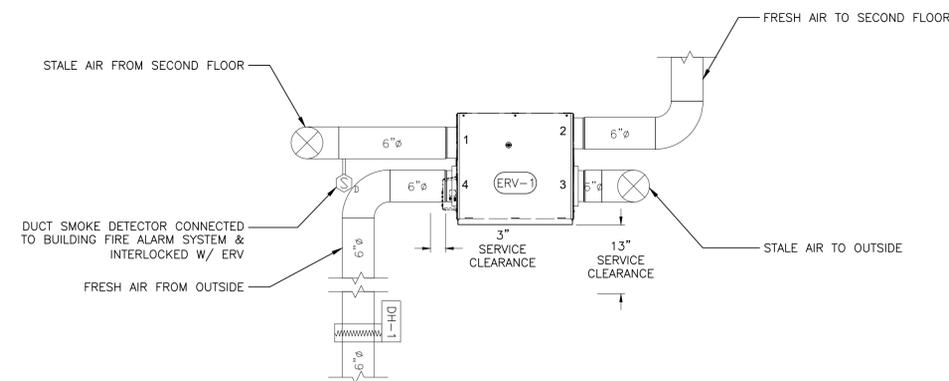


- DRAWING NOTES**
- INSTALL ERV TO MAXIMIZE AFF DIMENSIONS & PROVIDE 30" CLEARANCE IN FRONT OF UNIT FOR ROUTINE MAINTENANCE.
 - INSTALL CONDENSATE DRAIN LINES AND PUMP. PUMP TO NEAREST EXPOSED GRAVITY FED DRAIN. FIT DRAIN W/ WYE TAKE OFF TO ACCOMMODATE NEW CONNECTION. FINISH TO MATCH EXISTING. REFER TO 001/G01.
 - PROVIDE 24" ON EITHER SIDE OF DUCT HEATER BEFORE ANY TRANSITION, OR ELBOW.

003 ELEVATION VIEW
M03 NTS

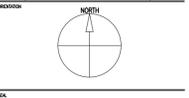


004 ELEVATION VIEW
M03 NTS



002 ERV-1 MAIN DUCTWORK PLAN (TOP VIEW)
M03 NTS

NO.	REVISION	DATE
3	ADDITIONAL THIRD FLOOR	2023/10/20
2	REVISED FOR SECOND FLOOR ONLY	2023/09/20
1	ISSUED FOR TENDER	2023/09/07
0	ISSUED FOR COMMENT	2023/08/18



ISSUED FOR TENDER
NOT FOR CONSTRUCTION

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Sheet No.	Total Sheets
A	3
B	2

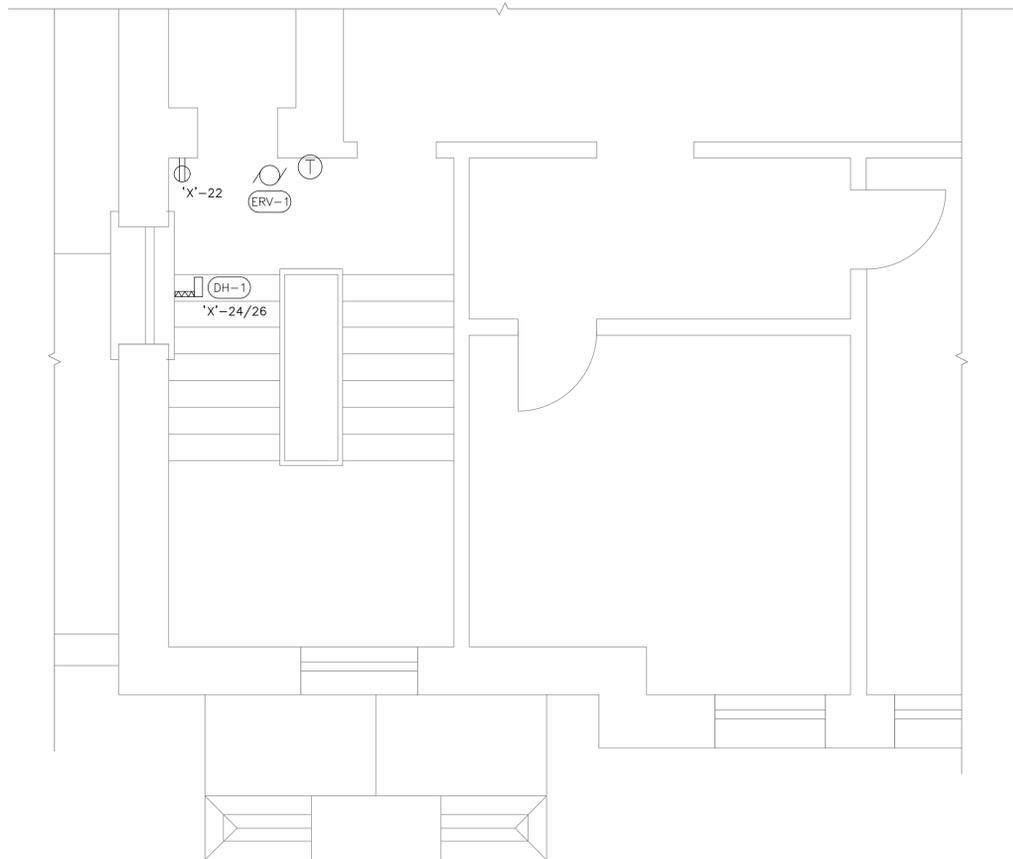


LBE group inc.

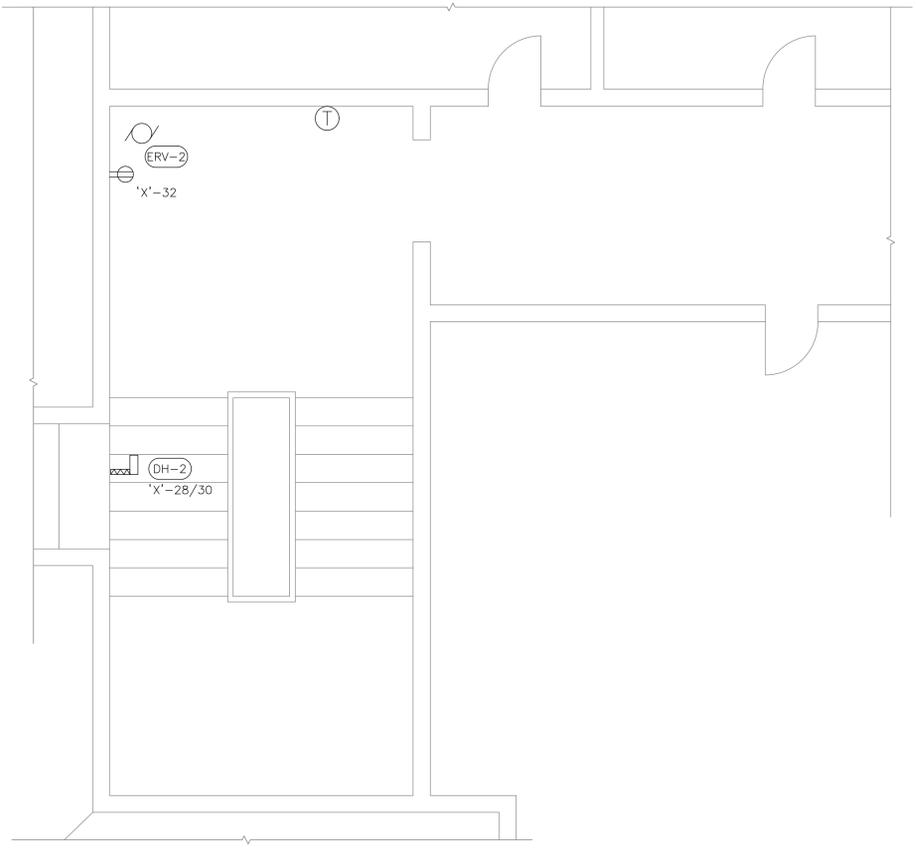
CITY OF KENORA
CITY HALL VENTILATION
1 MAIN ST. SOUTH
KENORA, ON
SECOND FLOOR SUPPLY AND EXHAUST PLAN

DATE AS NOTED	DATE
2022-08-31	2022-08-31

DATE	NO.	REV.
23-167-M03	3	



001 SECOND FLOOR ELECTRICAL PLAN
E01 NTS



002 THIRD FLOOR ELECTRICAL PLAN
E01 NTS

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PANELBOARD SCHEDULE - PANEL 'X' 2ND FLOOR OFFICE CLOSET

225A/208V/3Ø, 42 CCT MAIN BREAKER, WALL MOUNT

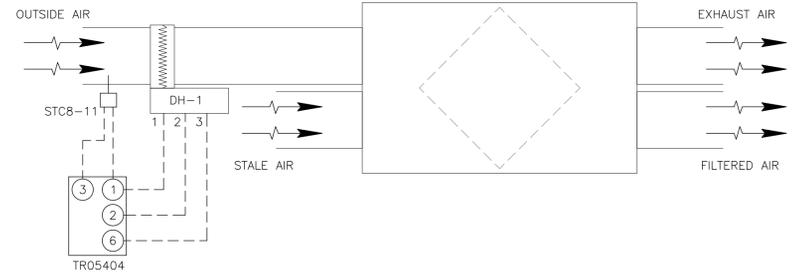
CCT. NO.	DESCRIPTION	CCT. BKR	A	B	C	CCT. BKR	DESCRIPTION	CCT. NO.
1	EXISTING OFFICE RECEPTACLES	15				15	EXISTING OFFICE RECEPTACLES	2
3	EXISTING OFFICE RECEPTACLES	15				15	EXISTING OFFICE RECEPTACLES	4
5	EXISTING OFFICE RECEPTACLES	15				15	EXISTING OFFICE RECEPTACLES	6
7	EXISTING OFFICE RECEPTACLES	20				20	EXISTING OFFICE HEATERS	8
9	EXISTING OFFICE RECEPTACLES	15						10
11	EXISTING OFFICE RECEPTACLES	15				20	EXISTING OFFICE HEATERS	12
13	EXISTING OFFICE RECEPTACLES	15				15	EXISTING OFFICE RECEPTACLES	14
15	EXISTING OFFICE HEATERS	20				15	EXISTING OFFICE HEATERS	16
17	EXISTING OFFICE HEATERS	20				15	EXISTING OFFICE HEATERS	18
19	EXISTING OFFICE HEATERS	20				15	EXISTING OFFICE HEATERS	20
21	EXISTING OFFICE HEATERS	20				15	ERV-1 RECEPTACLE	22
23	EXISTING OFFICE HEATERS	20				60	ERV PRE HEAT COIL (DH-1)	24
25	EXISTING OFFICE HEATERS	20				60	ERV PRE HEAT COIL (DH-2)	26
27	EXISTING OFFICE HEATERS	20				60	ERV PRE HEAT COIL (DH-2)	28
29	EXISTING OFFICE HEATERS	20				60	ERV PRE HEAT COIL (DH-2)	30
31	EXISTING OFFICE HEATERS	20				15	ERV-2 RECEPTACLE	32
33	EXISTING OFFICE RECEPTACLES	15				15		34
35	EXISTING OFFICE RECEPTACLES	15				20		36
37	EXISTING OFFICE RECEPTACLES	15				15		38
39	EXISTING OFFICE RECEPTACLES	15				20		40
41	EXISTING OFFICE RECEPTACLES	15				15		42

LEGEND

■ EXISTING

■ NEW

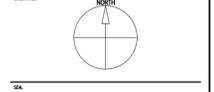
003 PANEL SCHEDULE
E01 NTS



- DRAWING NOTES**
- ELECTRICAL OUTLET TO BE WITHIN 6 FEET OF UNIT.
 - ALL ELECTRICAL WIRING SHALL BE INSTALLED IN SURFACE MOUNT EMT, FINISHED TO MATCH EXISTING.

004 VENTILATION P&ID
E01 NTS

NO.	REVISION	DATE
3	ADDITIONAL THIRD FLOOR	2023/10/30
2	REVISED FOR SECOND FLOOR ONLY	2023/09/20
1	ISSUED FOR TENDER	2023/09/07
0	ISSUED FOR COMMENT	2023/08/18



ISSUED FOR TENDER
NOT FOR CONSTRUCTION

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A Detail No.
B Sheet No. when detailed



CITY OF KENORA
CITY HALL VENTILATION
1 MAIN ST. SOUTH
KENORA, ON
ERV ELECTRICAL PLAN

DATE AS NOTED	DATE
2022-08-31	2022-08-31
23-167-E01	3
5	5

Lake of the Woods
KENORA



APPENDIX C
TENDER FORM
CITY OF KENORA

TENDER FORM

Tender Number: 125-001-23
Tender Title: City Hall Ventilation

We, _____
(Company)

of _____
(Business Address)

having examined the Tender Documents as issued by: the City of Kenora (the "City"), and having visited the site(s) of where the Work is required to be undertaken; hereby offer to enter into a Contract to perform the Work required by the Tender Documents for the Tender Sum as follows:

1. Construction Preparation & Submittal	\$ _____
2. Demolition	\$ _____
3. General Construction	\$ _____
4. Cash Allowance	\$ 3,200.00
5. Mechanical	\$ _____
6. Electrical	\$ _____
7. Commissioning & Testing, Adjusting, and Balancing (TAB)	\$ _____
8. Tender Sum (summation of Items 1-7 above)	
_____	\$ _____
<i>(Tender Sum written in words)</i>	<i>(Tender Sum in figures)</i>
9. Ontario Harmonized Sales Tax (HST = 13%)	\$ _____
10. Total including HST	
_____	\$ _____
<i>(Total incl. HST written in words)</i>	<i>(Total in figures)</i>

in Canadian funds, which price includes any specified cash and contingency allowances and the applicable taxes in force at this date and except as may be otherwise provided in the Tender Documents.

Declarations:

We hereby acknowledge and declare that:

- (a) we agree to perform the Work in compliance with the required completion schedule stated in the Contract;
- (b) no person, firm or corporation other than the undersigned has any interest in this Tender or in the proposed Contract for which this Tender is made;
- (c) we have received the following addenda during the tender process and have considered all information from the addenda in our tender and costs:

Addendum Number	Date Issued
_____	_____
_____	_____
_____	_____

- (d) we hereby acknowledge and confirm that the City has the right to accept any tender or to reject any or all tenders in accordance with the Instructions to Tenderers;
- (e) this Tender is open to acceptance for a period of sixty (60) days from the date of Tender Closing.

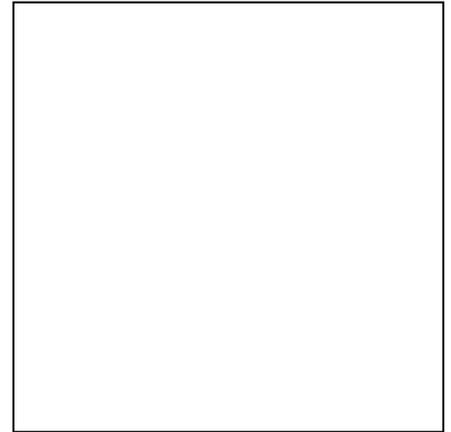
Signatures:

Signed, sealed and submitted for and on behalf of:

Company: _____
(Name)

(Street Address or Postal Box Number)

(City, Province & Postal Code)



*Corporate Seal
(required on all submissions
from limited companies)*

Contact for Tender

Name: _____

Phone: _____

Email: _____

Signature: _____

Name & Title: _____
(Please Print or Type)

Witness: _____

Name & Title: _____
(Please Print or Type)

Dated at _____ this _____ day of _____, 20__



**CITY OF KENORA
INVITATION TO TENDER**

ITT #125-001-23

**Appendix D
Proposed Service Agreement**

THIS AGREEMENT dated the 10th day of April, 2025 (the “**Agreement**”).

BETWEEN:

CITY OF KENORA
1 Main Street South
Kenora, ON P9N 3X2

[LEGAL NAME OF CONTRACTOR]
[Street Address]
[Community, Province & Postal Code]

Telephone: 807-467-2181
Email: clock@kenora.ca

Telephone: [Contractor Rep Phone Number]
Email: [Contractor Rep Email]

Attention: Chris Lock
Facilities Manager (Acting)

Attention: [Contractor Representative]
[Contractor Rep Title]

(the “**City**”)

(the “**Contractor**”)

SERVICES AGREEMENT

NOW THEREFORE this Agreement witnesses that in consideration of the premises and the covenants herein contained, the City and the Contractor covenant and agree each with the other as follows:

Services. The Contractor shall provide the following services (the “**Services**”) upon the terms and conditions contained within this Agreement and in the attached Schedule.

- (a) **Project Number:** 125-001-23
- (b) **Project Title:** City Hall Ventilation
- (c) **Commencement Date:** April 10, 2025
- (d) **Completion Date:** July 18, 2025
- (e) **Description of Services:**

The supply and installation of two (2) energy recovery ventilators (ERV) to service the second and third floors of the City Hall building located at 1 Main Street South in Kenora, Ontario as more particularly set out in ITT #125-001-23 City Hall Ventilation including:

- Invitation to Tender
- Instructions to Tenderers
- Appendix A – Specifications
- Appendix B – Drawings

- (f) **Payment** – The City shall pay the Contractor the following amounts for the Contractor’s delivery of the Services as follows, plus any applicable HST thereon (the “**Payment**”):
[insert value of contract in written word (and figures)]

CITY OF KENORA

[NAME OF CONTRACTOR]

Per: _____

Per: _____

Per: _____

Per: _____

GENERAL TERMS & CONDITIONS

ARTICLE I – SERVICES

1.01 Performance of Work. All work done in performing the Services under this Agreement shall:

- (a) commence the Services on the commencement date and complete the Services on the completion date
- (b) be performed by the Contractor, exercising the degree of care, skill and diligence normally used in performing services of a similar nature to those Services to be provided under this Agreement, and otherwise in accordance with the provisions of this Agreement .
- (c) be supervised by competent and qualified personnel;
- (d) be performed in accordance with the City's directions and to the City's satisfaction;
- (e) comply with the requirements of this Agreement; and
- (f) be documented according to the City's requirements.

All work done in performance of the Services shall be subject to such review as the City considers advisable or appropriate. Any work not meeting the requirements of this Agreement may be rejected by the City and shall require appropriate correction by the Contractor. No such review by the City shall relieve the Contractor from the performance of its obligations hereunder.

1.02 Warranty of Contractor. The Contractor represents and warrants to the City:

- (a) that it has sufficient skill, knowledge, expertise and resources, including qualified and competent personnel, to perform and provide the Services in accordance with the provisions of this Agreement;
- (b) that the entering into of this Agreement and the performance of the Services hereunder shall not cause the Contractor to be in breach of any obligation of confidentiality which the Contractor may owe to any third party, or otherwise cause the Contractor to be in breach of any agreement or undertaking with any third party.

1.03 Permits and Licenses. The Contractor shall obtain and pay for all necessary permits or licenses required in connection with providing or performing the Services.

1.04 Provision of Supplies: The Contractor shall be responsible for the provision of all supplies and equipment required to perform the Services.

ARTICLE II- PERSONNEL

2.01 No Substitution. If specific personnel are designated by this Agreement to perform the Services or any part thereof, the Contractor shall not substitute other personnel for those designated without the prior written consent of the City. If any such personnel shall become no longer available for any reason, the Contractor shall supply a similarly experienced and skilled individual as soon as practicable subject to approval of such individual by the City.

2.02 No Subcontractors. The Contractor shall not engage or retain any agent, subcontractor or any other third party for purposes of providing the Services hereunder in whole or in part without the prior written consent of the City (which may be arbitrarily withheld) and on terms and conditions satisfactory the City in its sole discretion. The use of any agents, subcontractor or any other third parties by the Contractor shall in no way relieve the Contractor from its responsibility and obligation to provide the Services in accordance with the provisions of this

Agreement.

2.03 Removal of Personnel. The Contractor shall forthwith remove from the City's premises and from performance of the Services any officer, personnel, agent or subcontractor who is for any reason unsatisfactory to the City including, without limitation, any such person who:

- (a) is charged with and convicted of a criminal offence;
 - (b) fails, in the opinion of the City or in the opinion of the Contractor, to carry out the work required in the performance of the Services in a satisfactory manner including, without limitation, causing any delays in the performance of the Services; or
 - (c) removes any property not belonging to the Contractor, its officers or personnel or any agent or subcontractor, as the case may be, from the City premises without the prior written consent of the City,
- Any costs or expenses associated with removal of any such officer, personnel, agent or subcontractor shall be the responsibility of the Contractor, including any necessary training costs or expenses associated with replacement persons, as determined by the City.

2.04 Compliance with Policies. The Contractor shall ensure that its personnel and agents and subcontractors, when using the City's premises, comply with all security, safety, emergency and access policies, procedures or regulations in effect from time to time on such premises.

2.05 Safety. The Contractor shall be responsible for the safety of its personnel and any agents or subcontractors, and all property of the Contractor or its personnel, agents or subcontractors while on the City premises. The City shall not be responsible for any personal property, tools or equipment that the Contractor or its personnel, agents or subcontractors may bring onto the City premises.

ARTICLE III- PAYMENT

3.01 Invoice. On the first day of each calendar month following the Commencement Date, an invoice shall be submitted to the City by the Contractor in respect of Services provided during the immediately preceding month. Each invoice shall, in respect of such month:

- (a) refer to the purchase order number;
 - (b) identify as separate items any tax separately chargeable to the City (in addition to the Payments) but only as specified and provided for in Special Terms & Conditions; and
 - (c) identify the applicable monthly rate and a description of the Services performed in that regard.
- (d) include a 10% holdback in accordance with the Ontario Construction Act, R.S.O. 1990, c. C.30.

3.02 Payment. Subject to the verification of each invoice by the City and all other terms and conditions of the Agreement (including, without limitation, the Services being satisfactory to the City), the City shall pay the Contractor the amount of each invoice within thirty (30) days of receipt of same.

3.03 Excess Payments. The City shall not pay any amount exceeding the amounts contemplated within the Special Terms & Conditions, or make any payment for any work done by the Contractor after the Completion Date, unless prior written authorization has been obtained by the Contractor from the City.

3.04 Taxes. All customs duties, excise taxes (including HST), federal, provincial and municipal taxes and other duties, taxes or charges of a similar nature, and all travel and other expenses of the Contractor are included within the Payments, unless expressly stated otherwise in the Special Terms & Conditions.

3.05 No Payment for Costs, Expenses or Damages. The City shall not be required to make any payment to the Contractor under this Agreement for any costs, expenses, losses or damages suffered or incurred:

- (a) in performing any work reasonably incidental to the performance of the Services;
- (b) as a result of any delays in performing the Services from any cause whatsoever; or
- (c) to remedy errors or omissions for which, in the reasonable opinion of the City, the Contractor is responsible.

3.06 Performance upon Failure of Contractor. Upon failure of the Contractor (including any of its subcontractors) to perform any of its obligations under this Agreement the City may, but shall not be obligated to perform or engage a third party to perform any of those obligations without prejudice to any other remedy or right it may have and the Contractor, immediately upon written demand, shall pay an amount equal to all costs and expenses incurred by the City in association therewith, plus interest on that amount from the date the cost or expense is incurred until it is paid at the rate of 1.5% per month (19.6% per annum). The City may, in its discretion, deduct any such amount, together with interest, from any payment then or thereafter due by the City to the Contractor, provided that such action shall not be deemed a waiver of any action that the City may pursue to collect any costs or expenses incurred herewith that exceed the amounts owed to the Contractor.

3.07 Records. The Contractor shall keep and maintain, at its principal place of business in Ontario, or at such other location as may be agreed by the City, adequate and complete records from which any fees, costs, charges or other amounts payable by the City to the Contractor may be readily and accurately determined and verified for each calendar month during the Term of this Agreement. The Contractor shall take such steps as are necessary to maintain such records in accordance with generally accepted accounting practices in Canada.

3.08 Access to Records. Such records shall be open to inspection by the City, or its agents, during the Contractor's regular business hours. The Contractor shall be required to retain such records for a period of seven (7) years following expiration or termination of this Agreement.

3.09 Acceptance is Not Waiver. The acceptance by the City, from time to time, of any statement of fees, costs, charges or other amounts delivered by the Contractor or any payment of such amounts based thereon shall not be deemed to be a waiver by the City of any of the Contractor's obligations or the City's rights under this Agreement. However, if the City has not caused an audit or inspection of the Contractor's accounting records or Services for any calendar month to commence within two (2) years of the last day of any such calendar month, the City and the Contractor agree that the accounting records and all such

amounts paid for that calendar month shall have been deemed to have been made accurately and in full compliance with the provisions of this Agreement.

ARTICLE IV – TERMINATION

4.01 Termination for Convenience. This Agreement may be terminated at any time, with or without cause, by either party providing written notice to the other party at least thirty (30) days prior to the termination date specified in the notice. Alternatively, the City may terminate this Agreement upon shorter notice, subject to payment of normally anticipated Payments under this Agreement during the required notice period set forth above

4.02 Termination for Default. Without restricting the provisions respecting termination for convenience, the City may forthwith terminate this Agreement by providing written notice of termination to the Contractor, without prejudice to any other right or remedy the City may have, if the Contractor at any time:

- (a) fails to comply with any of the terms or conditions of this Agreement; or
- (b) is adjudged or otherwise becomes bankrupt or insolvent, makes an assignment for the benefit of creditors, if a receiver is appointed for the property of the Contractor, or if the Contractor ceases to carry on business in the normal course;

such termination to be effective on the date such notice of termination is received.

4.03 Payment upon Termination. The City shall, in the event of termination of this Agreement, other than pursuant to Section 4.01(a) of this Schedule, pay to the Contractor all amounts for completed work due to the Contractor in accordance with this Agreement, less any amounts which may be owing by the Contractor to the City as provided for hereunder. The City shall have no further liability of any nature whatsoever to the Contractor for any losses or damages suffered or sustained, either directly or indirectly, by the Contractor including, without limitation, loss of profit, as a result of the termination of this Agreement.

4.04 Survival of Obligations. Notwithstanding the expiration or termination of this Agreement for any cause, the provisions of this Agreement regarding payment obligations, indemnities, confidentiality obligations and proprietary rights, and those provisions which are expressly or impliedly intended to survive, shall survive any such expiration or termination and shall remain in force.

ARTICLE V - INDEMNITY AND INSURANCE

5.01 Indemnity. Notwithstanding any other provision of this Agreement to the contrary, the Contractor shall:

- (a) be liable to the City, its directors, officials, insurers, servants, agents, personnel, successors, assigns and representatives of any kind for any and all losses, costs, fees, fines, damages and expenses (including, but not limited to, costs on a solicitor and his own client full indemnity basis) which the City or such persons may pay or incur;
- (b) indemnify and hold harmless the City, its councillors, officials, insurers, servants, agents, personnel,

successors, assigns and representatives of any kind from and against any and all liabilities, claims, suits or actions which may be brought or made against the City or such persons; as a result of or in connection with:

- (c) the performance of the Services; or
- (d) any breach, violation or non-performance of any covenant, condition or agreement in this Agreement set forth and contained on the part of the Contractor to be fulfilled, kept, observed or performed; or
- (e) any breach of confidentiality on the part of the Contractor or its officers or personnel, or any agent or subcontractor or their respective personnel; or
- (f) any damage to property (including loss of use thereof) or injury to person or persons, including death resulting at any time therefrom, arising out of or in consequence of the performance of the Services.

5.02 Insurance. The Contractor shall maintain, in full force and effect with insurers licensed in the Province of Ontario, the following insurance:

- (a) comprehensive general liability insurance in respect to the Services and operations of the Contractor for bodily injury and property damage with policy limits of not less than Five Million (\$5,000,000.00) Dollars per occurrence, with the City named as an additional insured with respect to the performance of the Services. Such policy shall include blanket contractual coverage and a cross liability clause, and shall provide for a minimum of thirty (30) days prior written notice to the City upon any cancellation or material change in coverage;
- (b) all risk insurance on any personal property, tools or equipment to be used in performing or providing the Services, to full replacement value;
- (c) standard automobile insurance providing coverage of at least Two Million (\$2,000,000.00) Dollars inclusive for bodily injury and property damage (if the Contractor is required to use a vehicle in the performance of the Services); and
- (d) coverage for such other risks against which a prudent contractor providing similar services might reasonably be expected to insure in respect of which coverage is available, as well as any other insurance of such type and amount and increased minimum insurance limits as may reasonably be required by the City.

5.03 Placement of Insurance. The above insurance shall be in a form and with insurers acceptable to the City.

5.04 Waiver of Subrogation. All policies of insurance required under this Agreement will, to the extent generally available and as applicable, provide for a waiver of subrogation.

ARTICLE VI – General

6.01 Assignment. The Contractor shall not assign this Agreement or any portion thereof without the prior written consent of the City, which consent may be arbitrarily withheld. Upon any transfer or assignment by the City of this Agreement, the City shall be released from its obligations hereunder. The City may assign this Agreement in whole or in part to any person

in the City's sole discretion without notice to the Contractor.

6.02 Waiver. The failure of a party to insist in any one or more cases upon the strict performance of any of the covenants of this Agreement or to exercise any option herein contained shall not be construed as a waiver or relinquishment for the future of such covenant or option and no waiver by the City of any provision of this Agreement shall be deemed to have been made unless expressed in writing and signed by the City.

6.03 Statutory Reference. Any reference to a statute shall include and shall be deemed to be a reference to such statute and to the regulations made pursuant thereto and promulgated thereunder with all amendments made thereto and in force from time to time and any final judicial decisions interpreting the same, and to any statute or regulation that may be passed which has the effect of supplementing or superseding the statute so referred to or the regulations made pursuant thereto.

6.04 Enurement. This Agreement shall enure to the benefit of and be binding upon the parties hereto and their respective successors, assigns or approved assigns, as the case may be.

6.05 No Agency. Nothing in this Agreement, nor in any acts of the City and the Contractor pursuant to this Agreement, shall be construed, implied or deemed to create an agency, partnership, joint venture or employer and employee relationship between the City and the Contractor, and neither party has the authority to bind the other to any obligation of any kind.

6.06 Whole Agreement. The provisions of this Agreement constitutes the entire agreement between the parties and supersedes any prior agreements, letters of intent or understanding, whether written or oral, between the parties with respect to the matters contemplated herein. No terms, conditions, warranties, promises or undertakings of any nature whatsoever, express or implied, exist between the parties with respect to this Agreement except as herein set forth. This Agreement may be amended, changed or modified only by further written agreement between the parties.

6.07 Partial Invalidity. If any term, condition or provision of this Agreement or the application thereof to any person or circumstance shall to any extent be invalid or unenforceable, the remainder of this Agreement or the application of such term, condition or provision to persons or circumstances other than those as to which it is held invalid or unenforceable, shall not be affected thereby and each term, condition or provision shall be separately valid and enforceable to the fullest extent permitted by law.

6.08 Time of Essence. Time shall be of the essence of this Agreement.

6.09 Expiration of Time. In any case where the time limited by this Agreement expires on a Saturday, Sunday or legal holiday in Ontario, the time limited shall be extended to and shall include the next succeeding day which is not a Saturday, Sunday or legal holiday in Ontario.

6.10 Governing Law. This Agreement shall be governed by the laws in force in the Province of Ontario and the courts of Province of Ontario shall have exclusive jurisdiction with respect to any dispute, matter or thing arising herefrom.