



# BRAMPTON

## Flower City

The Corporation of the City of Brampton

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Cover Page

## BID DOCUMENT

BID CALL NO. T2025-141

**MECHANICAL EQUIPMENT & POWER DISTRIBUTOR REPLACEMENT AT JIM  
ARCHDEKIN RECREATION CENTRE**

**CLOSING DATE: TUESDAY MAY 06, 2025**

**CLOSING TIME: NOT LATER THAN 2:00:00 o'clock p.m. LOCAL TIME IN  
BRAMPTON, ONTARIO**

**BIDS RECEIVED AFTER THE CLOSING DATE AND TIME WILL BE REJECTED.**

A non-mandatory pre-bid meeting is scheduled for Wednesday April 23, 2025, at Jim Archdekin Recreation Center, 292 Conestoga Drive, Brampton, Ontario L6Z 3M1 at 11:00 a.m. Bidders are to gather at front door.

Questions related to the Bid Call are required to be submitted to the Purchasing Representative through the Bidding System using the Submit Question button.

**Purchasing Representative**

Naveed Ahmed Butt  
Senior Buyer  
Phone: 905-874-3531  
Email: Naveed.Ahmedbutt@brampton.ca

**ELECTRONIC BIDS ONLY**

**Land Acknowledgement**

We acknowledge that the Corporation of The City of Brampton operates on territories and lands covered by many treaties including the Treaty Territory of the Mississaugas of the Credit First Nation, and before them, the traditional territory of the Haudenosaunee and Wendat.

We also acknowledge the other Indigenous, Metis, and Inuit peoples as well as settlers from around the globe that now call Brampton their home. We are all honoured to live, learn, work, and take care of this land.

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## CHECKLIST FOR SUBMITTING A BID

### Note

This checklist is provided solely for the convenience of Bidders and is part of the Bid Document. It will not be considered in evaluating Bids, but is intended to assist Bidders to submit compliant Bids. Bidders should be aware the checklist may not include all bidding requirements. Please review the requirements of the Bid Document and the items below for compliance before submitting your Bid.

- ☐ Bid Document read and understood, and any questions have been submitted to the Purchasing Representative and answered.
- ☐ Bid is completed in the Bidder's full legal name.
- ☐ Bid Deposit submitted with the Bid, if required (refer to Section 13 of Instructions to Bidders).
- ☐ Mandatory pre-bid meeting attended, if required by the Bid Document.
- ☐ All addenda received and acknowledged.
- ☐ Bid received by the Owner's Bidding System on or before the Closing Time on the Closing Date.
- ☐ Bid conforms to all other requirements of the Bid Document.



## **INTERPRETATION - Glossary**

In the Bid Document,

“Addenda” or “Addendum” means a document containing additional information or changes to the requirements of the Bid Document issued by the Owner which is part of the Bid Document;

“Bid” means an offer to supply goods, services or construction in a Bid Call;

“Bid Call” means an invitation from the Owner to Vendors to submit a Bid;

“Bid Call Process” means the process in this Bid Call which begins when the Bid Call is advertised or solicited and ends when (i) the Owner signs an agreement and/or issues a purchase order with a Bidder, or (ii) when the Bid Call is cancelled;

“Bid Closing” means the Closing Date and Closing Time set forth in the Instructions to Bidders;

“Bid Deposit” means the deposit specified in the Instructions to Bidders;

“Bid Document” means the documents listed in the Index, issued by the Owner to the Bidder under the Bid Call, and includes any Addenda;

“Bid Validity Period” means the period during which Bids are valid, irrevocable and open for acceptance by the Owner without adjustment;

“Bidder” means any proponent, respondent or other person or entity who has obtained official procurement documents for the purpose of submitting, or who has submitted, a Bid in response to the Bid Call;

“Bidding System” means the electronic system used by the Owner for its public tenders, bids and request for proposals at the following website <https://brampton.bidsandtenders.ca>, which Bidding System is required to be used for all dissemination of information by or on behalf of the Owner and all submissions from Bidders for this Bid Call.

“City” means The Corporation of the City of Brampton.

“Closing Date” means the date on which Bid Closing takes place;

“Closing Time” means the time at which Bid Closing takes place;

“Constituting Documents” means the articles of incorporation, articles of amalgamation or articles of continuation, or similar government issued documentation, setting out in the complete and current legal name of the Bidder.

“Contract” means a formal legal agreement between two or more parties with binding legal and moral implications whereby goods and/or services are exchanged for money or other consideration;

“Contract Administrator” means The Corporation of the City of Brampton staff member assigned to the Contract and responsible for the administration of the Contract.

“Contract Documents” means the documents making up the Contract;

“Employment Standards Act” means the *Employment Standards Act, 2000, S.O. 2000, c.41*.

“Fair Wage Policy” means the City’s Fair Wage Policy and Fair Wage Schedule, as amended from time to time (available on the [City of Brampton’s website](#)) ;

“Fair Wage Statutory Declaration” means the City’s formal legal document titled Fair Wage Statutory Declaration which, shall be submitted by Vendors to confirm their compliance with the Fair Wage policy at project completion or when requested by the City.

“Government Contract Wages Act” means the *Government Contract Wages Act, 2018, S.O. 2018, Chapter 9*.

“Non-Compliance” means a Vendor that fails to meet the requirements and terms set out in this Bid Call including the terms of the City’s Fair Wage Policy and Fair Wage Schedule in any of the following conditions:

- (a) If the Vendor does not fulfil its responsibilities under the Fair Wage policy;
- (b) If the Vendor has been found in violation of the Fair Wage policy.

“OHSA” means the Ontario *Occupational Health and Safety Act, R.S.O. 1990, c. O.1*.

“Purchasing Representative” means the person named as the Purchasing Representative on the Bid Document Cover Page;

“Irregularity” means a variation in a Bid from the requirements of the Bid Call;

“Material Irregularity” means an Irregularity substantial and material to an award, which could give a Bidder an unfair advantage over others who have submitted a Bid;

“Owner” means The Corporation of the City of Brampton;

“Personal Information” means any information about an identifiable individual which is required to be protected pursuant to MFIPPA or any other laws (including regulations and common law) pertaining to the protection of personal, healthcare or insurance information;

“Plan Taker” means a Bidder who has registered in the Bidding System to participate in the Bid Call Process;

“Project” means the project described in paragraph 2.1 of this Part A Information for Bidders, Instructions to Bidders.

“Purchasing Representative” means the person named as the Purchasing Representative on the Bid Document Cover Page;

“Successful Bidder” means the Bidder to whom the Contract is awarded;

“Vendor” means a Vendor as defined in the Purchasing By-law 19-2018, or one of a restricted group of Vendors under the terms of the Bid Call;

“WSIA” means *Workplace Safety and Insurance Act, 1997, S.O. 1997, c. 16, Sched. A.*

“WSIB” means Workplace Safety and Insurance Board.

Except as the context may otherwise require, the words “City” and “City of Brampton” used in the Bid Document mean The Corporation of the City of Brampton.

Except as otherwise defined in this Bid Document, the capitalized words used in the Bid Document shall be given the meaning ascribed to them in the City’s Purchasing By-law 19-2018.

## 1. INTRODUCTION

- 1.1. The City of Brampton's objective is to conduct a fair, open and transparent Bid Call Process providing for equitable treatment of Bidders, while maintaining the highest standards of integrity in the process.
- 1.2. The Bid Call shall be governed by the City's Purchasing By-law 19-2018 and related policies and procedures which are available on the City's website at [www.brampton.ca](http://www.brampton.ca).
- 1.3. This procurement is subject to the *Canadian Free Trade Agreement (CFTA)*, the *Comprehensive Economic and Trade Agreement (CETA)* and the *Ontario-Quebec Trade and Cooperation Agreement (OQTCA)*.

## 2. PROJECT

- 2.1. The Bid Call is for a Project consisting of the work and requirements as described in this Bid Document.

## 3. INVITATION TO BID

- 3.1. The invitation to bid is made by The Corporation of the City of Brampton, 2 Wellington Street West, Brampton, Ontario, L6Y 4R2.

## 4. SUBMISSION AND RECEIPT OF BIDS

- 4.1. The Corporation of the City of Brampton (Owner) will **only** accept **electronic Bids** submitted through the Owner's Bidding System. Bids submitted and/or received by any other method will be rejected, unless the Owner has instructed otherwise by published Addenda in respect of a Bid. Bids submitted in any other manner will be disqualified. Hard copy Bids shall **NOT** be accepted.
- 4.2. Bids must be submitted electronically through the Owner's Bidding System, and received by the Owner not later than 2:00:00 p.m., local time in Brampton, Ontario as established by the Research Council of Canada, on the specified Closing Date of:

**TUESDAY MAY 06, 2025**

- 4.3. The Closing Date and Time shall be determined by the Owner's Bidding System website clock.
- 4.4. Late Bids will not be accepted by the Owner's Bidding System.
- 4.5. The receipt of Bids can be delayed due to factors such as "internet traffic", file transfer size, transmission speed, and any other causes for delay. Bidders should allow sufficient time to upload their Bid, including any attachments.

- 4.6. A Bid will only be considered to have been submitted once it has been **RECEIVED** by the Owner in its Bidding System, regardless of when the Bid was submitted by the Bidder.
- 4.7. Bidders will be sent a confirmation email from the Owner's Bidding System to the email address provided by the Bidder when it registers as a Plan Taker in the Bidding System for the Bid Call advising that their Bid was submitted successfully. Bidders should **not** consider their Bid to have been submitted until they have received the confirmation email.
- 4.8. Bidders are solely responsible for the delivery of their Bids in the manner and by the date and time prescribed. Each Bidder is responsible for the actual delivery of its Bid prior to the Closing Time on the Closing Date.
- 4.9. The Owner is not responsible for any incomplete or misdirected Bids due to electronic technical problems arising out of the Bidder's use of the Owner's Bidding System.

## 5. VENDOR ACCOUNT

- 5.1. This Bid Document is available only through the Owner's Bidding System at <https://brampton.bidsandtenders.ca>. A Bidder who has not obtained this Bid Document through the Owner's Bidding System may be ineligible for further consideration unless a third party has requested this Bid Document from the Owner's Bidding System on the Bidder's behalf and that Bidder has identified the third party in the Bid as being authorized to do so.
- 5.2. All Bidders must have a Bidding System Vendor account and be registered as a Plan Taker for this Bid Call opportunity, to enable the Bidder to download the Bid Document, to receive Addenda email notifications, download Addenda and to submit their Bid electronically through the Bidding System.
- 5.3. To ensure receipt of the latest information and updates via email regarding this Bid or if a Bidder has obtained this Bid Document from a third party, the onus is on the Bidder to create a Bidding System Vendor account and register as a Plan Taker for the Bid Call at <https://brampton.bidsandtenders.ca>.

## 6. FAIR WAGE POLICY:

- 6.1. To ensure that Vendors with whom the City conducts business are meeting the statutory obligations set in the *Employment Standards Act*, the *Labour Relations Act*, the *Occupational Health and Safety Act*, *Government Contract Wages Act* and other applicable law ("Applicable Law"), the Owner has adopted the Fair Wage Policy.
- 6.2. The requirements of the Applicable Law and the City's Fair Wage Policy must be adhered to by all Vendors who are employers with employees within the meaning of the *Employment Standards Act*, and who have entered a contract with the Owner where

the value of the Contract is five hundred thousand dollars (\$500,000) or greater, including optional renewals. For clarity, the Fair Wage Policy applies to the construction, maintenance and repairs which include but may not be limited to the following:

- a) Buildings, including their electrical, plumbing, heating and cooling systems;
- b) Roads, sidewalks, bridges and related structures;
- c) Sewers and watermains and other utilities installations; and
- d) Transit stops and transit rights-of-way.

6.3. All Vendors agree to comply in all respects with the Fair Wage Policy and shall be fully responsible for ensuring that all its subcontractors fully comply with the Fair Wage Policy and Applicable Law.

6.4. All employees employed by the Vendors and its subcontractors in connection with the Contract shall be paid or provided with wages and benefits in accordance with the Fair Wage Policy in effect on the date of contract award.

6.5. The Vendor agrees to submit all mandatory forms including the Fair Wage Statutory Declaration and the Fair Wage Mandatory Requirements Attestation. The City reserves the right to not release any holdback on a Construction contract until such Contractor's Fair Wage Statutory Declaration is received by the Contract Administrator. The Fair Wage Statutory Declaration can be downloaded from the City's [Fair Wage Web page](#) and the Fair Wage Mandatory Requirements Attestation will be provided with the award letter.

6.6. Consequences of non-compliance. Upon determining that a Vendor and/or its subcontractor is non-compliant with the Fair Wage Policy and Fair Wage Schedule, or both, the Director of Purchasing or Purchasing Agent:

6.6.1 May withhold making payment, progress payments (as appropriate) or release holdback in an amount which is equal to the shortfall in wages or benefits owed by the Vendor until such time as the Vendor or its subcontractor complies. The Owner may take any other remedies that are otherwise available at law or in equity; and

6.6.2 Shall impose upon the Vendor a minimum cost of \$5,000 (excluding taxes) for the Owner's investigation, audit, or other action as deemed necessary by the City, and may deduct such costs from any payment or payments (as appropriate) owed by the City or take any other remedies that are otherwise available at law or in equity. In addition, the Vendor shall be responsible for all the City's costs beyond the minimum cost of \$5,000 (excluding taxes), which will be payable immediately upon request. Examples of costs may

include, but are not limited to, legal, auditor and other investigation costs.

- 6.7. Where a Vendor or its subcontractor has been determined to be noncompliant with the Fair Wage Policy and Fair Wage Schedule, the Vendor shall submit an audited statement proving that payments of outstanding wages have been made to the affected employees.
- 6.8. The Director of Purchasing or Purchasing Agent, after consulting with the Fair Wage Committee, may recommend to City Council that a Vendor or its subcontractor that has been found non-compliant on two occasions within a three-year period be barred for one or three years from bidding on City work or performing City work as a Vendor or its sub-contractor in accordance with the Vendor Suspension Administrative Directive.
- 6.9. The City reserves the right to treat a first-time offender as a repeat offender.
- 6.10 The City reserves the right to request that the Vendor submits an audited statement which verifies the Vendor or its subcontractor's compliance with the Fair Wage Policy and Schedules on the next three (3) City Contracts.

## **7. BID DOCUMENT**

- 7.1. (a) The information provided in this Bid Document or otherwise by the Owner in any connection with this Bid Call, is provided on an "as is" basis, with no representations, warranties or covenants, implied or express, concerning the nature or the quality of such information, including without limitation its completeness, accuracy, currency, reliability, authenticity or the Owner's rights to disclose any such information.  
  
(b) All information provided in this Bid Document is based on the Owner's knowledge and intent as of the date this Bid Call is issued and may change during the course of the Bid Call. The Bidder accepts and acknowledges its duty to investigate and conduct due diligence enquiries into the subject matter and circumstances of this Bid Call.  
  
(c) The Owner and its officers, employees, agents, consultants and advisors shall not be liable or responsible in respect of any aspect of this Bid Call, or for any oral or written information, or any advice, or any incompleteness, errors or omissions in this Bid Document or information disclosed or otherwise provided to the Bidder under this Bid Call and all of the foregoing, in respect of which Bidders shall assume all risk.

## **8. REQUESTS FOR CLARIFICATION AND ADDENDA DURING BIDDING PERIOD**

- 8.1. Questions related to the Bid Call are required to be submitted to the Purchasing Representative through the Bidding System by using the Submit Question button.

- 8.2. Questions are required to be received **no later than one week prior to Bid Closing**. The Owner reserves the right not to accept, consider or respond to any questions received after the date specified.
- 8.3. Responses to questions which, in the sole judgment of the Purchasing Agent, require an addition to, deletion from or alteration to the requirements of the Bid Document will be provided to Bidders in writing as Addenda. Addenda will be posted to, and available from, the Bidding System.
- 8.4. Addenda shall be part of the Bid Document. Bidders shall include the cost implications of all Addenda in the Bid.
- 8.5. The Bidder shall consider the requirements of all Addenda issued during the bidding period for submitting Bids in the preparation of the Bid.
- 8.6. The Owner will notify Bidders of the issuance of Addenda via email generated by the Bidding System and sent to registered Plan Takers for a Bid Call; however, it is the Bidder's responsibility to ensure that it has received and downloaded all Addenda prior to submitting its Bid. The Owner shall not be liable for any misdirected notices of Addenda resulting from a Bidder's failure to update its contact information in the Bidding System and/or Bidders failing to check for Addenda prior to submitting their Bid.
- 8.7. In the event that an Addendum is issued after a Bidder has submitted its Bid, the Owner's Bidding System shall withdraw the Bid and change the status of the Bid to "incomplete" and the Bidder will be required to acknowledge the addendum and resubmit its Bid prior to Bid Closing. The Bidder is solely responsible to:
- (a) make any required adjustments to their Bid;
  - (b) acknowledge the Addenda; **and**
  - (c) ensure the re-submitted Bid is RECEIVED by the Bidding System no later than 2:00:00 p.m. local time in Brampton, Ontario, on the Bid Closing Date.
- 8.8. The onus is on the Bidder to ensure the Bidder receives all Addenda issued prior to submission of the Bid, whether they have received notification from the **City of Brampton** Bid Opportunities website or not. Bidders must acknowledge receipt of all Addenda when submitting their Bid through the Bidding System. Failure to acknowledge Addenda will result in the Bid being deemed "incomplete" and will not be accepted in the Bidding System.
- 8.9. Bidders shall not rely on oral instructions, clarifications, comments or statements of any kind. Neither the Owner nor any of the Owner's consultants will be responsible for, or bound by, oral instructions, clarifications, comments or statements of any kind.



Clarifications will only be issued in the form of written Addenda and only where the Owner deems it necessary.

8.10. Should a Bidder find discrepancies, ambiguities or omissions in the Bid Document, or have questions about the meaning or intent of anything in the Bid Document, prior to the Bid Closing, the Bidder is required to notify the Purchasing Representative in writing, as soon as possible.

8.11. The Owner's intent in this Bid Call is to permit competition. It shall be the Bidder's responsibility to advise the Purchasing Representative in writing of any language, requirement, specification or any combination thereof in the Bid Document, which restricts or limits competition. Such notification is required to be received by the Purchasing Representative **no later than one week prior to the Bid Closing**.

## **9. COMMUNICATION**

9.1. During the Bid Call Process, Bidders are not permitted to contact, directly or indirectly, any employee, elected official, officer, agent, consultant, advisor or other representative of the Owner, concerning the Bid Call, other than the Purchasing Representative named in the Bid Document Cover Page or his or her delegate. Any communication by a Bidder with anyone other than the Purchasing Representative named in the Bid Document Cover Page or delegate may result in the disqualification of the Bid from the Bid Call, and disqualification of the Bidder from participating in future Bid Calls.

## **10. REVIEW OF SITE CONDITIONS**

10.1. Bidders are responsible for carefully examining the site of every Project and to inform themselves fully as to the existing conditions, limitations, access, surrounding site conditions and all other conditions, and shall consider in the preparation of the Bid, the complete cost of every Project contemplated by the Bid Document. Failure of Bidders to familiarize themselves with site conditions will not be an allowable reason for an increase in Contract costs.

## **11. PRE-BID MEETINGS**

11.1. Where a pre-bid meeting is scheduled, the purpose of the meeting will be to review the terms, conditions and specifications of the Bid Document and receive any questions. Any answers to questions will be issued by Addenda in writing, where the Owner deems it necessary.

11.2. Bidders will be required to sign an attendance sheet confirming their attendance prior to the start of the pre-bid meeting. Bidders who arrive after the pre-bid meeting has started will not be permitted to sign the attendance sheet. It is the Bidder's sole responsibility to ensure timely attendance and sign-in at the meeting.

- 11.3. Bidders must observe all health and safety and security requirements during the pre-bid meeting. Bidders acknowledge that the Bidder, its employees, and representatives attend pre-bid meetings at their own risk.
- 11.4. Where applicable, Bidders must comply with Occupational Health and Safety Act regarding personal protective equipment (PPE), which consists of hard hats and safety boots. Safety vests may also be required.
- 11.5. Where a pre-bid meeting is scheduled, the Owner, at its sole discretion, (i) reserves the right not to proceed with the pre-bid meeting, (ii) may extend, delay, or change the date of the pre-bid meeting, (iii) may schedule more than one pre-bid meeting, and/or (iv) cancel the Bid Call.

## 12. BID REQUIREMENTS

- 12.1. The Bid is required to conform to the bid requirements in this Part A Information for Bidders, and Bids failing to do so may be disqualified.
- 12.2. The Bid must be legibly completed.
- 12.3. Any documents of a Bid being uploaded must:
- (a) be in Adobe pdf format; and
  - (b) **NOT** have a security password.
- 12.4. It is the Bidder's sole responsibility to ensure that any uploaded documents of a Bid:
- (a) are not defective, corrupted or blank; and
  - (b) can be opened and viewed by the Owner.
- 12.5. The Owner may disqualify or reject a Bid that contains documents that cannot be opened and verified by the Owner.
- 12.6. The Bid is required not to be restricted by a statement added to the Bid or a covering letter or alterations to the Bid Document provided by the Owner unless otherwise specified by the Owner. Other forms or agreements may not be considered.
- 12.7. All costs and expenses incurred by a Bidder in the preparation and submission of a Bid, or in providing any additional information in connection with a Bid, shall be borne solely by the Bidder, without reimbursement by the Owner.
- 12.8. The Total Stipulated Price shall include all labour, equipment and materials and utility and transportation services necessary to perform and complete all work required under the Contract, including all miscellaneous work, whether specifically included in the Bid

Document or not. It is the intention of the specifications and drawings to provide finished work. Any items omitted which are clearly necessary for the completion of the work shall be considered part of the work, though not directly specified in the Bid Document and considered in the preparation of the Bid.

- 12.9. Each item in the Price Schedule shall be reasonably priced for such item. Bids that contain prices which appear to be unbalanced as to affect adversely the interest of the Owner, may be rejected. All prices must be quoted in Canadian dollars.
- 12.10. The Owner is required to inventory assets in accordance with the Public Sector Accounting Board – Tangible Capital Assets (PSAB 3150). The attached “PSAB Inventory Management Form” shows each component that is specific to the Project. Bidders shall include in their Bid, all costs associated to invoice in the prescribed method. The Successful Bidder shall be required to break down the total amount of each invoice (to include, all costs, but not limited to design, labour, materials, installation, delivery) for components checked off on the “PSAB Inventory Management Form”.
- 12.11. (a) The Bid is required to be executed in the full legal name of the Bidder. Where the Bidder is a corporation, the Bidder’s name should be identical in all aspects to that on its Constatting Documents.
- (b) The Bid is required to be submitted by an authorized person with authority to submit the Bid on behalf of the Bidder and with authority to bind the Bidder.
- (c) Where a Bid is submitted by more than one legal entity as Bidder, the full legal name of each of them shall be specified.
- 12.12. The Bidder must disclose to the Owner any potential conflict of interest that might compromise performance of the work. If such conflict of interest does exist, the Owner may, at its sole discretion, refuse to consider the Bid.
- 12.13. In accordance with Purchasing By-law 19-2018, Section 10 Code of Conduct and Conflict of Interest, the Bidder must also disclose whether it is aware of any employee of the Owner, Council member or member of an Owner’s agency, board or commission or employee thereof having a financial interest in the Bidder and the nature of that interest. If such an interest exists or arises prior to the award of a Contract, the Purchasing Agent may, at its sole discretion, refuse to consider the Bid or withhold the awarding of any contract to the Bidder until the matter is resolved to the Purchasing Agent’s sole satisfaction.
- 12.14. Bidders are cautioned that the acceptance of their Bid may preclude them from participating as a Bidder in subsequent projects where a conflict of interest may arise. The Successful Bidder for this Project may participate in subsequent/other Owner

projects provided the Successful Bidder has satisfied pre-qualification requirements of the Owner, if any, and in the opinion of the Owner, no conflict of interest would adversely affect the performance and successful completion of a contract by the Successful Bidder.

- 12.15. The Owner reserves the right at its sole discretion to disqualify a Bid or terminate any ensuing Contract, if at any time the Owner discovers evidence of an undeclared connection of any members of City Council or officials or employees of the Owner with the Contract, or any conflict of interest, or collusion or fraud.
- 12.16. All Bids submitted to the Owner become the property of the Owner. All information in a Bid will be subject to the provisions of the *Municipal Freedom of Information and Protection of Privacy Act* and this Bid Document.
- 12.17. The Bidder will comply with any laws (including regulations and common law) pertaining to the privacy and protection of Personal Information to which Bidder is subject.
- 12.18. The Bidder will provide the Owner with information, cooperation and assistance, as requested by the Owner from time to time, in order to enable the Owner to comply with any and all requirements to which the Owner is subject under any laws (including MFIPPA, regulations and common law) pertaining to the privacy and protection of Personal Information.
- 12.19. This Bid Call, and any resulting Contract, shall be governed by the laws of the Province of Ontario, Canada.

### 13. IRREGULARITIES

13.1. The Purchasing Agent will reject Bids containing any Material Irregularity. The Purchasing Representative will notify Bidders whose Bids are rejected due to a Material Irregularity prior to award.

13.2. The following Irregularities shall be deemed to be a Material Irregularity:

1. **Late Bid**
  - (a) The Bid is not received by the Owner's Bidding System on or before the Closing Time on the Closing Date;
2. **Price**
  - (a) Prices are not complete and specified as required;
3. **Authority to Bind the Bidder**
  - (a) The Bid is not submitted by a representative of the Bidder with authority to submit a Bid on behalf of the Bidder and with authority to bind the Bidder;

4. **Bid Deposit**

- (a) The Bid Deposit is not submitted with the Bid when required;
- (b) The Bid Deposit is not properly executed or not in the form specified as per Section 13 of the Bid Document;
- (c) The amount of the Bid Deposit is not equal to or greater than the amount required;
- (d) The Bid Deposit is not in the name of the Bidder;

5. **Mandatory Pre-Bid Meetings**

Failure of Bidder to attend a mandatory pre-bid meeting.

**14. BID DEPOSIT – NOT APPLICABLE**

**15. SECURITIES**

15.1. The Successful Bidder shall arrange, pay for and execute with an insurer licensed under the *Insurance Act*, R.S.O. 1990, c. I.8 write surety and fidelity insurance, the following:

- a digital Performance Bond of at least 50% of the awarded contract price for an extended term covering the warranty period in the form prescribed by Ontario Regulation 303/18 of the *Construction Act* and attached at Schedule 1 of the Bid Document.
- a digital Labour and Material Payment Bond of at least 50% of the awarded contract price for an extended term covering the warranty period in the form prescribed by Ontario Regulation 303/18 of the *Construction Act* and attached at Schedule 2 of the Bid Document.

14.1.1 For a bond to be in an acceptable digital format it must meet all of the following requirements:

- **Include a method of authentication that confirms ‘Integrity of Content’** – the bond must include assurances that the document received is the true document executed and the content has not been changed or altered.
- **Be verifiable/enforceable** – the bond must include assurances that the document was duly executed by the parties identified and that it is enforceable in law. This requires the use of a third party digital service provider.
- **Be digitally executed** – the bond must contain digital signatures and digital seals. A scanned copy of a paper bond is **not** an acceptable digital bond.

14.1.2 The Bidder and its surety company should refer to the e-bonding information on Surety Association of Canada's website which includes:

- A list of third parties that provide online surety digital bond services. The Owner does not endorse or promote any third party electronic surety bond service provider.
- A Checklist of Industry Requirements for e-bonding solutions which sets out the requirements for electronic surety/digital bonds.

15.2. Where the Bidder is a corporation, the Bidder's name should be identical in all aspects to that on the corporation's Constatting Documents.

## 16. WITHDRAWAL AND EDIT OF BIDS

16.1. A Bidder who has submitted a Bid may edit or withdraw the Bid prior to Bid Closing.

16.2. A Bidder who wishes to edit its Bid after it has been submitted must withdraw its Bid, make the necessary changes, and resubmit its Bid prior to Bid Closing.

16.3. The Bidder is solely responsible to ensure the re-submitted bid is **RECEIVED** by the Owner's Bidding System no later than 2:00:00 p.m. local time in Brampton, Ontario, on the Bid Closing Date.

## 17. CHECKING OF BIDS

17.1. Bids will be opened and checked by the Purchasing Representative or delegate to ensure compliance with the requirements of the Bid Document. Unofficial Bid results may be available after 2:30 p.m. on the Bid Closing Date on the Owner's Bids and Tenders website at

<https://brampton.bidsandtenders.ca>.

17.2. The Owner reserves the right for the Purchasing Agent, at the Purchasing Agent's sole discretion, not to proceed with the opening of the Bids and to delay / change the Closing Date and / or Closing Time and / or cancel the Bid Call as the Purchasing Agent may deem appropriate, in the Purchasing Agent's sole discretion.

17.3. All Bids received are unofficial until they have been reviewed by the Owner for compliance, which may alter the ranking of the lowest Bidder. A decision to accept or reject a Bid due to Irregularities will not be made until a review has been conducted.

17.4. In the event of an inconsistency or mathematical error between a unit price and an extended price based on estimated quantity, the unit price shall be deemed to be correct

and the extended price shall be corrected accordingly. In the event of an inconsistency or mathematical error such that the Total Stipulated Price is not the sum of amounts bid for the individual items, the amounts bid for the individual items shall be deemed to be correct and the Total Stipulated Price shall be corrected accordingly.

17.5. The intent of the Bidder as shown in the Bid should be considered and the Bid adjusted accordingly.

## **18. RIGHTS RESERVED TO OWNER**

18.1. In addition to any other rights reserved to the Owner, the Owner reserves the right, privilege, entitlement and absolute discretion, for any reason whatsoever, to:

- (a) accept a Bid which is not the lowest Bid;
- (b) reject a Bid which is the lowest Bid, even if it is the only Bid received;
- (c) cancel the Bid Call at any time, either before or after the Closing Date;
- (d) accept or reject any and all Bids, whether in whole or in part;
- (e) except in the case of an Irregularity which requires a Bid to be disqualified, accept a Bid that contains Irregularities;
- (f) award any part of any Bid; and
- (g) accept or reject any unbalanced Bid.

18.2. Without in any way limiting the Owner's rights, and notwithstanding that Bidders may have been pre-qualified, the Owner may accept a Bid which is not the lowest Bid where the Purchasing Agent, in the Purchasing Agent's sole and absolute discretion, considers the Bid to be most advantageous to the interests of the Owner or that may provide the greatest value advantage and benefit to the Owner, based upon the Bidder's:

- (a) price;
- (b) ability to perform;
- (c) proposed schedule;
- (d) ability to complete within the time required by the Owner;
- (e) quality;
- (f) level of service;
- (g) proposed personnel and subcontractors;
- (h) past experience;
- (i) past performance;
- (j) qualifications; and
- (k) such other matters as could reasonably be anticipated to be of concern to the Owner.

18.3. The Owner further reserves the right, in its sole and absolute discretion, to accept or reject a Bid which, in the Purchasing Agent's sole opinion, is incomplete, obscure, irregular, conditional or qualified, or which has erasures, alterations or corrections, or

otherwise does not fully comply with the requirements of the Bid Document if, in so doing, the best interests of the Owner will be served, provided that in the sole opinion of the Purchasing Agent the Irregularity is not a Material Irregularity.

- 18.4. The Owner reserves the right to request supplementary or additional information from one or more Bidders after Bid Closing, without affecting the validity of the Bids submitted, as may be required to clarify a Bid and facilitate the Owner's decision to award a Contract, if any. Such requested information will not alter the Bid or constitute negotiation with the Bidder, and the Owner is not obligated to seek clarification from a Bidder, or with respect to any Bid which is deficient or not acceptable.
- 18.5. The Owner may, in its absolute discretion, but is not required to, independently verify any information in any Bid. The Owner reserves the right to disqualify any Bidder whose Bid contains any false or misleading information in the opinion of the Owner acting through the Purchasing Agent in the Purchasing Agent's absolute discretion.
- 18.6. The Owner reserves the right to award by item, or part thereof, groups of items, or parts thereof, or all items of the Bid Call, and to award contracts to one or more Bidders.
- 18.7. The Owner reserves the right to proceed in its sole and absolute discretion it determines, at any time following receipt of the Bids, including, without limitation, to proceed with issuing a second or more, or a modified Bid Document for subject of the Bid Call or entering into Contract negotiations with any Bidder or Bidders.
- 18.8. Without limiting the generality of the foregoing, in the event the Total Stipulated Price of each Bid exceeds the Owner's approved budget amount, the Owner may, in its sole and absolute discretion, elect to negotiate with the Bidder who submitted the lowest compliant Bid to an amount that is within budget. If negotiations for a Contract with the lowest compliant Bidder fail, the Owner reserves the right to negotiate with the next lowest compliant Bidder, and so on as necessary, until successful negotiations are concluded or the Bid Call is terminated.
- 18.9. The Owner, shall have the right in its absolute discretion, to disqualify or reject a Bid, if the Bidder is disqualified from participating in procurements of the Owner under a Vendor suspension administrative directive and in accordance with such other policies, standard operating procedures or protocols as may be in effect.
- 18.10. The Owner shall not be responsible for any liabilities, costs, expenses, loss or damage incurred, sustained or suffered by any Bidder by reason of the acceptance or the non-acceptance or delay in awarding the Contract.
- 18.11. The Owner reserves the right for the Purchasing Agent in the Purchasing Agent's sole discretion to remove from the Owner's Official Vendor File, for a period, the name of any Bidder for failure to enter into a contract as awarded, or for unsatisfactory



performance of Contract pursuant to any applicable Vendor suspension administrative directive.

- 18.12. Without in any way limiting the Owner's other rights respecting Bid evaluation, the Owner may, when determining the amount Bid by any or all Bidders, consider any or all alternate prices, and/or separate prices, and/or itemized prices, and/or unit prices submitted in compliance with the Bid Document.

## **19. BID VALIDITY PERIOD**

- 19.1. All Bids shall be valid, irrevocable and open for acceptance by the Owner and no adjustment shall be made to the Bids for a period of sixty (60) days from the date of Bid Closing.
- 19.2. All prices shall remain firm for the duration of the Contract and are subject to acceptance within sixty (60) days from the Closing Date specified in the Bid Document.

## **20. INSURANCE – ALL IN ACCORDANCE WITH PART B CONTRACT EXECUTION PACKAGE – INSURANCE REQUIREMENTS**

## **21. AWARD OF CONTRACT**

- 21.1. Acceptance of the Bid and award of the Contract will be by written Notice of Award by the Owner to the Successful Bidder.
- 21.2. (a) After award and before the Owner executes the Contract, the Successful Bidder shall provide a valid Workplace Safety and Insurance Board Clearance Certificate from the Ontario Workplace Safety and Insurance Board.
- (b) If the Successful Bidder does not require Workplace Safety and Insurance Board Insurance, the Successful Bidder shall provide proof to the Owner from the Workplace Safety and Insurance Board of such status before the Owner executes the Contract.
- (c) For projects subject to the Fair Wage Policy, the Successful Bidder shall complete the Fair Wage Mandatory Requirements Attestation. The Fair Wage Mandatory Requirements Attestation will be shared with the award letter.
- 21.3. The Bidder to whom this Contract is awarded shall execute and return the Contract Documents within five (5) days from the date of mailing the Notice of Award by the Owner the following items.
1. CCDC 2 – 2020 Stipulated Price Contract as amended by Supplementary Conditions and Project Specific Supplementary Conditions (Two (2) original copies signed and sealed as required)

2. Performance Bond.
  3. Labour and Material Payment Bond.
  4. Certificate of Insurance.
  5. WSIB Clearance Certificate.
- 21.4. The Owner may require the Contract to be executed by the Bidder in the name in which the Bid was submitted. In the event of a difference between the name of the Bidder and the name under which it is proposed to enter the Contract,
- (a) the Owner may disqualify the Bid or treat the Bidder as refusing to enter into the Contract as awarded; or
  - (b) the Owner may, but shall not be obliged to, require that the Bidder provide evidence that the party proposing to enter into the Contract is one and the same entity as the Bidder. Such evidence may include a Corporate Status Certificate or Certificate of Compliance or any other documentation acceptable to the Owner. Acceptable documentation shall be dated no more than six (6) months from the date of request.
- 21.5. The Successful Bidder may be required to submit a preliminary project schedule showing the various components of the work, from receipt of purchase order through to Total Performance of the Work in which event the Successful Bidder shall submit the preliminary project schedule to the Owner within ten (10) days after Notice of Award.
- 21.6. The Successful Bidder shall not commence work until receipt of a Purchase Order from the Owner.
- 21.7. The Owner is required to pay the Harmonized Sales Tax (HST) on all goods, materials, labour, services and equipment. This tax must be shown separately and shall not be included in the unit prices.

## **22. DEBRIEFING**

- 22.1. Bidders may request a debriefing after award of Contract. Requests in writing must be made to the Purchasing Representative within sixty (60) days of award of Contract. The intent of debriefing is to assist Bidders in presenting better Bids in subsequent procurement opportunities. Debriefing is not for the purpose of providing an opportunity to challenge the procurement process. Debriefing will not alter an award decision.

## **23. DEFAULT**

- 23.1. In the event of default or failure of the Bidder to execute and return the Contract Documents within the time required to do so, or if the Bidder, for any reason, fails or

defaults in respect of any other matter or thing which is an obligation of the Bidder under the terms of the Bid Call before execution of the Contract by the Bidder and the Owner, in addition to any other rights of the Owner, the Owner shall be at liberty to do any one or more of the following:

- i) retain the money deposited by the Bidder to the use of the Owner, and deal with the requirements of the Bid Call in any way the Owner deems best;
- ii) disqualify the Bid from the Bid Call;
- iii) require the Bidder to pay to the Owner the difference between this Bid and any greater sum which the Owner may expend or incur by reason of such default or failure, including the cost of any new procurement; and the Bidder shall indemnify and save harmless the Owner and its officers from all loss, damage, cost, charges and expense which the Owner may suffer or be put to by reason of any such default or failure; and
- iv) disqualify the Bidder from competing in future Bid Calls issued by the Owner for a period pursuant to any applicable Vendor suspension administrative directive.

Where Special Provisions to Instructions to Bidders are contained herein, it should be noted that these Special Provisions to Instructions to Bidders shall govern in the case of inconsistency or conflict with the Instructions to Bidders.

**SP1. Part A Information for Bidders, Instructions to Bidders, Section 6 Bid Document**

Add new paragraph 6.2 as follows:

6.2 The Bid Document, which includes any Addenda will be issued to, and Bids will only be accepted from, the **pre-qualified Bidders/Contractors of RFPQ2021-145**, listed below:

**Prequalified Vendors:**

1. Anacond Contracting Inc.
2. Area Construction Inc
3. Basekamp Construction Corp.
4. BDA Inc.
5. Edgefield Construction Inc
6. Elite Construction Inc
7. Frontier Group of Companies Inc.
8. GEN-PRO /1320376 Ontario Ltd.
9. H.N. Construction Limited
10. Joe Pace & Sons Contracting Inc
11. M.J. Dixon Construction Ltd.
12. Maracon Construction Limited
13. Martinway Contracting Ltd.
14. Matheson Constructors Limited
15. Rea Investments Limited o/a Rea Construction
16. Rutherford Contracting Ltd.
17. Torque Builders Inc.

**SP2. Request for Approval of Alternates**

Request for approval of alternates will not be accepted during the bidding period.

The Agreement to be executed shall be the CCDC 2 - 2020 Stipulated Price Contract as amended by the Owner's Supplementary Conditions.

**SUPPLEMENTARY ARTICLES (revision February 2022)**

The Articles of the Stipulated Price Contract, CCDC-2 2020 are hereby amended as follows:

**SA1            ARTICLE A-1 THE WORK**

**SA1.1        Paragraph 1.3:**

Delete the words “*Ready-for-Takeover*” in the second line of paragraph 1.3 and replace with “*Substantial Performance of the Work*”

Add the words “and attain *Ready-for-Takeover* within 20 days of attaining *Substantial Performance of the Work*, and attain *Total Performance of the Work* within 30 days of attaining *Substantial Performance of the Work*” in the second line of paragraph 1.3.

**SA2            ARTICLE A-3 CONTRACT DOCUMENTS**

**SA2.1        Paragraph 3.1:**

Add the words:

- Supplementary Articles of the Contract
- Supplementary Definitions of the Contract
- Supplementary Conditions of the Contract
- Proper Invoice Checklist

to the list of *Contract Documents* in paragraph 3.1.

**SA3            ARTICLE A-4 – CONTRACT PRICE**

**SA3.1        Paragraph 4.6:**

Add a new paragraph 4.6 as follows:

4.6     The legislation and regulations governing the workplace in Ontario, (including, without limitation, the *Canadian Income Tax Act*, the *Canadian Immigration and Refugee Protection Act*, *Ontario Employment Standards Act, 2000*, *Employer Health Tax Act*, *Labour Relations Act, 1995*, *Occupational Health and Safety Act* and *Workplace Safety and Insurance Act, 1997*) may change at any time and may impact upon the *Contract Price* and the *Contractor’s* overhead costs. The *Contractor* hereby acknowledges

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and agrees that the *Contract Price* is final and may not be increased or altered by the *Contractor* as a result of any proposed, future or unanticipated changes to legislation and regulations, including changes in market prices arising directly or indirectly from such legislative or regulatory changes, even if they impact the *Contractor's* pricing and overhead costs. For greater certainty, the *Contractor* acknowledges and agrees that the *Owner* will not entertain requests to change submitted bid prices for this *Project* based on changes to the minimum wage, changes to public health requirements (e.g. COVID-19 prevention), legislative or regulatory amendments made under any statute, or unanticipated changes to market prices arising directly or indirectly from such changes. The *Contractor* assumes the risk and responsibility for any cost increases due to legislative, regulatory and market changes. For further clarity, the *Contractor* takes on all risks due to health, environmental, social, emergency or other factors which may arise and which may result in unforeseen or otherwise unexpected costs or legal circumstances to the *Contractor* in order to complete the *Work*, to keep its workers or the public safe according to applicable law and government order, or to address other intervening circumstances. The *Contractor* is required to arrange its own contractual and subcontractor obligations for labour, materials or other matters related to this *Project* so as to fulfill its contractual obligations to the *Owner* under this Agreement.

**SA4            ARTICLE A-5 – PAYMENT**

**SA4.1        Paragraph 5.2.1:**

Delete subparagraphs 5.2.1(1) and 5.2.1(2) and replace with:

(1) 0 % (zero per cent) per annum above the prime rate.

**SA4.2        Paragraph 5.3:**

Add the following new paragraph 5.3 to ARTICLE A-5 – PAYMENT:

- 5.3        The *Owner* is entitled to set off against any amounts otherwise due to *Contractor* pursuant to the terms of this *Contract*, any amounts which are due or owed to *Owner* from or by *Contractor* pursuant to the terms of the *Contract*, or being disputed in accordance with the terms of the *Contract*.

**SA5            ARTICLE A-9 – CONFLICT OF INTEREST**

**SA5.1        Add new Article A-9 – Conflict of Interest as follows:**

**ARTICLE A-9 CONFLICT OF INTEREST**

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- 9.1 The *Contractor*, all of the *Subcontractors*, and any of their respective advisors, partners, directors, officers, employees, agents, and volunteers shall not engage in any activity or provide any services where such activity or the provision of such services creates a conflict of interest (actually or potentially, in the sole opinion of the *Owner*) with the provision of the *Work* pursuant to the *Contract*.
- 9.2 The *Contractor* shall disclose to the *Owner*, in writing, without delay any actual or potential situation that may be reasonably interpreted as either a conflict of interest or a potential conflict of interest, including the retention of any *Subcontractor* or *Supplier* that is directly or indirectly affiliated with or related to the *Contractor*.
- 9.3 A breach of this Article by the *Contractor*, any of the *Subcontractors*, or any of their respective advisors, partners, directors, officers, employees, agents, and volunteers shall entitle the *Owner* to terminate the *Contract*, in addition to any other rights and remedies that the *Owner* has in the *Contract*, in law, or in equity.

**SA6 ARTICLE A-10 SEVERABILITY**

**SA6.1** Add new Article A-10 SEVERABILITY as follows:

**ARTICLE A-10 SEVERABILITY**

- 10.1 If any provision of this *Contract* is found to be invalid or unenforceable in any circumstances, the remainder of this *Contract*, and the application of such provision in any other circumstances, shall not be affected.

**SA7 ARTICLE A-11 TIME OF ESSENCE**

**SA7.1** Add new Article A-11 TIME OF ESSENCE as follows:

**ARTICLE A-11 TIME OF ESSENCE**

- 11.1 Time shall be of the essence of the *Contract* and under all *Contract Documents*.



### **SUPPLEMENTARY DEFINITIONS**

The Definitions of the Stipulated Price Contract CCDC-2 – 2020 are hereby amended as follows:

**SD1 As-Built Drawings**

Add new definition – As-Built Drawings, in a new paragraph before the definition of Change Directive, as follows:

**As-Built Drawings**

*As-Built Drawings* means drawings prepared by the *Contractor* by marking on a copy of the Drawings the changes from the Drawings which occur during construction including, but are not limited to the exact location of major building components that were shown generally on the Drawings.

**SD2 Construction Act Document**

Add new definition – Construction Act Document, in a new paragraph after the definition of Change Order, as follows:

**Construction Act Document**

*Construction Act Document* means a Notice of Non-Payment, a notice of adjudication given pursuant to Section 13.7 of Part II.1 of the *Construction Act* or any documents or responses to adjudication to be given or provided pursuant to Part II.1 of the *Construction Act*.

**SD3 Contract Documents**

Add the words “in writing” after the word “upon” in the second line.

**SD4 Contract Time**

Delete the words “*Ready-for-Takeover*” and replace with “*Total Performance of the Work*”.

**SD5 Hazardous Material**

Add new definition – Hazardous Material, in a new paragraph after the definition of Drawings, as follows:

**Hazardous Material**

*Hazardous Material* means, collectively, any contaminant, waste or subject waste as defined in the *Environmental Protection Act*, as amended from time to time (the “EPA”), toxic substance (as defined in the *Canadian Environmental Protection Act*, as amended from time to time (the “CEPA”), dangerous goods (as defined in the *Transportation of Dangerous Goods Act* (Canada) as amended from time to time (“TDGA”)) or pollutant (as defined in the EPA), or any other substance which when released to the natural environment is likely to cause in some immediate or foreseeable future time, material harm or degradation to the natural environment or material risk or harm to human health, including without limitation asbestos, “PCBs”, arsenic, silica and any other contaminant. Whenever the terms “toxic and hazardous substances” is used in the *Contract*, it shall be deemed amended to read “*Hazardous Material*”.

**SD6 Notice of Non-Payment**

Add new definition– Notice of Non-Payment, in a new paragraph after the definition of Notice in Writing, as follows:

**Notice of Non-Payment**

*Notice of Non-Payment* is a notice delivered pursuant to Section 6.4(2) of Part I.1 of the *Construction Act* in the manner and form prescribed in the *Construction Act*.

**SD7 Proper Invoice**

Add new definition– Proper Invoice, in a new paragraph after the definition of Project, as follows:

**Proper Invoice**

*Proper Invoice* means an invoice submitted by the *Contractor* that includes all information required by GC 5.2.1, which includes the information required for a “Proper Invoice” in Section 6.1 of the *Construction Act*, and which is submitted in accordance with GC 5.2.11 and GC 5.2.15.

**SD8 Submittals**

Add new definition – Submittals, in a new paragraph after the definition of Subcontractor, as follows:

**Submittals**

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*Submittals* are documents or items required by the *Contract Documents* to be provided by the *Contractor*, such as:

- *Shop Drawings*, samples, models, mock-ups to indicate details or characteristics, before the portion of the *Work* that they represent can be incorporated into the *Work*; and
- Record drawings and manuals that provide instructions for the operation and maintenance of the *Work*.

**SD9 Total Performance of the Work**

Add new definition – Total Performance of the Work, in a new paragraph after the definition of Temporary Work, as follows:

**Total Performance of the Work**

*Total Performance of the Work* means when the entire *Work*, except for those items arising from GC 12.3 – WARRANTY, has been performed in accordance with the requirements of the *Contract Documents* and is so certified by the *Consultant*. For greater certainty, *Total Performance of the Work* includes all elements of *Ready-for-Takeover* as set out in GC 12.1.1, and is assessed after the attainment of *Ready-for-Takeover*.

**SD10 Warranty Reserve**

Add new definition – Warranty Reserve, in a new paragraph after the definition of Value Added Taxes, as follows:

*Warranty Reserve* has the meaning set out in paragraph 5.2.13.

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**SUPPLEMENTARY CONDITIONS**

The General Conditions of the Stipulated Price Contract CCDC 2 – 2020 are hereby amended as follows:

Where a General Condition or paragraph of the General Conditions of the Stipulated Price Contract is deleted by these Supplementary Conditions, the numbering of the remaining General Conditions or paragraphs shall remain unchanged, and the numbering of the deleted item will be retained, unused.

**SC1 CONTRACT DOCUMENTS****SC1.1 Paragraph 1.1.2:**

Delete the following sentence at the end of paragraph 1.1.2: “Performance by the *Contractor* shall be required only to the extent consistent with the *Contract Documents*.”

**SC1.2 Paragraph 1.1.4:**

Delete paragraph 1.1.4 in its entirety and substitute a new paragraph 1.1.4 as follows:

1.1.4 – The *Contractor’s* obligation to review is subject to GC 3.9 – DOCUMENT REVIEW.

**SC1.3 Paragraph 1.1.5.1:**

Add the words “• Supplementary Articles” at the beginning of the order of priority of documents in subparagraph 1.1.5.1.

Add the words “• Supplementary Definitions” above the words “the Definitions” in the order of priority of documents in subparagraph 1.1.5.1.

**SC1.4 Paragraph 1.1.5.5:**

Delete subparagraph 1.1.5.5 and substitute a new subparagraph 1.1.5.5 as follows:

1.1.5.5 - In case of discrepancies, noted materials and annotations shall take precedence over graphic indications in the *Contract Documents*.

**SC1.5 Paragraph 1.1.9:**

Add new sentence to the end of paragraph 1.1.9:

The *Specifications* are divided into divisions and sections for convenience but shall be read as a whole and neither such division nor anything else contained in the *Contract Documents* will be construed to place responsibility on the *Consultant* to settle disputes among the *Subcontractors* and *Suppliers* or as between them and the *Contractor* with respect to such divisions.

**SC2 GC 1.3 RIGHTS AND REMEDIES**

**SC2.1 Paragraph 1.3.2:**

Delete the word "No" from the beginning of paragraph 1.3.2 and substitute the following words:

"Except with respect to the notice requirements set out in paragraphs 6.4.1, 6.5.4, and 6.6.1, no".

**SC2.2 Paragraph 1.3.3:**

Add new paragraph 1.3.3 as follows:

1.3.3 – Notwithstanding paragraph 1.3.1, the *Owner* shall not be liable, whether in contract, tort, or any other theory of law or statute, for any claim arising from any prior negotiation, representation, or agreement, whether written or oral, which is superseded by the *Contract* under Article A-2 of the Agreement - AGREEMENTS AND AMENDMENTS.

**SC3 GC 1.4 ASSIGNMENT**

**SC3.1 Paragraph 1.4.1:**

Add the following sentence to the end of paragraph 1.4.1:

In the event of an assignment of the Contract by the *Contractor*, such assignment shall not relieve the *Contractor* from its obligations and liabilities hereunder.

**SC4 GC 2.2 ROLE OF THE CONSULTANT**

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**SC4.1 Paragraph 2.2.4:**

Add the following before the words “FINAL PAYMENT” to the title of GC 5.5.: “PAYMENT AT THE TIME OF READY-FOR-TAKEOVER AND”

Add the following to the end of paragraph 2.2.4:

In the event that the certificate for payment is for an amount less than the full amount stated on the application for payment, the *Owner* will issue a *Notice of Non-Payment* in respect of the disputed amount.

**SC4.2 Paragraph 2.2.6:**

Delete the words “Except with respect to GC 5.1 – FINANCING INFORMATION REQUIRED OF THE OWNER, the” and substitute the word “The” at the beginning of paragraph 2.2.6.

**SC4.3 Paragraph 2.2.12:**

Add the following to the end of paragraph 2.2.12:

If, in the opinion of the *Contractor*, performance of the *Supplemental Instruction* will result in an increase in the *Contract Price* or to the *Contract Time*, the *Contractor* shall, within 10 *Working Days* of receipt of the *Supplemental Instruction*, provide the *Consultant* with *Notice in Writing* of the cause and duration of the delay and of any increase in *Contract Price*. Failure to provide the *Notice in Writing* shall be a deemed acceptance of the *Supplemental Instruction* by the *Contractor* without adjustment in the *Contract Price* or *Contract Time*.

**SC4.4 Paragraph 2.2.13:**

Delete the word “submittals,” and substitute the words “*Submittals* which are provided” after the word “other” in the first line of paragraph 2.2.13.

**SC4.5 Paragraph 2.2.15:**

Add to the end of paragraph 2.2.15:

The *Consultant* will evaluate the achievement of *Ready-for-Takeover* in accordance with paragraphs 5.5.1, 12.1.1, and 12.1.4.

**SC4.6 Paragraph 2.2.19:**

Add new paragraph 2.2.19 as follows:

2.2.19 – The *Consultant* will conduct reviews of the *Work* to determine the date of *Total Performance of the Work* as provided in paragraph 5.5.1.

**SC5 GC 2.3 REVIEW AND INSPECTION OF THE WORK**

**SC5.1 Paragraphs 2.3.8, 2.3.9 and 2.3.10:**

Add new paragraphs 2.3.8, 2.3.9 and 2.3.10 as follows:

2.3.8 - The *Contractor* shall immediately inform the *Owner* and the *Consultant* of any notices, warnings or asserted violations issued by any regulatory or government agencies having jurisdiction relating to the *Work*.

2.3.9 - No review of the *Work* by the *Owner* or the *Consultant* shall relieve the *Contractor* from its responsibility to perform the *Work* in accordance with the *Contract Documents*.

2.3.10 - Where standards of performance are specified in the *Contract Documents* and the *Work* does not comply with the performance specified, such deficiency shall be corrected as directed by the *Consultant*. Any testing of work identified as defective in accordance with GC 2.4, including retesting required by the *Owner* to verify performance, shall be done at the *Contractor's* expense.

**SC6 GC 2.4 DEFECTIVE WORK**

**SC6.1 Paragraph 2.4.1.1:**

Add new subparagraph 2.4.1.1 as follows:

2.4.1.1 - The *Contractor* shall rectify, in a manner acceptable to the *Owner* and the *Consultant*, all defective work and deficiencies throughout the *Work*, whether or not they are specifically identified by the *Owner* or the *Consultant*.

**SC6.2 Paragraph 2.4.3:**

Delete the words “the difference in value between the work as performed and that called for by” and substitute the words “the value of such work as is necessary to correct any non-compliance with” in the second and third lines of paragraph 2.4.3.

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**SC6.3 Paragraph 2.4.4:**

Add new paragraph 2.4.4 as follows:

2.4.4 - The *Contractor* shall prioritize the correction of any defective work which, in the sole discretion of the *Owner*, adversely affects the day-to-day operations of the *Owner*.

**SC7 GC 3.1 CONTROL OF THE WORK**

**SC7.1 Paragraph 3.1.2:**

Add the word “schedules” after the word “techniques” in the first line of paragraph 3.1.2.

**SC7.2 Paragraph 3.1.3:**

Add new paragraph 3.1.3 as follows:

3.1.3 - Prior to commencing the *Work* and individual procurement, fabrication and construction activities, the *Contractor* shall verify, at the *Place of the Work*, all relevant measurements and levels necessary for the proper fabrication, assembly, installation and completion of the *Work* and shall further carefully compare such field measurements and conditions with the requirements of the *Contract Documents*. Where dimensions are not included or exact locations are not apparent in the *Contract Documents*, the *Contractor* shall immediately notify the *Consultant* in writing and obtain *Supplemental Instructions* from the *Consultant* before proceeding with any part of the affected work.

**SC8 GC 3.2 CONSTRUCTION BY OWNER OR OTHER CONTRACTORS**

**SC8.1 Paragraph 3.2.2.1:**

Delete subparagraph 3.2.2.1 in its entirety.

**SC8.2 Paragraph 3.2.2.3:**

Delete “and” at the end of paragraph 3.2.2.3.

**SC8.3 Paragraph 3.2.2.4:**

Delete the period at the end of paragraph 3.2.2.4 and substitute with “; and”



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**SC8.4 Paragraph 3.2.2.5:**

Add new paragraph 3.2.2.5 as follows:

“require *Other Contractors* and the *Owner’s* own forces to comply with the requirements and instructions of the *Contractor* with respect to construction safety at the Place of the Work.”

**SC8.5 Paragraph 3.2.3.3:**

Delete “and” at the end of paragraph 3.2.2.3.

**SC8.6 Paragraph 3.2.3.4:**

Delete the period at the end of paragraph 3.2.3.4 and substitute with “,”

**SC8.7 Paragraphs 3.2.3.5 and 3.2.3.6:**

Add new subparagraphs 3.2.3.5 and 3.2.3.6 as follows:

3.2.3.5 - Subject to General Condition 9.4 - CONSTRUCTION SAFETY, assume overall responsibility for compliance with all aspects of the applicable health and safety legislation in the *Place of the Work* for the *Owner’s* own forces and for *Other Contractors*, including all of the responsibilities of the contractor, constructor, prime contractor or principal contractor as may apply in accordance with the applicable health and safety legislation of the *Place of the Work* as defined in the *Occupational Health and Safety Act*; and

3.2.3.6 Take all reasonable, practical and prudent steps to provide for the coordination of the activities and work of *Other Contractors* and *Owner’s* own forces with the *Work* of the *Contract*.

**SC8.8 Paragraph 3.2.6:**

Add the following to the end of paragraph 3.2.6:

“Cutting and remedial work shall be performed by specialists familiar with the *Products* affected and shall be performed in a manner to neither damage nor endanger the *Work*.”

**SC9 GC 3.4 CONSTRUCTION SCHEDULE**

**SC9.1 Paragraph 3.4.1:**

Delete paragraph 3.4.1 in its entirety and substitute new paragraph 3.4.1 as follows:

3.4.1 - The *Contractor* shall,

.1 within ten (10) *Working Days* following the notice of award of the *Contract*, prepare and submit to the *Owner* and the *Consultant*, for their approval, a construction schedule that indicates the timing of the activities of the *Work* and critical milestone dates for the *Work*, demonstrating that the *Work* will be performed in conformity with the *Contract Time* and in accordance with the *Contract Documents*. Such schedule:

- (a) when required by the *Specifications* to be generated using construction scheduling software, shall be prepared using the software "Microsoft Project," unless otherwise agreed to in writing by the *Owner* and the *Consultant*, and
- (b) shall be provided monthly in editable electronic format approved by the *Owner* and the *Consultant*, and shall include and show all logic links between activities, and
- (c) shall be prepared in collaboration with, and supported by, the *Subcontractors* and *Suppliers* whose activities affect the critical path of the *Work*, and
- (d) shall include and make provision for statutory holidays, the rectification of defects and deficiencies, and all warranty obligations, and
- (e) shall provide sufficient detail of the critical events and their inter-relationship and shall include a baseline schedule indicating the critical path for the Project.

Once accepted by the *Owner* and the *Consultant*, the construction schedule submitted by the *Contractor* under this paragraph 3.4.1 shall become the "**Baseline Schedule**".

If the construction schedule submitted by the *Contractor* is not accepted by the *Owner* and the *Consultant*, the *Contractor* shall make revisions to the construction schedule until it is accepted by the *Owner* and the *Consultant*. Notwithstanding any other terms of this *Contract*, the *Contractor* shall not be entitled to receive any payment from the *Owner* until a construction schedule has been submitted by the *Contractor* and accepted by the *Owner* and the *Consultant*.

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- .2 provide the expertise and resources, such resources including manpower and equipment, as are necessary to maintain progress under the accepted *Baseline Schedule* or any successor or revised schedule accepted by the *Owner* and the *Consultant* pursuant to General Condition 3.4 – CONSTRUCTION SCHEDULE;
  - .3 monitor the progress of the *Work* on a weekly basis relative to the *Baseline Schedule*, or any successor or revised schedule accepted by the *Owner* and the *Consultant* pursuant to General Condition 3.4 – CONSTRUCTION SCHEDULE, update the schedule on a bi-weekly basis and advise the *Consultant* and the *Owner* in writing of any variation from or slippage in the *Baseline Schedule* and, where appropriate, in relation to any alternate accepted schedule, using the format of the Three-Week Look-Ahead provided at the end of these Supplementary Conditions, ensuring that all sections of the form are complete with details and particulars to inform of the schedule changes; and
  - .4 if, after applying the expertise and resources required under subparagraph 3.4.1.2, the *Contractor* forms the opinion that the variation or slippage in schedule reported pursuant to subparagraph 3.4.1.3 cannot be recovered by the *Contractor*, it shall, in the same notice, indicate to the *Consultant* and the *Owner* if the *Contractor* intends to apply for an extension of *Contract Time* or to claim compensation for delay as provided in PART 6 of the General Conditions - CHANGES IN THE WORK.

**SC9.2 Paragraphs 3.4.2, 3.4.3, and 3.4.4:**

Add new paragraphs 3.4.2, 3.4.3, and 3.4.4 as follows:

3.4.2 - If at any time the *Owner* or the *Consultant* advise the *Contractor* that it appears that the actual progress of the *Work* is behind schedule or is likely to fall behind schedule, or if the *Contractor* has given notice of such to the *Owner* and the *Consultant* pursuant to subparagraph 3.4.1.3, the *Contractor* shall take appropriate steps, at the *Contractor's* own expense, to cause the actual progress of the *Work* to conform to the schedule or minimize any resulting delay, and shall produce and present to the *Owner* and the *Consultant*, for review and approval, a recovery plan demonstrating how the *Contractor* will achieve the recovery of the schedule.

3.4.3 - If after applying the expertise and resources required under paragraphs 3.4.1.2 and 3.4.2, the *Contractor* forms the opinion that the

slippage in the schedule cannot be recovered, it shall advise the *Owner* and the *Consultant* of any revisions required to the schedule and shall give timely *Notice in Writing* to the *Owner* and the *Consultant* if the *Contractor* intends to apply for an extension of *Contract Time*.

3.4.4 - The *Contractor* shall not amend the *Baseline Schedule* without the *Owner's* prior written consent. For greater clarity, any updated schedules the *Contractor* is required to provide to the *Consultant* or *Owner* as part of its obligations under this GC 3.4 – CONSTRUCTION SCHEDULE or GC 3.15 - CONTRACTOR'S MONTHLY REPORT shall not be deemed to modify or amend the accepted *Baseline Schedule* or modify or amend the *Contract Time*.

**SC10 GC 3.5 SUPERVISION**

**SC10.1 Paragraph 3.5.1:**

Add the words “and upon the *Contractor* obtaining the *Owner's* written consent, which consent will not be unreasonably withheld” after the word “reason” at the end of paragraph 3.5.1.

**SC10.2 Paragraph 3.5.3:**

Add new paragraph 3.5.3 as follows:

3.5.3 - The *Owner* may, at any time, for reasonable cause, object to the representative referred to in paragraph 3.5.1 and require the *Contractor* to dismiss and replace the said representative.

**SC11 GC 3.7 LABOUR AND PRODUCTS**

**SC11.1 Paragraph 3.7.3:**

Delete paragraph 3.7.3 and replace with new paragraph 3.7.3 as follows:

3.7.3 - Unless otherwise specified in the *Contract Documents*, *Products* provided shall be new and as specified. The *Contractor* shall not provide substitutions for specified *Products* without the express written consent of the *Consultant* and the *Owner*.

**SC11.2 Paragraphs 3.7.4 and 3.7.5:**

Add new paragraphs 3.7.4 and 3.7.5 as follows:

3.7.4 - The *Contractor* is responsible for the safe on-site storage of *Products* and their protection (including *Products* supplied by the *Owner* and *Other Contractors* to be installed under the *Contract*) in such ways as to avoid dangerous conditions or contamination to the *Products* or other persons or property and in locations at the *Place of the Work* to the satisfaction of the *Owner* and the *Consultant*. The *Owner* shall provide all relevant information on the *Products* to be supplied by the *Owner*.

3.7.5 - The *Contractor* represents and warrants that the *Products* provided for in accordance with the *Contract* are not subject to any conditional sales contract and are not subject to any security rights obtained by any third party which may subject any of the *Products* to seizure and/or removal from the *Place of the Work*.

**SC12 GC 3.8 SHOP DRAWINGS**

**SC12.1** Add the words "AND OTHER SUBMITTALS" to the Title after "SHOP DRAWINGS".

**SC12.2 Paragraphs 3.8.1, 3.8.2, 3.8.3, 3.8.3.2, 3.8.5, and 3.8.6:**

Add the words "and *Submittals*" after the words "*Shop Drawings*" in clauses 3.8.1, 3.8.2, 3.8.3, 3.8.3.2 (in the singular), 3.8.5 (on the second occasion, in the singular, i.e., "or *Submittal*"), and 3.8.6.

**SC12.3 Paragraph 3.8.1.1:**

Add a new paragraph 3.8.1.1 as follows:

Prior to the first application for payment, the *Contractor* and the *Consultant* shall jointly prepare a schedule of the dates for submission and return of *Shop Drawings* and any *Submittals*.

**SC12.4 Paragraph 3.8.2:**

Delete "an agreed schedule" and substitute with "a schedule as agreed under subparagraph 3.8.1.1" in the first line of paragraph 3.8.2.

**SC12.5 Paragraph 3.8.3:**

Delete "The" from the first sentence of paragraph 3.8.3 and substitute with: "Prior to the first application of payment, the.."

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Add the following after “shall” to the first line of paragraph 3.8.3: “provide *Shop Drawings* and *Submittals* in the form specified, or if not specified, as directed by the *Consultant*, and shall”.

Add the following after “*Contractor*” to the second sentence of paragraph 3.8.3: “shall indicate on the *Shop Drawings* and *Submittals* by stamp, date, and signature of the person responsible for the review that the *Contractor* has reviewed each one of them, and”

Add the following to the end of paragraph 3.8.3:

“*Shop Drawings* and *Submittals* which require approval of any legally constituted authority having jurisdiction shall be provided to such authority by the *Contractor* for approval.”

**SC12.6 Paragraph 3.8.6:**

Add the following to the end of paragraph 3.8.6:

“The *Contractor* shall provide revised *Shop Drawings* to correct those which the *Consultant* rejects as inconsistent with the *Contract Documents*, unless otherwise directed by the *Consultant*. The *Contractor* shall notify the *Consultant* in writing of any revisions to the *Shop Drawings* other than those requested by the *Consultant*.”

**SC12.7 Paragraph 3.8.7:**

Delete paragraph 3.8.7 in its entirety and substitute new paragraph 3.8.7 as follows:

3.8.7 - The *Consultant* will review and return *Shop Drawings* and *Submittals* in accordance with the schedule agreed upon in 3.8.1.1, or, in the absence of such schedule, by no later than ten (10) calendar days. If, for any reason, the *Consultant* cannot process them within the agreed-upon schedule or by no later than ten (10) calendar days, the *Consultant* shall notify the *Contractor* and they shall meet to review and arrive at an acceptable revised schedule for processing. The *Contractor* shall update the *Shop Drawings* and *Submittals* Schedule to correspond to changes in the construction schedule. Changes in the *Contract Price* or *Contract Time* may be made only as otherwise provided in the *Contract*.

**SC13 GC 3.9 DOCUMENT REVIEW**

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**SC13.1**     Add a new GC 3.9 DOCUMENT REVIEW as follows:

**GC 3.9 DOCUMENT REVIEW**

**Paragraph 3.9.1:**

3.9.1 - The *Contractor* shall review the *Contract Documents* and shall report promptly to the *Consultant* any error, inconsistency, or omission the *Contractor* may discover. Such review by the *Contractor* shall be undertaken with the standard of care described in paragraph 3.8.1 of the *Contract*. Except for its obligation to make such review and report the result, the *Contractor* does not assume any responsibility to the *Owner* or to the *Consultant* for the accuracy of the *Contract Documents*. The *Contractor* shall not be liable for damage or costs resulting from such errors, inconsistencies, or omissions in the *Contract Documents*, which the *Contractor* could not reasonably have discovered through the exercise of the required standard of care. If the *Contractor* does discover any error, inconsistency, or omission in the *Contract Documents*, the *Contractor* shall not proceed with the work affected until the *Contractor* has received corrected or missing information from the *Consultant*.

3.9.2 - The lack of reference on a drawing or in a specification to labour or products that are required or normally recognized within the applicable trade practice as being necessary for the complete execution of the *Work* shall not constitute an error, inconsistency or omission.

3.9.3 - The issuance of Requests for Information by the *Contractor* shall not entitle the *Contractor* to any increases to the Contract Price or Contract Time.

3.9.4 - If, at any time, the *Contractor* finds errors, inconsistencies, or omissions in the *Contract Documents* or has any doubt as to the meaning or intent of any part thereof, the *Contractor* shall immediately notify the *Consultant*, and request a *Supplemental Instruction*, *Change Order*, or *Change Directive*, as the case may require. Neither the *Owner* nor the *Consultant* will be responsible for the consequences of any action of the *Contractor* based on oral instructions.

**SC14**     **GC 3.10 USE OF THE WORK**

**SC14.1**     Add a new GC 3.10 USE OF THE WORK as follows:

**GC 3.10 USE OF THE WORK**

**Paragraph 3.10.1:**

3.10.1 - The *Contractor* shall confine *Construction Equipment*, *Temporary Work*, storage of *Products*, waste products and debris, and operations of employees and *Subcontractors* to limits indicated by laws, ordinances, permits, or the *Contract Documents* and shall not unreasonably encumber the *Place of the Work*.

**Paragraph 3.10.2:**

3.10.2 - The *Contractor* shall not load or permit to be loaded any part of the *Work* with a weight or force that will endanger the safety of the *Work*.

**SC15 GC 3.11 CLEANUP**

**SC15.1** Add a new GC 3.11 CLEANUP as follows:

**GC 3.11 CLEANUP**

**Paragraph 3.11.1:**

3.11.1 - The *Contractor* shall maintain the *Work* in a safe and tidy condition and free from the accumulation of waste products and debris, other than that caused by the *Owner*, *Other Contractors* or their employees.

**Paragraph 3.11.2:**

3.11.2 - Before applying for *Substantial Performance of the Work* as provided in GC 5.4 – SUBSTANTIAL PERFORMANCE OF THE WORK AND PAYMENT OF HOLDBACK, the *Contractor* shall remove waste products and debris, other than that resulting from the work of the *Owner*, *Other Contractors* or their employees, and shall leave the *Place of the Work* clean and suitable for use or occupancy by the *Owner*. The *Contractor* shall remove products, tools, *Construction Equipment*, and *Temporary Work* not required for the performance of the remaining work.

**Paragraph 3.11.3:**

3.11.3 - Prior to application for *Ready-for-Takeover*, the *Contractor* shall remove any remaining products, tools, *Construction Equipment*, *Temporary*



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*Work*, and waste products and debris, other than those resulting from the work of the *Owner*, *Other Contractors* or their employees.

**SC16 GC 3.12 PERFORMANCE BY CONTRACTOR**

**SC16.1** Add a new GC 3.12 PERFORMANCE BY CONTRACTOR as follows:

**GC 3.12 PERFORMANCE BY CONTRACTOR**

3.12.1 - In performing its services and obligations under the *Contract*, the *Contractor* shall exercise the standard of care, skill, and diligence that would normally be provided by an experienced and prudent contractor supplying similar services for similar projects. During the *Contract*, the *Contractor's* standard of care, skill and diligence includes, but is not limited to, carefully investigating the character of the *Work*, the *Place of the Work*, and all local conditions which might affect its obligations. The *Contractor* acknowledges and agrees that throughout the *Contract*, the performance of the *Contractor's* obligations, duties, and responsibilities shall be judged against the standard of care, skill, and diligence required of it. The *Contractor* also acknowledges and agrees and that it is not entitled to an adjustment to the *Contract Price* or to an extension of the *Contract Time* for conditions that could have been reasonably ascertained or inferred using this standard of care, skill and diligence. The *Contractor* shall exercise the same standard of care, skill, and diligence in respect of any *Products*, personnel, or procedures which it may recommend to the *Owner*.

3.12.2 - The *Contractor* further represents, covenants and warrants to the *Owner* that:

- .1 the personnel it assigns to the *Project* are appropriately experienced;
- .2 it has a sufficient staff of qualified and competent personnel to replace any of its appointed representatives, subject to the *Owner's* approval, in the event of death, incapacity, removal or resignation; and
- .3 there are no pending, threatened or anticipated claims that would have a material effect on the financial ability of the *Contractor* to perform its work under the *Contract*.

**SC 17 GC 3.13 INTERFERENCE**

**SC17.1** Add new GC 3.13 INTERFERENCE as follows:

**GC 3.13 INTERFERENCE**

3.13.1 - If the *Work*, in whole or in part, involves the renovation of, or addition to, existing and occupied premises:

- .1 the *Contractor* shall maintain normal business operations and traffic flow, with a minimum of inconvenience to the tenants and occupants of the *Place of the Work*;
- .2 subject to the provisions of the *Contract Documents*, the *Contractor* shall ensure that no essential services such as electric power, water supply or other public utilities are interrupted;
- .3 in every case where an interruption to existing services or utilities is to occur during execution of the *Work*, the *Contractor* shall give the *Owner* five *Working Days* prior written notice. The *Contractor* shall reschedule any such interruption, at no additional cost to the *Owner*, if requested to do so in writing by the *Owner*;
- .4 subject to work restrictions set out elsewhere in the *Contract Documents*, any work that generates excessive noise shall be carried out by the *Contractor* between the hours of 5:00 p.m. and 8:00 a.m. or on weekends and holidays as may be agreed upon between the *Contractor* and the *Owner*, subject to applicable by-laws; and
- .5 where applicable, the *Contractor* will be given a schedule of days or times during which *Work* is not permitted. In such cases, the *Contractor* must perform *Work* outside of these days and times, and remains responsible to achieve all targets and deadlines provided for in the *Contract Documents*.

**SC18** **GC 3.14 RIGHT OF ENTRY**

**SC18.1** Add new GC 3.14 RIGHT OF ENTRY as follows:

**GC 3.14 RIGHT OF ENTRY**

3.14.1 The *Owner* shall have the right to enter or occupy the *Place of the Work* in whole or in part for the purpose of placing materials, fittings and equipment or for other uses at any time before *Substantial Performance of the Work*, if, in the reasonable opinion of the *Consultant*, such entry or

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occupation does not prevent or substantially interfere with the *Contractor's* completion of the *Contract* or achieving *Substantial Performance of the Work* within the *Contract Time*. Such entry or occupation or use of equipment or systems shall not be considered as acceptance of the *Work* in whole or in part, or in any way relieve the *Contractor* from its responsibility to complete the *Contract*. The fact that the Owner has entered on to, occupied, or used all or part of the *Work* does not start the warranty period and does not mean that any of *Substantial Performance of the Work*, *Ready-for-Takeover*, or *Total Performance of the Work* are achieved. Attainment of any of *Substantial Performance of the Work*, *Ready-for-Takeover*, or *Total Performance of the Work* remains subject to the requirements otherwise set out in the *Contract Documents*.

**SC 19            GC 3.15 CONTRACTOR'S MONTHLY REPORTS**

**SC 19.1**        Add new GC 3.15 CONTRACTOR'S MONTHLY REPORTS as follows:

**GC 3.15 CONTRACTOR'S MONTHLY REPORTS**

3.15.1 - The *Contractor* shall prepare and deliver a monthly written report to the *Owner* and the *Consultant* (the "**Monthly Report**") which shall include:

- .1 an overview of the state and progress of the *Work*;
- .2 an update of the construction baseline schedule, including written confirmation that the *Work* is on schedule or, if the schedule has suffered slippage, include a recovery plan, in the format approved by the Owner, demonstrating how the *Contractor* will achieve recovery of the schedule;
- .3 a list of critical issues of which the *Contractor* is aware and which require resolution, including dates by which decisions are required and by whom;
- .4 proposed or anticipated changes of which the *Contractor* is aware, and their expected impacts on the *Project*, including the schedule;
- .5 the *Contractor's* proposed plan and schedule for repairing, correcting or reworking of any known defective work.
- .6 an update of Cash Flow Schedule shall be broken down by each element of the Schedule of Values, over each month of the Project. Schedule shall be presented to reflect projected amounts for each month as well as the actual amounts for the months where payments have been received;

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3.15.2 - The *Contractor* shall deliver the *Monthly Report* as part of its monthly application for payment.

**SC20 GC 4.1 CASH ALLOWANCES**

**SC20.1 Paragraph 4.1.8:**

Add new paragraph 4.1.8 as follows:

4.1.8 - The *Owner* reserves the right to call, or to have the *Contractor* call, for competitive bids for portions of the *Work* to be paid for from cash allowances.

**SC21 GC 5.1 FINANCING INFORMATION REQUIRED OF THE OWNER**

**SC21.1** Revise the heading, “**GC 5.1 FINANCING INFORMATION REQUIRED OF THE OWNER**” to read, “**GC 5.1 FINANCING INFORMATION REQUIRED**”.

**SC21.2 Paragraph 5.1.1:**

Delete paragraph 5.1.1 in its entirety and substitute new paragraph 5.1.1 as follows:

5.1.1 - The *Owner* and *Contractor* shall provide each other with timely *Notice in Writing* of any material change in their financial ability to fulfil their respective obligations under the *Contract*.

**SC21.3** Delete paragraph 5.1.2 in its entirety.

**SC22 GC 5.2 APPLICATIONS FOR PAYMENT**

**SC22.1 Paragraph 5.2.1:**

Add the following to the end of paragraph 5.2.1:

Each application for payment shall include the information required for a “Proper Invoice” in Section 6.1 of the *Construction Act* and the following information:

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- .1 a confirmation that a draft application for payment was submitted at least five Working Days prior to the date of submission of the application for payment in accordance with GC 5.2.9;
  - .2 a confirmation that the amounts claimed in such application for payment correspond to the schedule of values submitted in accordance with GC 5.2.4 and supporting documentation to support this confirmation including timesheets, packing slips for materials delivered, equipment rental costs, testing and inspection reports, permits and as-built drawings, as applicable, supporting documentation with respect to cash allowance expenditures and any other supporting documentation as the Consultant may direct in accordance with GC 5.2.8 and GC 5.2.9;
  - .3 separate line items setting out (i) the amount of the Warranty Reserve to be withheld from the payment calculated in accordance with GC 5.2.13; (ii) the amount of the required holdbacks under the Construction Act; and (iii) the amount the Owner has indicated it intends to set off from the payment in accordance with GC 5.2.14;
  - .4 a statutory declaration as required by GC 5.2.10;
  - .5 a Workplace Safety & Insurance Board Clearance Certificate;
  - .6 a construction schedule or revised construction schedule that meets the requirements of GC 3.4.1;
  - .7 any approved *Change Orders* and *Change Directives* related to the portion of the *Work* that is the subject of the application for payment;
  - .8 the information set out in the Proper Invoice Checklist;
  - .9 any insurance renewal certificates as required by GC 11.1.2;
  - .10 a confirmation that current red line *As-Built Drawings* are available on site for review in accordance with GC 5.2.12; and
  - .11 any other information required by the *Contract Documents* or as the *Consultant* may direct.
  - .12 the *Monthly Report* referred to in GC 3.15.1.

If an application for payment does not include all information required by this GC 5.2.1, if any of the required confirmations made by the *Contractor* in its application for payment are untrue or if the *Contractor* is otherwise in breach of this *Contract*, it shall not be considered a "Proper Invoice" for the purposes of the *Construction Act* or this *Contract*. If the *Owner* or the *Consultant* determine that an application for payment does not constitute a Proper Invoice, the application for payment shall be rejected through a *Notice of Non-Payment* and the *Contractor* shall resubmit the application for payment with all required information. For clarity, the *Owner* shall have no obligation to make a payment and the time periods set out in this GC 5.2 and in Section 6.4 of the *Construction Act* shall not apply until the

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*Contractor* has submitted an application for payment that constitutes a Proper Invoice.

**SC22.2 Paragraph 5.2.7:**

Add the words “and, if requested by the *Owner*, a Statutory Declaration from any *Subcontractor*, as may be identified by the *Owner*, on an original form of CCDC Document 9B – 2001 Statutory Declaration of Progress Payment Distribution by Subcontractor.” to the end of paragraph 5.2.7.

**SC22.3 Paragraph 5.2.8:**

Add the following to the end of paragraph 5.2.8:

Any *Products* delivered to the *Place of the Work* but not yet incorporated into the *Work* shall remain at the risk of the *Contractor* notwithstanding that title has passed to the *Owner* pursuant to General Condition 14.1 - OWNERSHIP OF MATERIALS.

**SC22.4 Paragraphs 5.2.9, 5.2.10, 5.2.11, 5.2.12, 5.2.13, 5.2.14, 5.2.15, 5.2.16, 5.2.17 and 5.2.18:**

Add new paragraphs 5.2.9, 5.2.10, 5.2.11, 5.2.12, 5.2.13, 5.2.14, 5.2.15, 5.2.16, 5.2.17 and 5.2.18 as follows:

5.2.9 - No later than five *Working Days* prior to the date of an application for payment, the *Contractor* shall submit to the *Consultant* a draft application for payment containing all information and drafts of all submittals required by GC 5.2.1. If the Consultant requires further evidence or supporting documentation, it shall direct the *Contractor* to include such information in its application for payment no later than three *Working Days* after receipt of a draft application for payment.

5.2.10 - The *Contractor* shall submit, with each application for progress payment after the first, a Statutory Declaration, on either an original form of CCDC Document 9A-2001 Statutory Declaration of Progress Payment Distribution by Contractor or a form provided by the *Owner*, stating that payments in connection with the *Work*, as noted in the Statutory Declaration, have been made to the end of the period immediately preceding that covered by the current application and, if requested by the *Owner*, a Statutory Declaration from any *Subcontractor*, as may be identified by the *Owner*, on an original form of CCDC Document 9B-2001 Statutory Declaration of Progress Payment Distribution by Subcontractor.

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The Statutory Declarations shall be dated the same date as the *Contractor's* application for payment.

5.2.11 - Where the *Contractor* is required to perform start-up testing and/or commissioning activities in respect of a portion of the *Work*, an application for payment in respect of such portion of the *Work* may only be submitted once such testing and/or commissioning has been successfully completed by the *Contractor* as determined by the *Consultant*, including the submission of any related documentation. For clarity, an application for payment submitted prior to successful completion of required testing and/or commissioning shall not be considered a Proper Invoice and the *Consultant* shall not issue a certificate of payment in respect of such application for payment.

5.2.12 - The *Contractor* shall prepare *As-Built Drawings* during the course of the *Work*, which shall be updated as required. Current red line *As-Built Drawings* shall be maintained by the *Contractor* on site and made available to the *Consultant* for review with each application for progress payment. For clarity, if the *Contractor* submits an application for payment when current red line *As-Built Drawings* are not available on site for review at the time of submission, such application for payment shall not be considered a Proper Invoice and the *Consultant* shall not issue a certificate of payment in respect of such application for payment.

5.2.13 - The *Owner* shall be entitled to deduct and withhold from each progress payment an amount as specified below to an aggregate maximum amount of the *Contract Price* as specified below to be held and administered by the *Owner* separately from the statutory holdback under the *Construction Act*.

The *Contract Price* shall provide the basis for the following *Warranty Reserve* as follows:

Contract Price	Warranty Reserve (withheld from each progress payment)	Warranty Reserve Aggregate Maximum Amount
\$0 to \$4,999,999.99	2.5 %	2.5%
\$5,000,000.00 to \$9,999,999.99	2%	2%
Greater than \$10,000,000.00	1.5%	1.5%

The *Warranty Reserve*, net of claims by the *Owner* and others, as provided in the *Contract Documents*, shall be paid to the *Contractor* at the time of

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*Total Performance of the Work*, but not before the expiration of the one (1) year warranty period set out in GC 12.3 WARRANTY, whichever comes later. The *Warranty Reserve* shall be in addition to the required holdbacks under the *Construction Act*.

5.2.14 - If the *Owner* intends to exercise its right of set off pursuant to SA 5.3 against a future payment, the *Owner* shall provide notice to the *Contractor*. Provided the *Contractor* receives such notice at least 5 Business Days prior to its submission of an application for payment, it shall include a separate line item setting out the amount the *Owner* has indicated it intends to set off from the payment.

5.2.15 - Applications for payment shall be submitted to the *Owner's* online invoice submittal portal in accordance with the instructions provided by the *Owner*. The date of the application for payment shall be the date it is received in the online portal. For clarity, an application for payment submitted by any other means shall not be considered a "Proper Invoice" for the purposes of the *Construction Act* or this *Contract* and the *Consultant* shall not issue a certificate of payment in respect of such application for payment.

5.2.16 - No later than ten (10) calendar days following the date of this *Contract*, the *Contractor* shall submit to the *Consultant*, for its review and approval, a sample application for payment that meets the requirements set out in GC 5.2.1.

**SC23 GC 5.3 PAYMENT**

**SC23.1 Paragraph 5.3.1.1:**

Delete subparagraph 5.3.1.1 in its entirety and substitute new subparagraph 5.3.1.1 as follows:

5.3.1.1 - If the *Owner* intends to issue payment for an amount less than the full amount stated on the application for payment, the *Owner* will issue a *Notice of Non-Payment* in respect of the disputed amount no later than 14 calendar days after the receipt of the application for payment.

**SC23.2 Paragraph 5.3.1.2:**

Delete subparagraph 5.3.1.2 in its entirety and substitute new subparagraph 5.3.1.2 as follows:



5.3.1.2 - The *Owner* shall make payment to the *Contractor* on account as provided in Article A-5 of the *Agreement* - PAYMENT in the amount equal to the undisputed amount of the application for payment on or before the day that is 28 calendar days following receipt of the application for payment.

**SC23.3 Paragraph 5.3.2:**

Add new paragraph 5.3.2 as follows:

5.3.2 - Certificates for payment may provide for retention of amounts as determined by the *Consultant* to ensure correction of deficient work done or unacceptable *Products* provided.

**SC24 GC 5.4 SUBSTANTIAL PERFORMANCE OF THE WORK AND PAYMENT OF HOLDBACK**

**SC24.1 Paragraph 5.4.2:**

Delete paragraph 5.4.2 in its entirety and substitute new paragraph 5.4.2 as follows:

5.4.2 - Within 7 calendar days of receiving a copy of the certificate of *Substantial Performance of the Work* signed by the *Consultant*, the *Contractor* shall publish a copy of the certificate in a construction trade newspaper (as that term is defined in the *Construction Act*) and shall provide to the *Consultant* and the *Owner* the date of publication and the name of the construction trade newspaper in which the publication occurred. If the *Contractor* fails to comply with this provision, the *Owner* may publish a copy of the certificate and charge the *Contractor* with the costs so incurred.

**SC24.2 Paragraphs 5.4.7, 5.4.8, 5.4.9, and 5.4.10:**

Add new paragraphs 5.4.7, 5.4.8, 5.4.9, and 5.4.10 as follows:

5.4.7 - Prior to submitting its written application for *Substantial Performance of the Work*, the *Contractor* shall submit to the *Consultant* all:

- .1 guarantees;
- .2 warranties;
- .3 certificates;
- .4 testing and balancing reports;
- .5 distribution system diagrams;

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- .6 spare parts;
  - .7 maintenance and operational manuals;
  - .8 samples;
  - .9 existing reports and correspondence from authorities having jurisdiction in the Place of the Work;
  - .10 a copy of all shop drawings that were processed under GC 3.8 showing all notations and amendments made by the *Contractor* and the Consultant;
  - .11 all start-up and commissioning reports;

and other materials or documentation required to be submitted under the *Contract*, together with written proof acceptable to the *Owner* and the *Consultant* that the *Work* has been substantially performed in conformance with the requirements of municipal, governmental, and utility authorities having jurisdiction in the *Place of the Work*.

5.4.8 - Where the *Contractor* is unable to deliver the documents and materials described in paragraph 5.4.7, then, provided that none of the missing documents and materials interferes with the use and occupancy of the *Project* in a material way, the failure to deliver shall not be grounds for the *Consultant* to refuse to certify *Substantial Performance of the Work*. Any documents or materials not delivered in accordance with paragraph 5.4.7 shall be delivered as provided in GC 5.5, paragraph 5.5.1.

5.4.9 - Together with the submission of its written application for *Substantial Performance of the Work*, the *Contractor* shall submit to the *Consultant* and to the *Owner* a statutory declaration setting forth in reasonable detail any then outstanding and unresolved disputes or claims between the *Contractor* and any *Subcontractor* or *Supplier*, including any claims allegedly arising from delay, which are, directly or indirectly, related to any then outstanding or anticipated disputes or claims between the *Contractor* and the *Owner*, and this disclosure shall, at a minimum:

- .1 identify the parties involved;
- .2 identify the amount in dispute;
- .3 provide a brief statement summarizing the position of each party;

- 
- .4 include copies of any correspondence or documents in support of either party's position;
  - .5 include copies of any documents of any court or arbitration process related to the matter;
  - .6 identify the dispute or claim between the *Contractor* and the *Owner* to which the matter relates, if any; and
  - .7 include a copy of any written agreement or a summary of any oral agreement between the parties related to resolution of the matter.

The *Contractor* expressly acknowledges that the submission of the aforesaid complete statutory declaration is a condition precedent to the *Contractor* receiving payment from the *Owner* of any amount pertaining to any claim or dispute referred to in this paragraph, and that the *Contractor* shall not be entitled to recover from the *Owner* any amount pertaining to any claim or dispute referred to in this paragraph, if the provisions of this paragraph have not been fully complied with. For greater certainty, the *Contractor* is not obliged to make the aforementioned disclosure with respect to any dispute or claim that is not related to or does not touch upon any unresolved dispute or claim between the *Contractor* and the *Owner*.

5.4.10 - For early release of holdback on the work of a *Subcontractor* or *Supplier* which is 100% complete, the *Contractor* shall make application by written request to the *Consultant* for a review to determine the date of completion of the subcontract and shall submit such supporting material as the *Consultant* may in its discretion require, which may include statutory declarations from such persons and dealing with such matters as the *Consultant* requires. Such material shall in any event include:

- .1 Description of the scope of work included in the subcontract;
- .2 Declaration of Last Supply by the *Subcontractor* as prescribed in subsection 31(5) of the *Construction Act* (Form 5);
- .3 Certificate of Completion of Subcontract completed by the *Consultant* as prescribed in subsection 33(1) of the *Act* (Form 7);
- .4 Workplace Safety and Insurance Board clearance certificate for the *Contractor*, and the *Subcontractor* concerned;
- .5 Statutory Declaration by an officer of the *Subcontractor* on an original form of CCDC Document 9B – 2001 Statutory Declaration of

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Progress Payment Distribution by Subcontractor and setting out the date when the subcontract was totally performed;

- .6 *Contractor's* written acknowledgement to the *Owner* that the requirements of the *Contract Documents* will not be altered by early release of the holdback of the completed subcontracts.

**SC25 GC 5.5 FINAL PAYMENT**

**SC25.1 GC 5.5:**

Delete the title of **GC 5.5 FINAL PAYMENT** and replace with:

**“GC 5.5 PAYMENT AT THE TIME OF READY-FOR-TAKEOVER AND FINAL PAYMENT”**

**SC25.2 Paragraph 5.5.1:**

Delete paragraph 5.5.1 in its entirety and substitute new paragraph 5.5.1 as follows:

5.5.1 - When the *Contractor* considers that the *Work* is *Ready-for-Takeover* or has been totally performed, the *Contractor* shall submit a written application for review by the *Consultant* to establish *Ready-for-Takeover* or *Total Performance of the Work* as appropriate. The application for *Ready-for-Takeover* shall be accompanied by any documents or materials required by GC 12.1.1 and 12.1.3. The application for *Total Performance of the Work* shall be accompanied by any documents or materials not yet delivered pursuant to paragraph 5.4.7, 12.1.1, and 12.1.3, together with complete *As-Built Drawings*. Should the *Contractor* fail to deliver any of the foregoing documents, or the documents and items otherwise required for either *Ready-for-Takeover* or *Total Performance of the Work*, whichever is applicable, the *Owner* shall be at liberty to withhold from amounts otherwise payable to the *Contractor* the amount specified in the following *Scale of Holdback* as security for the obligation of the *Contractor* to deliver the undelivered documents. The *Contractor* shall have no right to receive payment of the amount so withheld until such time as all required documents and materials referenced in paragraph 5.4.7 have been delivered. The *Owner* shall notify the *Contractor* of the amount of the holdback it intends to withhold in accordance with this GC 5.5.1.

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**Scale of Holdback:**

- where the *Contract Price* is less than \$100,000 the amount to be retained is \$5,000
- where the *Contract Price* is greater than \$100,000 but less than \$500,000, the amount to be retained is 5% of the *Contract Price*
- where the *Contract Price* is greater than \$500,000 but less than \$5,000,000, the amount to be retained is 3% of the *Contract Price*
- where the *Contract Price* is greater than \$5,000,000, the amount to be retained is 2% of the *Contract Price*.

**SC25.3 Paragraph 5.5.2:**

Delete paragraph 5.5.2 in its entirety and substitute new paragraph 5.5.2 as follows:

No earlier than twenty (20) Working Days following submission of the *Contractor's* application to establish *Total Performance of the Work* in accordance with GC 5.5.1, the Contractor shall submit an application for final payment. The *Contractor's* application for final payment shall include all requirements for an application for payment as set out in GC 5.2.1 and shall include a separate line item setting out the amount of the amount of the holdback to be retained by the *Owner* pursuant to GC 5.5.1.

**SC25.4 Paragraph 5.5.3:**

Delete paragraph 5.5.3 in its entirety and substitute new paragraph 5.5.3 as follows:

The *Consultant* will issue to the *Owner* with a copy to the *Contractor*, no later than five (5) *Working Days* after the receipt of the application for final payment, a certificate for payment in the amount applied for, or in such other amount as the *Consultant* determines to be properly due and will state the date of *Total Performance of the Work* in a certificate. If the *Consultant* issues a certificate for payment for an amount less than the full amount stated on the application for final payment or does not issue a certificate for payment, the *Owner* will issue a *Notice of Non-Payment* in respect of the disputed amount.

**SC25.5 Paragraph 5.5.4:**

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Delete paragraph 5.5.4 in its entirety and substitute new paragraph 5.5.4 as follows:

Subject to the provision of paragraph 10.4.1 of GC 10.4 - WORKERS' COMPENSATION, and any lien legislation applicable to the *Place of the Work*, the *Owner* shall make payment to the *Contractor* on account as provided in Article A-5 of the Agreement - PAYMENT in the amount set out in the certificate for payment on or before the day that is 28 calendar days following receipt of the application for final payment.

**SC25.6 Paragraph 5.5.5:**

Add a new paragraph 5.5.5 as follows:

5.5.5 - Prior to the release of the finishing holdback provided for under the *Construction Act*, the *Contractor* shall submit:

- .1 *Contractor's* written request for release of the finishing holdback, including a statement that no written notices of lien have been received by it;
- .2 a Statutory Declaration on either an original form of CCDC Document 9A-2001 Statutory Declaration and CCDC Document 9B-2001 Statutory Declaration or a form provided by the *Owner* stating that payments in connection with the *Work*, as noted in the Statutory Declaration, have been made in full up to the end of the period immediately preceding that covered by the application for release of the finishing holdback;
- .3 a final Workplace Safety & Insurance Board Clearance Certificate.

**SC25.7 Add a new paragraph 5.5.6 as follows:**

5.5.6 - A deficiency fund may be retained by the *Owner* to secure the correction of deficiencies, the amount of such deficiency fund to be based on the *Consultant's* reasonable estimate of the cost of correcting deficient items. The *Owner* may, in its sole discretion, as of right, and without invalidating the *Contractor's* warranty obligations, complete or correct any or all deficient items, and may draw from the deficiency fund to pay for its costs, expenses, and labour charges of doing such work. If the *Owner's* draw from the deficiency fund in this regard exceeds the amount of the retained deficiency fund, the *Owner* can claim this excess amount from the *Contractor* or set off the excess amount from other amounts otherwise due to the *Contractor*.

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**SC26 GC 5.8 RIGHT TO DISPUTE AMOUNTS**

**SC26.1** Add a new GC 5.8 RIGHT TO DISPUTE AMOUNTS and a new paragraph 5.8.1 as follows:

5.8.1 - The *Owner* may, in its sole discretion, pay amounts to the *Contractor* that have not been certified by the *Consultant* for any reason. Any payment by the *Owner* shall not constitute acceptance by the *Owner* of any amounts set out in an application for payment. The *Owner* reserves the right to dispute any amounts set out in an application for payment at any time during the *Contract Time*, whether or not it has previously made a payment in respect of such amounts.

**SC27 GC 6.1 OWNER'S RIGHT TO MAKE CHANGES**

**SC27.1** **Paragraphs 6.1.3, 6.1.4 and 6.1.5:**

Add a new paragraph 6.1.3, 6.1.4 and 6.1.5 as follows:

6.1.3 - No changes in the *Work* shall proceed without a written *Change Order* or *Change Directive* signed by the *Owner* and no claim for any change in the *Contract Price* or for any extension or alteration of the *Contract Time* shall be valid except as shown on the *Change Order* or *Change Directive*, as the case may be. No course of conduct or dealing between the parties, no express or implied acceptance of alterations or additions to the *Work* and no claim that the *Owner* has been unjustly enriched by any alteration or addition to the *Work*, whether in fact there is any such unjust enrichment or not, shall be the basis of a claim for payment under this *Contract* or any extension of the *Contract Time* without a *Change Order* or *Change Directive*. For greater certainty, the *Owner* shall not be required to make any payment to the *Contractor* in respect of changes in the *Work* that are not the subject of a written *Change Order* or *Change Directive* signed by the *Owner*, and the *Contractor* shall not be entitled to receive any additional compensation, including, without limitation, any compensation claimed for delay, arising out of changes to the *Work* other than the amounts determined and agreed to under GC 6.2 – CHANGE ORDER, or as provided in GC 6.3 – CHANGE DIRECTIVE.

6.1.4 - For the purpose of valuing expenditures under cash allowances pursuant to paragraph 4.1.4, expenditures under the contingency allowance pursuant to paragraph 4.2.2, changes which result in an increase in the *Contract Price*, and any other items under the *Contract Documents* which provide for payment to the *Contractor* of overhead and profit, allowances

for overhead and profit shall be included in the percentages set out in subparagraph 6.2.3.3(3).

6.1.5 - The *Contractor's* percentage fee mark-up on changes is intended to cover all general expenses and overhead costs incurred by the *Contractor* in relation to the change. For greater certainty, the following items of cost to the *Contractor* in relation to any changes are covered by and included in the *Contractor's* overhead and profit percentage fee mark-up on changes:

- .1 project management costs;
- .2 estimating, site supervision, safety, preparation of *As-built Drawings*, coordination and administration costs;
- .3 warranty costs;
- .4 bonding and insurance costs;
- .5 general clean-up and disposal costs.

**SC28 GC 6.2 CHANGE ORDER**

**SC28.1 Paragraph 6.2.3:**

Add new paragraph 6.2.3 as follows:

6.2.3 The method of adjustment of the *Contract Price* presented by the *Contractor* may be:

.1 by quotation and acceptance of a lump sum. All quotations must contain an itemized and complete breakdown of costs, including hours and hourly rates of labour, payroll burden, itemized costs of materials, quantity of materials, *Products*, and all other costs to perform the change in the *Work*, including the *Contractor's* mark-up fee set out in the table below, such that the quotations are capable of being evaluated by the *Consultant*. The *Contractor* shall require *Subcontractors* and *Suppliers* to supply similar information to the *Consultant*.

.2 by unit prices set out in the Schedule of Prices listed in Article A-3 – CONTRACT DOCUMENTS or subsequently agreed upon in writing by the parties. Unit prices shall include materials, labour, equipment, delivery, freight, handling, disposal, statutory charges, supervisions, testing, all applicable duties, brokerage charges, import charges, taxes, bonding, overhead, profit and all relative charges and expenses including, but not



limited to, office administration charges such as disbursements, travel costs, printing and incidentals to the *Contractor*, and shall be the total cost to the *Owner*. Adjustment to the *Contract Price* shall be based on a net quantity difference from the original quantity.

.3 by the amount, net of all credits, of time, materials, *Construction Equipment* and *Products* expended:

- (1) by a *Subcontractor* applying its labour charge out rates, together with the actual costs, without mark-up, of materials, *Construction Equipment* and *Products* utilized in the change, plus the *Subcontractor's* mark-up fee set out in the table below, which shall be applied to material and *Product* costs only;
- (2) by the *Contractor* applying its labour charge out rates, together with the actual costs, without contractor's mark-up, of materials, *Construction Equipment* and *Products* plus the mark-up fee set out in the table below which shall be applied to material, *Construction Equipment* and *Product* costs only;
- (3) the *Contractor* shall be entitled to the *Contractor* mark-up fee in the table below on the value of *Subcontractor* work even where the *Subcontractor* is not entitled to a mark-up fee on its labour charge out rates pursuant to paragraph 6.2.3.3(1).

Value of Change Order	<i>Subcontractor</i> and <i>Contractor's</i> Own Forces Mark-Up Fee (%) (includes overhead and profit)	<i>Contractor</i> Mark-up Fee (%) on <i>Subcontractor's</i> work (includes overhead and profit)
\$0 - \$49,999.99	5	5
Over \$50,000.00	5	3

.4 the aforesaid *Subcontractor* and *Contractor's* percentage fee mark-ups include all necessary supervision, general account items, general clean-up, small tools, as-built drawings and job safety necessary to perform the change.

.5 the *Contractor's* fee, or mark-up, inclusive of overhead and profit, is understood to include, without limitation, COVID-19 measures in accordance with GC 9.4 – CONSTRUCTION SAFETY.

## SC29

## GC 6.3 CHANGE DIRECTIVE

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**SC29.1 Paragraph 6.3.6.3:**

Delete the words “the *Contract Documents* or as otherwise agreed by the parties” and substitute the words “paragraph 6.2.3” in paragraph 6.3.6.3.

**SC29.2 Paragraph 6.3.7.1 (2):**

Delete from subparagraph 6.3.7.1(2) the words “when stationed at the field office” and substitute with the following:

“carrying out the work, including necessary supervisory services”

**SC29.3 Paragraph 6.3.7.1(3):**

Delete subparagraph 6.3.7.1(3) in its entirety.

**SC29.4 Paragraph 6.3.7.1(4):**

Add to subparagraph 6.3.7.1(4) after “personnel engaged” the following:

“in the preparation of *Shop Drawings*, fabrication drawings, coordination drawings and *As-Built Drawings*, or”

**SC29.5 Paragraph 6.3.7.17:**

Delete subparagraph 6.3.7.17 in its entirety.

**SC29.6 Paragraph 6.3.7.18:**

Add to the beginning of subparagraph 6.3.7.18 the following: “subject to PSSC 4 – RIGHT TO AUDIT,”

**SC30 GC 6.4 CONCEALED OR UNKNOWN CONDITIONS**

**SC30.1 Paragraph 6.4.4:**

Add the following to the end of paragraph 6.4.4: “or GC 14.7 – EXCESS SOIL, as applicable.”

**SC30.2 Paragraphs 6.4.5, 6.4.6 and 6.4.7:**

Add new paragraphs 6.4.5, 6.4.6 and 6.4.7 as follows:

6.4.5 - If the *Contractor* was given access to the *Place of the Work* prior to the submission of the bid on which the *Contract* was awarded, then the *Contractor* confirms that it carefully investigated the character of the *Work*, the *Place of the Work* and all local conditions which might affect its obligations and that it has satisfied itself as to the nature and extent of the *Work*, the *Contract Documents* and the *Contract* and as to the facilities and difficulties in attending and completing the execution of the *Work*. The *Contractor* confirms that it has applied to its investigation the degree of care and skill required by paragraph 3.12.1. In those circumstances, notwithstanding the provisions of paragraph 6.4.2, the *Contractor* is not entitled to an adjustment to the *Contract Price* or to an extension of the *Contract Time* for conditions which could reasonably have been ascertained by the *Contractor* by such careful investigation, or which could have been reasonably inferred from the material provided with the *Contract Documents*. In those circumstances, should a claim arise, the *Contractor* will have the burden of establishing that it could not have discovered the materially different conditions from a careful investigation, because of restrictions placed on its access or inferred the existence of the conditions from the material provided with the *Contract Documents*.

6.4.6 - To the extent the *Contractor* has not investigated as referenced in paragraph 6.4.5, the *Contractor* willingly assumes responsibility for all losses, damages, costs, expenses (including all legal costs on a full indemnity basis), liabilities, claims, actions, and demands, whether arising under statute, contract or at common law, which such investigations might have avoided or reduced and shall indemnify and save harmless the *Owner* from all risk which might make it more onerous and more expensive to fulfill or perform the *Work* than was contemplated or known when the *Contract* was signed, and for any and all liability, responsibility and obligations which the *Owner* may have to any third parties resulting from any failure to investigate.

6.4.7 - If the finding made pursuant to paragraph 6.4.2 is that the subsurface or otherwise concealed physical conditions differ materially and this would cause an increase or decrease in the *Contractor's* cost or time to perform the *Work*, and if the said conditions were otherwise discoverable by the *Contractor* in the proper performance of its duties and obligations under the *Contract*, all costs and expenses resulting from any delay (excluding, for clarity, the direct cost of remediating the said conditions) in the completion of the *Work* that is caused, or contributed to, as a result of the said conditions, will be borne by the *Contractor*.

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**SC31 GC 6.5 DELAYS**

**SC31.1 Paragraph 6.5.1:**

Delete the period at the end of paragraph 6.5.1, and substitute the following words:

“, but excluding any consequential, incidental, indirect or special damages including, without limitation, loss of profits, loss of opportunity or loss of productivity resulting from such delay.”

**SC31.2 Paragraph 6.5.2:**

Delete the period at the end of paragraph 6.5.2, and substitute the following words:

“, but excluding any consequential, incidental indirect or special damages including, without limitation, loss of profit, loss of opportunity or loss of productivity resulting from such delay.”

**SC31.3 Paragraph 6.5.3:**

Delete “If” at the beginning of paragraph 6.5.3 and substitute with the following words:

“Subject to paragraph 6.5.7, if”

**SC31.4 Paragraph 6.5.4:**

Add the words “compensation for delay shall be paid to the *Contractor*, and no” after the word “No” at the beginning of paragraph 6.5.4.

**SC31.5 Paragraph 6.5.6:**

Add new paragraph 6.5.6 as follows:

6.5.6 - If the *Contractor* is delayed in the performance of the *Work* by an act or omission of the *Contractor*, any *Subcontractor* or *Supplier*, or anyone employed or engaged by them, directly or indirectly, or by any cause within the *Contractor’s* control, the *Contractor* shall devote such additional resources and take all steps necessary, all at the *Contractor’s* own cost and expense, to ensure that the dates for attaining *Substantial Performance of the Work*, *Ready-for-Takeover*, and *Total Performance of the Work* under the *Contract* as may have been amended in accordance with the provisions

of Part 6 of the General Conditions – CHANGES IN THE WORK, are met. If the *Contractor* fails to attain *Substantial Performance of the Work, Ready-for-Takeover*, or *Total Performance of the Work* as aforesaid, the *Owner* shall be reimbursed by the *Contractor* for all reasonable costs, damages and expenses incurred by the *Owner* as the result of any such failure, including, but not limited to, the cost of all additional services required by the *Owner* from the *Consultant* or any subconsultants, project managers, or others employed or engaged by the *Owner*.

**SC31.6 Paragraph 6.5.7:**

Add new paragraph 6.5.7 as follows:

6.5.7 - For greater certainty, the *Contractor* shall not be entitled to compensation for delay, an extension of *Contract Time* or an increase to the *Contract Price* as a result of COVID-19 and related measures, including, but not limited to, compliance with any orders or policies. For reference, see GC 9.4 – CONSTRUCTION SAFETY, and GC 6.2.3.5.

**SC32 GC 7.1 OWNER'S RIGHT TO PERFORM THE WORK, TERMINATE THE CONTRACTOR'S RIGHT TO CONTINUE WITH THE WORK OR TERMINATE THE CONTRACT**

**SC32.1 GC 7.1**

Add the words “**SUSPEND OR**” after the word “**WORK**,” in the first line of the heading for GC 7.1.

**GC 7.1 OWNER'S RIGHT TO PERFORM THE WORK, SUSPEND OR TERMINATE THE CONTRACTOR'S RIGHT TO CONTINUE WITH THE WORK OR TERMINATE THE CONTRACT**

**SC32.2 Paragraph 7.1.2:**

Delete both instances of the words "to a substantial degree" in paragraph 7.1.2 and substitute both instances with the words "in a material way".

**SC32.3 Paragraphs 7.1.7, 7.1.8, 7.1.9, 7.1.10, 7.1.11, 7.1.12, 7.1.13 and 7.1.14:**

Add new paragraphs 7.1.7, 7.1.8, 7.1.9, 7.1.10, 7.1.11, 7.1.12, 7.1.13 and 7.1.14 as follows:

7.1.7 - The *Owner* may, if conditions arise which make it necessary for reasons other than as provided in paragraphs 7.1.1 and 7.1.4, suspend

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performance of the *Work*, terminate the *Contractor's* right to continue with the *Work* or terminate the *Contract*, in whole or in part, by giving *Notice in Writing* to that effect to the *Contractor*. Such suspension or termination shall be effective in the manner specified in said notice and shall be without prejudice to any claims which either party may have against the other. The *Owner's* entitlement to so terminate or suspend shall be absolute and unconditional and exercisable by the *Owner* in its sole discretion.

7.1.8 - The *Contractor* upon receiving notice of suspension or termination from the *Owner* shall suspend all operations as soon as reasonably possible except for work which, in the *Contractor's* opinion, is necessary for the safety of personnel and for the care and preservation of the *Work*, the materials and plant. Subject to any directions in the notice of suspension or termination, the *Contractor* shall discontinue ordering materials, facilities, and supplies and make every reasonable effort to delay delivery of existing orders and, in the event of termination, to cancel existing orders on the best terms available.

7.1.9 - During any period of suspension, the *Contractor* shall not remove from the site any part of the *Work*, or any *Product* or materials without the consent of the *Owner*.

7.1.10 - If the *Work* should be suspended for a period of 60 consecutive calendar days or less, the *Contractor*, upon the expiration of the period of suspension, shall resume the performance of the *Work* in accordance with the *Contract Documents*. If the suspension was not due to an act or omission of the *Contractor*, the *Contract Price* and *Contract Time* shall be adjusted as provided in paragraph 6.5.1 of GC 6.5 DELAYS.

7.1.11 - If after 60 consecutive calendar days from the date of notice of suspension of the *Work*, the *Owner* and the *Contractor* agree to continue with and complete the *Work*, the *Contractor* shall resume operations and complete the *Work* in accordance with any terms and conditions agreed upon by the *Owner* and the *Contractor*. Failing such an agreement, the provisions of paragraph 7.2.2 shall become applicable.

7.1.12 - If the *Owner* terminates the *Contract* pursuant to paragraph 7.1.7, the *Contractor* shall only be entitled to receive payment for all work performed up to the date of termination as certified by the *Consultant* and the direct costs associated with the termination incurred by the *Contractor*, including the costs of the demobilization, losses sustained on *Products* and *Construction Equipment* and *Subcontractor* and sub-subcontractor cancellation costs (which costs shall not include loss of profit claims) reasonably incurred by the *Contractor*. The *Contractor* shall not be entitled

to any additional reimbursement on account of the termination including, without limitation, indirect, incidental, special, consequential or other damages, including loss of profits, notwithstanding any other provision of the *Contract Documents*.

7.1.13 - In the case of either a termination of the *Contract* or a suspension of the *Work* under General Condition 7.1 - OWNER'S RIGHT TO PERFORM THE WORK, TERMINATE THE CONTRACTOR'S RIGHT TO CONTINUE WITH THE WORK, SUSPEND THE WORK OR TERMINATE THE CONTRACT or General Condition 7.2 - CONTRACTOR'S RIGHT TO SUSPEND THE WORK OR TERMINATE THE CONTRACT, the *Contractor* shall use its best commercial efforts to mitigate the financial consequences to the *Owner* arising out of the termination or suspension, as the case may be.

7.1.14 - Upon the resumption of the *Work* following a suspension under General Condition 7.1 - OWNER'S RIGHT TO PERFORM THE WORK, TERMINATE THE CONTRACTOR'S RIGHT TO CONTINUE WITH THE WORK, SUSPEND THE WORK OR TERMINATE THE CONTRACT or General Condition 7.2 - CONTRACTOR'S RIGHT TO SUSPEND THE WORK OR TERMINATE THE CONTRACT, the *Contractor* will endeavour to minimize the delay and financial consequences arising out of the suspension.

**SC33 GC 7.2 CONTRACTOR'S RIGHT TO SUSPEND THE WORK OR TERMINATE THE CONTRACT**

**SC33.1 Paragraph 7.2.2:**

Delete the words "20 Working Days" and substitute the words "60 consecutive calendar days" in the first line of paragraph 7.2.2.

**SC33.2 Paragraph 7.2.3.1:**

Delete subparagraph 7.2.3.1 in its entirety.

**SC33.3 Paragraph 7.2.3.3:**

Delete subparagraph 7.2.3.3 in its entirety and substitute new subparagraph 7.2.3.3 as follows:

7.2.3.3 - the *Owner* fails to pay the *Contractor* when due the amounts certified by the *Consultant* or awarded by adjudication, arbitration or a court, except where the *Owner* has a bona fide claim for set off, or

**SC33.4 Paragraph 7.2.3.4:**

Delete from subparagraph 7.2.3.4, the words:

", except for GC 5.1 - FINANCING INFORMATION REQUIRED OF THE OWNER,"

**SC33.5 Paragraph 7.2.5:**

Delete paragraph 7.2.5 in its entirety and substitute the following:

7.2.5 - If the *Contractor* terminates the *Contract* by giving a *Notice in Writing* under the conditions set out above, the *Contractor* shall be entitled to be paid for all work performed to the date of termination. The *Contractor* shall also be entitled to recover the direct costs associated with termination, including the costs of demobilization, and losses sustained on *Products* and *Construction Equipment*. The *Contractor* shall not be entitled to any additional reimbursement on account of any such termination including, without limitation, indirect, incidental, special, consequential or other damages, including loss of profits, notwithstanding any other provision of the *Contract Documents*.

**SC33.6 Paragraph 7.2.6:**

Add new paragraph 7.2.6 as follows:

7.2.6 - The *Owner's* withholding of a progress payment, holdback payment or final payment due to the *Contractor's* failure to pay a *Subcontractor* or *Supplier*, to protect the *Owner's* interest in the event of the preservation of a lien or receipt of notice of lien, or otherwise pursuant to the terms of the *Contract*, shall not constitute a default under paragraph 7.2.3 which would permit the *Contractor* to stop the *Work* or terminate the *Contract*. In such circumstances, the *Contractor* shall continue with the *Work*.

**SC33.7 Paragraph 7.2.7:**

Add new paragraph 7.2.7 as follows:

7.2.7 - If the *Contractor* stops the *Work* or terminates the *Contract* in accordance with this GC 7.2 – CONTRACTOR'S RIGHT TO SUSPEND THE WORK OR TERMINATE THE CONTRACT, the *Contractor* shall leave the *Place of the Work* and the *Work* in a secure condition.



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**SC34 GC 7.3 ASSIGNMENT OF SUBCONTRACTS ON TERMINATION**

**SC34.1** Add new **GC 7.3 ASSIGNMENT OF SUBCONTRACTS ON TERMINATION** as follows:

**GC 7.3 ASSIGNMENT OF SUBCONTRACTS ON TERMINATION**

7.3.1 - The Owner shall not be deemed by virtue of the Contract or for any other reason to have any contractual relationship with or obligation to any Subcontractor or Supplier but the Contractor hereby agrees that in the event that this Contract is terminated or the right of the *Contractor* to continue the Work is terminated, as provided in GC 7.1.1, 7.1.4 or 7.1.7, at the option of the Owner, any or all subcontracts as may be selected by the Owner shall, upon notice to the Contractor and the affected Subcontractors and Suppliers from the Owner, be assigned to the Owner, without any action being necessary from the *Contractor* and in order to ensure the rights of the Owner, the *Contractor* shall:

.1 contractually obligate each of its *Subcontractors* and *Suppliers* to agree that each such subcontract shall be assignable, at the option of the *Owner*, to the *Owner*, upon delivery of the notice described above, in the event that:

a) this *Contract* is terminated; or

b) the right of the *Contractor* to continue the Work is terminated;

as provided in GC 7.1.1, 7.1.4 or 7.1.7; and

.2 add the following wording to all subcontracts:

“The *Subcontractor* or *Supplier* acknowledges, and consents to the fact, that the *Contractor* has agreed that this subcontract shall be assigned to the *Owner* or its permitted successors or assigns under the *Contract* in the event that the *Contract* between the *Owner* and the *Contractor* is terminated or the right of the *Contractor* right to continue the *Work* under the *Contract* is terminated and the *Owner* gives notice to the *Contractor* and the *Subcontractor* or *Supplier* that it wishes to take an assignment of this subcontract *Notice of Assignment*. The *Subcontractor* or *Supplier* agrees with the *Contractor* and the *Owner* that:

a) until *Notice of Assignment* is received, the *Contractor* is the person entitled to receive the property, services and work to be delivered and performed under the subcontract and to exercise and enforce all of the rights, entitlements and benefits which may arise under the subcontract;

b) following receipt of a *Notice of Assignment*, the *Owner*, or its permitted successors or assigns under the *Contract*, shall be the person entitled to receive, enjoy and deal with the property, services and work to be delivered and provided under the subcontract and to enjoy, exercise and enforce all of the rights, entitlements, benefits, advantages, authorities, discretions, powers and remedies arising under the subcontract; and

c) the *Owner*, or its permitted successors or assigns under the *Contract*, shall only be responsible for obligations which accrue under the subcontract after the date of receipt of notice of assignment.”

**SC35 GC 8.1 AUTHORITY OF THE CONSULTANT**

**SC35.1 Paragraph 8.1.1:**

Add the words “Unless either party has referred a matter to adjudication pursuant to Section 13.5 of the *Construction Act*” to the beginning of paragraph 8.1.1.

**SC35.2 Paragraph 8.1.2:**

Delete paragraph 8.1.2 in its entirety and substitute new paragraph 8.1.2 as follows:

If a dispute arises under the *Contract* in respect of a matter in which the *Consultant* has no authority under the *Contract* to make a finding, and provided that neither party has referred a matter to adjudication pursuant to Section 13.5 of the *Construction Act*, the procedures set out in paragraph 8.1.3 and paragraphs 8.3.3 to 8.3.8 of GC 8.3 - NEGOTIATION, MEDIATION AND ARBITRATION, and in GC 8.4 - RETENTION OF RIGHTS apply to that dispute with the necessary changes to detail as may be required.

**SC35.3 Paragraph 8.1.3:**

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Delete last sentence of 8.1.3 and substitute the following sentence:

If it is subsequently determined that such instructions were at variance with the *Contract Documents*, the *Owner* shall pay the *Contractor* costs incurred by the *Contractor* in carrying out such instructions which the *Contractor* was required to do beyond the requirements of the *Contract Documents*, including costs resulting from interruption of the *Work*.

**SC35.4 Paragraph 8.1.4:**

Add a new paragraph 8.1.4 as follows:

Either party may refer a matter set out in Section 13.5(1) of the *Construction Act* to adjudication pursuant to Part II.1 of the *Construction Act*. The parties agree that no other matter may be referred to adjudication unless the parties agree in writing.

**SC35.5 Paragraph 8.1.5:**

Add a new paragraph 8.1.5 as follows:

The parties agree and consent that any *Construction Act Document* may be sent to the other party(s) and any adjudicator via electronic mail and that service of such *Construction Act Documents* will be effective at the time and date of sending, except that where an electronic mail message is sent after 4:00 p.m. Eastern Time, service of such *Construction Act Documents* will be deemed to be effective the following day. The e-mail message to which a *Construction Act Document* is attached shall include the sender's name, address, telephone number and the name and telephone number of a person to contact in the event of a transmission problem. Any *Construction Act Documents* shall be served in accordance with this section unless the parties subsequently agree otherwise in writing or an adjudicator directs otherwise.

**SC36 GC 8.3 NEGOTIATION, MEDIATION AND ARBITRATION**

**SC36.1 Paragraph 8.3.1:**

Add the words "(the "Rules")", subject to amendments, if any, required by virtue of the applicability of the *Municipal Arbitration Act*, R.S.O. 1990, c. M.48," after the words "Industry Disputes" in the second line of paragraph 8.3.1.

**SC36.2 Paragraph 8.3.4:**

Add the words “subject to any amendments to the Rules made as described in paragraph 8.3.1”, after the words “CCDC 40” in the last line of paragraph 8.3.4.

**SC36.3 Paragraph 8.3.6:**

Delete paragraph 8.3.6 in its entirety and substitute the following:

8.3.6 By giving notice in writing to the other party, not later than 20 *Working Days* after the date of termination of the mediated negotiations under paragraph 8.3.5, either party may refer the dispute to be finally resolved by arbitration under the latest edition of the Rules, subject to any amendments to the Rules made as described in paragraph 8.3.1. The arbitration shall be conducted pursuant to the *Municipal Arbitration Act*, R.S.O. 1990, c. M.48, as amended. Unless either party gives the notice contemplated by this paragraph 8.3.6, there shall be no arbitration of any such dispute.

**SC36.4 Paragraph 8.3.7:**

Amend paragraph 8.3.7 by changing the number “10” in line 1 to “20”.

**SC36.5 Paragraphs 8.3.9, 8.3.10, and 8.3.11:**

Add new paragraphs 8.3.9, 8.3.10 and 8.3.11 as follows:

8.3.9 - Within five *Working Days* of receipt of a *Notice of Arbitration* given pursuant to paragraph 8.3.6, the *Owner* shall give the *Consultant* a written notice containing:

- a) a copy of *Notice of Arbitration*;
- b) a copy of Supplementary Condition 8.3.9 of this *Contract*;
- c) any claims or issues which the *Contractor* or the *Owner*, as the case may be, wishes to raise in relation to the *Consultant* arising out of the issues in dispute in the arbitration.

8.3.10 - For purposes of the Rules for Mediation and Arbitration of Construction Disputes CCDC 40, the term “neutral appointing authority”, as used in the Rules for Mediation of CCDC2 Construction Disputes shall mean the head of the construction section of the ADR Institute of Ontario, Inc. presiding at the time notice of the dispute is given pursuant to the Contract.

8.3.11 - Notwithstanding any other provision of this *Contract*, the provisions set out in paragraphs 8.3.1 and 8.3.3 to 8.3.10 shall only apply if the parties agree in writing to submit a dispute to all, or any part of, those alternate dispute resolution procedures. If the parties do not agree as aforesaid, the Courts shall have exclusive jurisdiction to determine any dispute relating to the *Work* or to the *Contract*.

**SC37 GC 8.4 RETENTION OF RIGHTS**

**SC37.1 Paragraph 8.4.3:**

Add a new paragraph 8.4.3 as follows:

8.4.3 - If the *Owner* gives the notice in writing described in paragraph 8.3.6 to have a dispute resolved by arbitration, the *Contractor* agrees that this paragraph 8.4.3 shall be construed as a formal consent to the stay of any lien proceedings until an award is rendered in the arbitration or such dispute as otherwise resolved between the parties. In no event shall the *Contractor* be deprived of its right to enforce its lien against the *Project* should the *Owner* fail to satisfy any arbitral award against it in full on the dispute in respect of which the lien proceedings were commenced. Nothing in this subparagraph 8.4.3 shall prevent the *Contractor* from taking the steps required by the *Construction Act* to preserve, perfect or otherwise prevent the expiry of a lien to which it may be entitled.

**SC38 GC 9.1 PROTECTION OF WORK AND PROPERTY**

**SC38.1 Paragraph 9.1.1.1:**

Delete subparagraph 9.1.1.1 in its entirety and substitute new subparagraph 9.1.1.1 as follows:

9.1.1.1 - errors in the *Contract Documents* which the *Contractor* could not have discovered applying the standard of care described in paragraph 3.12.1;

**SC38.2 Paragraph 9.1.2:**

Delete paragraph 9.1.2 in its entirety and substitute new paragraph 9.1.2 as follows:

9.1.2 - Before commencing any *Work*, the *Contractor* shall determine the location of all underground utilities and structures indicated in or inferable from the *Contract Documents*, or that are reasonably apparent or inferable

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from an inspection of the *Place of the Work* by a contractor exercising the degree of care and skill described in paragraph 3.12.1.

**SC38.3 Paragraphs 9.1.5 and 9.1.6:**

Add new paragraphs 9.1.5 and 9.1.6 as follows:

9.1.5 - With respect to any damage to which paragraph 9.1.4 applies, the *Contractor* shall neither undertake to repair or replace any damage whatsoever to the work of *Other Contractors*, or to adjoining property, nor acknowledge that the same was caused or occasioned by the *Contractor*, without first consulting the *Owner* and receiving written instructions as to the course of action to be followed from either the *Owner* or the *Consultant*.

9.1.6 - The *Contractor* shall be responsible for securing the *Place of the Work* at all times and shall take all reasonable precautions necessary to protect the *Place of the Work*, its contents, materials (including *Owner*-supplied materials) and the public from loss or damage during and after working hours.

**SC39 GC 9.2 TOXIC AND HAZARDOUS SUBSTANCES**

**SC39.1 Paragraph 9.2.5.3:**

Delete “and” at the end of subparagraph 9.2.5.3.

**SC39.2 Paragraph 9.2.5.4:**

Add “, and” at the end of subparagraph 9.2.5.4.

**SC39.3 Paragraph 9.2.5.5:**

Add new subparagraph 9.2.5.5 as follows:

9.2.5.5 - take all reasonable steps to mitigate the impact on *Contract Time* and *Contract Price* and any further steps it deems necessary to mitigate or stabilize any conditions resulting from encountering toxic or hazardous substances or materials.

**SC 39.4 Paragraph 9.2.7.3:**

Add the following after “delay” in the second line of subparagraph 9.2.7.3:

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“, but excluding any consequential, indirect or special damages, and any claims for loss of profits or opportunity”

**SC39.5 Paragraph 9.2.8.3:**

Add the words "and as a result of the delay" before the semicolon at the end of subparagraph 9.2.8.3:

**SC39.6 Paragraphs 9.2.10, 9.2.11, 9.2.12, 9.2.13, and 9.2.14:**

Add new paragraphs 9.2.10, 9.2.11, 9.2.12, 9.2.13, and 9.2.14 as follows:

9.2.10 - Without limiting its other obligations under this paragraph 9.2, the *Contractor* acknowledges that its obligations under the *Contract* include compliance with EPA, CEPA and TGDA. The *Contractor* acknowledges that the *Owner* may suffer loss and damage should the *Contractor* fail to comply with EPA, CEPA and TGDA and agrees to indemnify and hold harmless the *Owner* with respect to any loss or damage to which the *Owner* is exposed by the *Contractor's* failure to comply. The *Contractor* expressly agrees that such loss and damage shall be included within the scope of the *Contractor's* indemnity described in paragraph 13.1.1. The *Contractor* acknowledges that should it fail to comply with EPA, CEPA and TGDA, such failure will constitute a failure to comply with the *Contract* in a material way within the meaning of paragraph 7.1.2.

9.2.11 - The *Contractor* shall comply with all requirements of the Federal Halocarbon Regulations (2003) (FHR) and all subsequent amendments thereto insofar as these Regulations are applicable to the *Work*. The *Contractor* shall submit all required logs and documentation to the *Owner* prior to making his application for *Substantial Performance of the Work*.

9.2.12 - Whenever encountering *Hazardous Material(s)*, the *Contractor* shall comply with federal, provincial, and local requirements pertaining to the handling, management, haulage, and/or disposal of hazardous materials including but not limited to the following:

- .1 *Occupational Health and Safety Act*, R.S.O. 1990, c. O.1, O. Reg. 278/05: Designated Substance – Asbestos on Construction Projects and in Buildings and Repair Operations;
- .2 *Environmental Protection Act*, R.S.O. 1990, c. E. 19, R.R.O. 1990, Regulation 347: *General – Waste Management*;
- .3 *Dangerous Goods Transportation Act*, R.S.O. 1990, C. D.1; and
- .4 *Transportation of Dangerous Goods Act*, 1992, S.C. 1992, c. 34 and R.R.O. Regulation 347.

9.2.13 - Upon proper removal of *Hazardous Material(s)*, the *Contractor* shall submit to the *Owner* proof of proper disposal including a waybill and/or receipt from the waste disposal site authorized to receive and dispose of the *Hazardous Material(s)* and if applicable, an Asbestos Abatement Certificate, within 5 business days of disposal and/or abatement. The *Owner* may withhold payment related to the removal if the *Contractor* fails to submit proof of proper removal.

9.2.14 - For the purposes of GC 9.2 – TOXIC AND HAZARDOUS SUBSTANCES, the definition of *Hazardous Material* shall exclude *Excess Soil*.

**SC40 GC 9.4 CONSTRUCTION SAFETY**

**SC40.1 Paragraph 9.4.1:**

Add to the first line of paragraph 9.4.1, after the words “The *Contractor* shall be”, the following:

“solely responsible for construction safety at the Place of the Work and for compliance with the rules, regulations and practices required by the applicable construction health and safety legislation, and”

**SC40.2 Paragraphs 9.4.2, 9.4.3, 9.4.4, and 9.4.5:**

Delete paragraphs 9.4.2, 9.4.3, 9.4.4 and 9.4.5 in their entirety and substitute with the following:

9.4.2 - The *Contractor* shall assume the role of contractor, constructor, prime contractor, or principal contractor as may apply in accordance with applicable Occupational Health and Safety Legislation at the *Place of the Work* and provide to the *Owner* copies of the related Health and Safety notices and documents.

9.4.3 - The *Contractor* represents and warrants that it is familiar with the obligations imposed on an “employer” as defined in the *Occupational Health and Safety Act (Ontario)*, and that it has in place a health and safety program to ensure the health and safety of all workers for which it has responsibility under the said *Act*.

9.4.4 - The *Contractor* shall comply in all respects with the requirements of the *Occupational Health and Safety Act (Ontario)* and its own health and safety program to take all steps reasonable in the circumstances to ensure



the health and safety of all workers for which it has responsibility under the said *Act*. The *Contractor* shall maintain and strictly enforce its health and safety program. The *Contractor* shall also provide such information within such timeframes as may be required in order to allow the *Owner* to fulfill its obligations pursuant to the *Occupational Health and Safety Act (Ontario)*, including, without limitation, the obligation to notify the Director under such *Act* in the event of an accident causing personal injury.

9.4.5 - Prior to the commencement of the *Work*, the *Contractor* shall submit to the *Owner*:

- .1 copies of the *Contractor's* insurance policies having application to the *Project* or certificates of insurance, at the option of the *Owner*;
- .2 documentation setting out the *Contractor's* in-house safety programs;
- .3 a copy of the Notice of Project filed with the Ministry of Labour naming itself as "constructor" under the *Occupational Health and Safety Act*.

**SC40.3 Paragraphs 9.4.6, 9.4.7, 9.4.8, 9.4.9, 9.4.10, and 9.4.11:**

Add new paragraphs 9.4.6, 9.4.7, 9.4.8, 9.4.9, 9.4.10, and 9.4.11 as follows:

9.4.6 - The *Contractor* shall indemnify and save harmless the *Owner*, its agents, officers, directors, employees, consultants, successors, appointees, and assigns from and against the consequences of any and all safety infractions committed by the *Contractor* or any of its *Subcontractors* under the *Occupational Health and Safety Act*, including the payment of legal fees and disbursements on a solicitor and client basis. Such indemnity shall apply to the extent to which the *Owner* is not covered by insurance, provided that the indemnity contained in this paragraph shall be limited to costs and damages resulting directly from such infractions and shall not extend to any consequential, indirect, or special or other damages.

9.4.7 - In the event of an emergency threatening health, life or property, the *Contractor* shall take such action as may be necessary to save lives and protect persons from injury, and done to protect and preserve the property. The *Contractor* shall notify the *Owner* and the *Consultant* of such emergency as promptly as is practical under the circumstances.

9.4.8 - The *Owner* undertakes to include in its contracts with *Other Contractors* and in its instructions to its own forces the requirement that the other contractor or its own forces, as the case may be, comply with the policies and procedures of and the directions and instructions from the *Contractor* with respect to occupational health and safety and related matters.

9.4.9 - The *Contractor* shall comply with and cause its *Subcontractors* to comply with all legislative amendments, by-laws, letters of instruction, controls, regulations, requirements and orders that were or are issued by the Government of Canada or the Province of Ontario in response to COVID-19, including any resurgence or mutation thereof.

9.4.10 - The *Contractor* shall provide proper training, conditions, instructions and protective materials to ensure regional and local Public Health recommendations and Provincial guidelines for COVID-19 are followed in the performance of the *Work*, including but not limited to, recognizing the signs and symptoms of COVID-19, screening, social/physical distancing and proper mask use.

9.4.11 - The *Contractor* and its *Subcontractors* shall strictly adhere to all *Owner* policies, procedures and protocols for COVID-19 when performing any services at the Place of the *Work*. In the event of a failure to comply under this paragraph 9.4.11, as determined by the *Owner* in its sole discretion, the *Contractor* or its *Subcontractors* will not be permitted to perform the *Work* and the *Contractor* shall immediately schedule alternate replacements, at its own cost and expense.

**SC41 GC 9.5 MOULD**

**SC41.1 Paragraph 9.5.2.3:**

Add the words "and as a result of the delay" before the period at the end of subparagraph 9.5.2.3.

**SC41.2 Paragraph 9.5.3.3:**

Add the following words after "delay," in the third line of subparagraph 9.5.3.3:

"but excluding any consequential, indirect or special damages, and any claims for loss of profit or opportunity,"

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**SC42 GC 10.1 TAXES AND DUTIES**

**SC42.1 Paragraphs 10.1.3, 10.1.4, 10.1.5, 10.1.6, and 10.1.7:**

Add new paragraphs 10.1.3, 10.1.4, 10.1.5, 10.1.6, and 10.1.7 as follows:

10.1.3 - Where the *Owner* is entitled to an exemption or a recovery of sales taxes, customs duties, excise taxes or *Value Added Taxes* applicable to the *Contract*, the *Contractor* shall, at the request of the *Owner*, assist with application for any exemption, recovery or refund of all such taxes and duties and all amounts recovered or exemptions obtained shall be for the sole benefit of the *Owner*. The *Contractor* agrees to endorse over to the *Owner* any cheques received from the federal or provincial governments, or any other taxing authority, as may be required to give effect to this paragraph.

10.1.4 - The *Contractor* shall maintain accurate records tabulating equipment, material and component costs reflecting the taxes, customs duties, excise taxes and *Value Added Taxes* paid.

10.1.5 - Any refund of taxes, including without limitation, any government sales tax, customs duty, excise tax or *Value Added Tax*, whether or not paid, which is found to be inapplicable or for which exemption may be obtained, is the sole and exclusive property of the *Owner*.

10.1.6 - The *Contractor* agrees to cooperate with the *Owner* and to obtain from all *Subcontractors* and *Suppliers* cooperation with the *Owner* in the application for any rebates, incentives or refund or exemption of any taxes, which cooperation shall include, but not be limited to, making or concurring in the making of an application for any such rebates, incentives, refund or exemption and providing to the *Owner* copies, or where required, originals of records, invoices, purchase orders and other documentation necessary to support such applications. All such rebates, incentives or refunds shall either be paid to the *Owner*, or shall be a credit to the *Owner* against the *Contract Price*, in the *Owner's* discretion.

10.1.7 - Customs duties, penalties, or any other penalty, fine or assessment levied against the *Contractor* shall not be treated as a tax or customs duty for purposes of this GC10.1.

**SC43 GC 10.2 LAWS, NOTICES, PERMITS, AND FEES**

**SC43.1 Paragraph 10.2.4:**

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Delete the words “or codes” and substitute the words “codes, and industry best practices and guidelines” after the word “regulations,” in the first line of paragraph 10.2.4.

Add the words “to the environment,” after the words “relate to the *Work*,” in the second line of paragraph 10.2.4.

Add the words “The *Contractor* shall provide the *Owner* with copies of all such required notices and related health and safety documents.” at the end of paragraph 10.2.4.

Add the following to the end of paragraph 10.2.4:

The *Contractor* shall notify the Chief Building Official or the registered code agency, where applicable, of the readiness, substantial completion, and completion of the stages of construction set out in the Ontario Building Code. The *Contractor* shall be present at each site inspection by an inspector or registered code agency. If any laws, ordinances, rules, regulations, or codes conflict, the more stringent shall govern.

**SC43.2 Paragraph 10.2.5:**

Delete the word “The” from the first line of paragraph 10.2.5, and substitute the words “Subject to paragraph 3.9.1, the”.

Add the following before the period at the end of the second sentence of paragraph 10.2.5:

“and no further work on the affected components of the *Contract* shall proceed until these changes to the *Contract Documents* have been obtained by the *Contractor* from the *Consultant*.”

**SC44 GC 10.4 WORKERS’ COMPENSATION**

**SC44.1 Paragraphs 10.4.2 and 10.4.3:**

Add new paragraphs 10.4.2 and 10.4.3 as follows:

10.4.2 - The *Contractor* shall ensure that each *Subcontractor* complies with the workers' compensation legislation at the *Place of the Work*. At any time during the term of the Contract, when requested by the *Owner*, the *Contractor* shall provide such evidence of compliance by the *Contractor* and *Subcontractors*.

10.4.3 - Where a *Subcontractor* is not required to participate in the insurance plan provided for under the workers' compensation legislation, the *Contractor* shall require the *Subcontractor* to provide a sworn declaration of its exemption as a condition of the *Subcontractor's* admission to the *Place of Work*. When requested by the *Owner*, the *Contractor* shall require the *Subcontractor* to provide a letter of exemption under the workers' compensation legislation.

**SC45 PART 11 – INSURANCE**

**SC45.1** Add the following to the title of PART 11: “**AND CONTRACT SECURITY**”

**PART 11 – INSURANCE AND CONTRACT SECURITY**

**SC46 GC 11.1 INSURANCE**

**SC46.1 Paragraph 11.1.1.4:**

Add the words "All Risk" ahead of the words "property insurance" in the first sentence and in the third sentence of subparagraph 11.1.1.4.

**SC46.2 Paragraph 11.1.1.6(4):**

Add a new subparagraph 11.1.1.6(4) as follows:

11.1.1.6.(4) - If any loss occurs involving damage to property in an amount greater than \$25,000, bodily injury to any person, or damage to any existing structure, the *Contractor* shall, in addition to the other requirements set out herein, immediately provide a detailed written report to the *Owner*.

**SC46.3 Paragraph 11.1.2:**

Delete paragraph 11.1.2 in its entirety and substitute new paragraph 11.1.2 as follows:

11.1.2 - General liability insurance as required in 11.1.1.1 shall include, but not be limited to, contractual liability, non-owned automobile liability, owner's and contractor's protective coverage, employer's liability, severability of interest and cross liability provisions, and each of the policies of insurance shall also contain a provision requiring not less than 30 calendar days' written notice to the *Owner* by registered mail prior to cancellation or any change that would reduce coverage. At least 10 calendar days prior to commencement of the *Work* and upon any renewal,

amendment, or extension of all or any part of the insurance, the *Contractor* shall promptly provide the *Owner* with confirmation of coverage and, if required, a certified true copy of the policies certified by an authorized representative of the insurer together with copies of any amending endorsements applicable to the *Work*.

**SC46.4 Paragraph 11.1.5:**

Add the following to the end of paragraph 11.1.5:

All policies of insurance shall be primary and shall not act as co-insurance or as excess coverage to any policies obtained by the *Owner* for its sole protection. The *Owner*, where it is an additional insured, will only accept insurance policies and/or certificates from issuing institutions that have the following minimum ratings:

Standard & Poor's	minimum rating of BBB
Moody's	minimum rating of Baa
A. M. Best	minimum rating of B+

**SC46.5 Paragraphs 11.1.9 and 11.1.10:**

Add new paragraphs 11.1.9 and 11.1.10 as follows:

11.1.9 - The parenthetical reference in CCDC 41, paragraph 4 which reads: "(excluding flood and earthquake)" is deleted and replaced with the following: "including flood and earthquake endorsements or their equivalent replacement, and including coverage for boiler and machinery testing and commissioning; property and off-site coverage, with limits acceptable to the *Owner*."

11.1.10 - The words "All Risk" are added before the words "property insurance" in CCDC 41, paragraph 4.

**SC47 GC 11.2 CONTRACT SECURITY**

**SC47.1** Add a new section "GC 11.2 CONTRACT SECURITY" as follows:

**GC 11.2 CONTRACT SECURITY**

11.2.1 - The *Contractor* shall, prior to commencement of the *Work*, provide to the *Owner*:

.1 a performance bond, in the form and the amount set out in the bid documents, covering the performance of the Contract, including the *Contractor's* requirements with respect to the correction of deficiencies and the fulfillment of all warranties; and

.2 a labour and material payment bond, in the form and the amount set out in the bid documents, covering payment for labour, Products, or both.

11.2.2 - The Performance bonds referred to in paragraph 11.2.1 shall be issued by a duly licensed surety company authorized to transact the business of suretyship in the province or territory of the *Place of the Work* and shall be maintained in good standing until the fulfillment of the *Contract*.

11.2.3 - If approved changes pursuant to the *Contract* result in approved increase or cumulative increases to the *Contract Price* the *Contractor* shall, if requested in writing to do so by the *Owner*, promptly acquire additional Performance bonding at the *Owner's* expense. Where additional Performance bonding premiums are paid by the *Owner*, the *Contractor* shall promptly submit written confirmation that the premiums were paid to the surety and promptly provide the *Owner* with the original revised Performance bond(s).

**SC48 GC 12.1 READY-FOR-TAKEOVER**

**SC48.1 Paragraph 12.1.1.1:**

Add the following to the end of subparagraph 12.1.1.1, “in accordance with the provisions of GC 5.4”.

**SC48.2 Paragraph 12.1.3:**

Add the following to the first line of paragraph 12.1.3 after “the *Contractor* shall...”:

“, subject to GC 5.5.1,”

**SC48.3 Paragraph 12.1.5:**

Delete paragraph 12.1.5 in its entirety and replace with a new paragraph 12.1.5 as follows:

12.1.5 - The *Contractor* shall attain *Total Performance of the Work*, including *Ready-for-Takeover* and the rectification of all deficiencies, within 30 days of attaining *Substantial Performance of the Work*.

**SC48.4 Paragraph 12.1.6:**

Delete paragraph 12.1.6 in its entirety.

**SC49 GC 12.2 EARLY OCCUPANCY BY THE OWNER**

Delete GC 12.2 EARLY OCCUPANCY BY THE OWNER in its entirety.

**SC50 GC 12.3 WARRANTY**

**SC50.1 Paragraph 12.3.1:**

Add the following to the end of paragraph 12.3.1:

Where the *Contractor* has been permitted to make use of permanent equipment or systems, as provided in GC 14.4, prior to the issuance of the Certificate of Substantial Performance of the *Work*, such permanent equipment or system shall be subject to the same warranty as described in this GC12.3 and shall be judged, for purposes of assessing compliance with the warranty, as though the equipment or system was new, clean and unused by the *Contractor*, except for normal commissioning and start up activities, prior to the date of *Substantial Performance of the Work*.

**SC50.2 Paragraph 12.3.2:**

Delete the word "The" from the first line of paragraph 12.3.2 and substitute the words: "Subject to paragraph 3.9.1, the...".

**SC50.3 Paragraph 12.3.5:**

Add the following to the end of paragraph 12.3.5:

12.3.5 - The *Contractor* shall commence or correct any warranty item within 5 *Working Days* after receiving notice from the *Owner* or *Consultant*, and complete the work as expeditiously as possible, except in the event the warranty item would prevent maintaining security or keeping basic systems essential to the ongoing business of the *Owner* operational as designed, then all necessary corrections and/or installations of temporary replacements shall be carried out immediately as an emergency service, subject to GC 3.13, which may entail overtime work on the part of the *Contractor*. Additional charges for overtime work in this regard shall be borne by the *Contractor*. Should the *Contractor* fail to commence or correct any warranty item within 5 *Working Days* or to provide emergency service within 24 hours of a request being made by email during normal business



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hours by the *Owner* as aforesaid, the *Owner* is authorized, regardless of and notwithstanding the provisions of GC 3.1, to carry out necessary repairs or replacements at the *Contractor's* expense. Where a deficiency fund is retained, reference should also be made to GC 5.5.6 in this regard.

**SC50.4 Paragraph 12.3.7:**

Add a new paragraph 12.3.7 as follows:

12.3.7 - The *Contractor* shall assign to the *Owner* all warranties, guarantees or other obligations for work, services or *Products* performed or supplied by any *Subcontractor*, *Supplier* or other person in connection with the *Work* and such assignment shall be with the consent of the assigning party where required by law or by the terms of that party's contract. Such assignment shall be in addition to, and shall in no way limit, the warranty rights of the *Owner* under the *Contract Documents*. Until the expiry of the relevant warranty periods enforceable against the *Contractor*, the *Owner* shall have in its custody all warranties, guarantees and other obligations to third parties respecting the *Work*."

**SC51 GC 13.1 INDEMNIFICATION**

**SC51.1 Paragraph 13.1.2.4:**

Delete paragraph 13.1.2.4 in its entirety and replace with a new paragraph 13.1.2.4 as follows:

13.1.2.4 - In respect to claims by third parties for direct loss resulting from bodily injury, sickness, disease or death, or to injury to or destruction of tangible property, the obligation to indemnify is without limit. In respect to all other claims for indemnity as a result of claims advanced by third parties, the limits of indemnity set forth in paragraphs 13.1.2.1 and 13.1.2.2 shall apply.

**SC51.2 Paragraph 13.1.2.5:**

Add a new subparagraph 13.1.2.5 as follows:

13.1.2.5 - The *Contractor* agrees that the *Owner* shall not be liable for any injury, death or damage to any employees, officers or agents of the *Contractor* unless the injury, death or damage is caused by the negligence

or wilful misconduct of an officer or employee of the *Owner* while acting within the scope of their employment.

**SC51.3 Paragraphs 13.1.7, 13.1.8 and 13.1.9:**

Add new paragraphs 13.1.7, 13.1.8 and 13.1.9 as follows:

13.1.7 - Notwithstanding any other term or condition of this *Contract*, the *Contractor* shall indemnify and hold harmless the *Owner* from and against all claims, demands, actions, suits or proceedings by any of the employees of the *Contractor*, or *Subcontractors* or sub-subcontractors arising from:

- .1 the *Contractor's* failure to maintain worker's compensation insurance required by the *Contract Documents*;
- .2 the *Contractor's* failure to fulfill the terms and conditions of the *Contract*, including, without limitation, the *Contractor's* failure to comply with the requirements of GC 9.4 – CONSTRUCTION SAFETY;
- .3 the *Contractor's* failure to comply with the requirements of GC 14.7 – EXCESS SOIL (including, without limitation, the Excess Soil Legislation);
- .4 the *Contractor's* failure to comply with orders, fines and penalties imposed by a governmental authority and legal fees and disbursements to defend any offences, charges, actions or proceedings of a governmental authority, arising out of or attributable to the Excess Soil Legislation, including, without limitation, the *Owner's* failure or alleged failure to comply with any duties or responsibilities it may be found to have, or alleged to have, as a *Project Leader*; and
- .5 the *Contractor's* failure to comply with orders, fines and penalties imposed by a governmental authority and legal fees and disbursements to defend any offences, charges, actions or proceedings of a governmental authority, arising out of or attributable to the matters referred to in GC 9.4 – CONSTRUCTION SAFETY, including, without limitation, the *Owner's* failure or alleged failure to comply with any duties or responsibilities it may be found to have, or alleged to have, as a *Constructor*.

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This indemnity shall survive the completion of the *Work* or the termination for any reason of the *Contract*.

13.1.8 - Notwithstanding anything contained in the *Contract Documents* to the contrary, the *Owner* shall have the right to set-off the amount of any claims for which *Notice in Writing* has been given by the *Owner* to the *Contractor* in accordance with GC 6.6 CLAIMS FOR A CHANGE TO CONTRACT PRICE or GC 13.1 INDEMNIFICATION against any amounts which may be otherwise owing or payable to the *Contractor* pursuant to the terms of the *Contract*.

13.1.9 - Notwithstanding anything contained in the *Contract Documents* to the contrary, except to the extent such loss is paid by insurance, neither party shall be liable for any consequential, indirect, special or incidental damages of any kind or nature no matter how arising, including in contract, tort (including negligence), warranty, strict liability or any other theory of liability at law or in equity.

**SC52 GC 13.2 WAIVER OF CLAIMS**

**SC52.1 Paragraph 13.2.2.2:**

Delete the reference to "395 calendar days" in the first line of subparagraph 13.2.2.2 and substitute "120 calendar days".

**SC52.2 Paragraph 13.2.3.4:**

Delete the last sentence of subparagraph 13.2.3.4 and substitute the following:

"Substantial defects or deficiencies" mean those defects or deficiencies in the *Work* where the reasonable cost of repair of such defects or deficiencies exceeds:

- .1 if the *Contract Price* is \$2 million or less, the sum of \$50,000, before *Value Added Taxes*;
- .2 if the *Contract Price* exceeds \$2 million, the sum of \$100,000, before *Value Added Taxes*;

but, in any event, a defect or deficiency in the *Work* which affects the *Work* to such an extent or in such a manner that a significant part or the whole of

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the *Work* is unfit for the purpose intended by the *Contract Documents* shall be deemed to be a “substantial defect or deficiency” regardless of the cost of repair.

**SC52.3 Paragraph 13.2.3.5:**

Delete “and” at the end of subparagraph 13.2.3.5.

**SC52.4 Paragraph 13.2.3.6:**

Delete “.” at the end of subparagraph 13.2.3.6 and substitute it with “;”

**SC52.5 Paragraphs 13.2.3.7 and 13.2.3.8:**

Add new subparagraphs 13.2.3.7 and 13.2.3.8 as follows:

.7 claims respecting excess soil for which a right of indemnity could be asserted by the *Owner* against the *Contractor* pursuant to the provisions of paragraph 13.1.7.3 or 13.1.7.4 of GC 13.1 – INDEMNIFICATION; and

.8 claims respecting construction safety for which a right of indemnity could be asserted by the *Owner* against the *Contractor* pursuant to the provisions of paragraphs 13.1.7.2 or 13.1.7.5 of GC 13.1 – INDEMNIFICATION.

**SC52.6 Paragraph 13.2.5.3:**

Delete the word “and” at the end of paragraph 13.2.5.3.

**SC52.7 Paragraph 13.2.5.4:**

Delete “.” at the end of paragraph 13.2.5.4, and replace with “;”

**SC52.8 Paragraphs 13.2.5.5, 13.2.5.6, and 13.2.5.7:**

Add new subparagraphs 13.2.5.5, 13.2.5.6, and 13.2.5.7 as follows:

.5 claims arising under paragraph 13.2.3.4;

.6 claims arising under paragraph 13.2.3.7; and

.7 claims arising under paragraph 13.2.3.8.

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**SC53 PART 14 OTHER PROVISIONS**

**SC53.1** Add new PART 14 OTHER PROVISIONS as follows:

**PART 14 OTHER PROVISIONS****GC 14.1 OWNERSHIP OF MATERIALS**

14.1.1 - All *Work* and *Products* delivered to the *Place of the Work* by the *Contractor* shall be the property of the *Owner*. The *Contractor* shall remove all surplus or rejected materials when notified in writing to do so by the *Consultant*.

**GC 14.2 CONSTRUCTION LIENS**

14.2.1 - The *Contractor* shall cause any and all construction liens and certificates of action relating to the *Work* registered or preserved by any *Subcontractor*, sub-subcontractor, *Supplier*, *Contractor's* employees, or any other party to whom the *Contractor* is or may be responsible at law, to be discharged or vacated by the *Contractor* with seven *Working Days* of the date of registration or preservation, by the posting of security or otherwise, all at the *Contractor's* sole expense. The *Contractor* shall not be entitled to receive any payment from the *Owner* until all such claims for lien and certificates of action have been vacated or discharged.

14.2.2 - The *Contractor* shall cause any and all written notices of lien relating to the *Work* given to any person, including, but not limited to, the *Owner* by any *Subcontractor*, sub-subcontractor, *Supplier*, *Contractor's* employees, or any party to whom the *Contractor* is or may be responsible at law, to be withdrawn in writing, and the *Contractor* shall do so within seven *Working Days* of the written notice of lien having been given, all at the *Contractor's* sole expense.

14.2.3 - If the *Contractor* fails to discharge or vacate any such lien or certificate of action, or to have any such written notice of lien withdrawn, in accordance with GC 14.2.1 or GC 14.2.2, then the *Owner* may, at its sole option, fulfil those requirements without notice to the *Contractor* and the *Contractor* shall reimburse the *Owner* on demand for all costs and associated expenses incurred by the *Owner* in fulfilling those requirements and defending any related action, including without limitation, the costs of borrowing the appropriate cash, letter of credit or bond as security, and legal fees and disbursements on a full indemnity basis. If the *Contractor* fails to pay such reimbursement the *Owner* shall have the right, if it so elects, and

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without prejudice to any other rights or remedies, to set off and deduct all such costs and expenses from any amount owing to the *Contractor*.

14.2.4 - Notwithstanding any other provision in the *Contract*, the *Contractor* shall not be entitled to submit an application for payment and the *Owner* shall not be obligated to make payment to the *Contractor* if:

- .1 a claim for lien has been served and/or registered against the *Project* lands;
- .2 if the *Owner* or mortgagee of the *Project* lands has received written notice of a lien; or
- .3 the *Owner* or *Consultant* reasonably believe that any party has purported to retain title to *Products* or materials in respect of which an application for payment has been made.

14.2.5 - Notwithstanding GC 14.2.4, the *Owner* may, in its sole discretion, provide notice to the *Contractor* that the *Contractor* may submit an application for payment notwithstanding the existence of a claim for lien or receipt of a written notice of lien, provided the amount of the lien is withheld from the payment. If the *Contractor* receives notice from the *Owner* permitting it to submit an application for payment, it shall include in such application for payment the following:

- .1 a description of the lien and the following certification: "There are no notices or claims for lien against the *Owner* or the *Place of the Work* (as defined in the *Contract*) and I am not aware of any grounds supporting any other claim for lien against the *Owner* other than those described in this application for payment";
- .2 a separate line item in the application for payment setting out the amount of the lien to be withheld from the payment; and
- .3 a copy of the notice provided by the *Owner* allowing the submission of such application for payment notwithstanding GC 14.2.4.

If the application for payment does not include all information required by GC 5.2.1 and this GC 14.2.5, if any of the required confirmations made by the *Contractor* in its application for payment are untrue, if the notice provided by the *Owner* is not in respect of the application for payment

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submitted by the *Contractor* or if the *Contractor* is otherwise in breach of this *Contract*, it shall not be considered a "Proper Invoice" for the purposes of the *Construction Act* or this *Contract*.

14.2.6 - Without limiting the foregoing, the *Contractor* shall, if requested by the *Owner*, defend, indemnify and save the *Owner* harmless from the amount of all such claims and the costs of defending any and all actions commenced against the *Owner* pursuant to the *Construction Act*, including the legal costs of the *Owner*, unless the lien was a direct result of a breach of the *Contract* by the *Owner*.

14.2.7 - GC 14.2 – CONSTRUCTION LIENS does not apply to construction liens claimed by the *Contractor*.

### **GC 14.3 PROJECT RECORDS**

14.3.1 - The *Contractor* shall maintain and keep accurate *Project* records (which means all tangible records, daily reports, daily logs, documents, computer printouts, electronic information, books, plans, *Drawings*, Specifications, accounts or other information relating to the *Work*) in its office in Ontario in accordance with requirements of law, but in any event for not less than 7 years from *Substantial Performance of the Work* or until all claims have been settled. The records shall include detailed records of all actions taken by the *Contractor* related to security and health and safety legislation in the *Place of the Work*. During this time, the *Contractor* shall allow the *Owner* access to the *Project* records during normal business hours upon the giving of reasonable notice. The *Contractor* shall ensure that equivalent provisions to those provided herein are made in each subcontract and shall require the *Subcontractors* and *Suppliers* to incorporate them into every level of contract thereunder for any part of the *Work*.

### **GC 14.4 CONTRACTOR USE OF PERMANENT EQUIPMENT OR SYSTEMS**

14.4.1 - With the prior written approval of the *Owner*, the *Contractor* may make use of elements of the mechanical and electrical systems or equipment comprising a permanent part of the *Work* for the purpose of providing heat or power to the *Project* during the final stages of construction. In such event, before making its written application for *Substantial Performance of the Work*, and again, immediately prior to final takeover by the *Owner* of such systems and equipment, the *Contractor* shall clean and make good, to the satisfaction of the *Consultant*, such systems and

equipment as it had been permitted to use. The *Contractor* shall pay any and all costs associated with such use, cleaning and making good.

#### **GC 14.5 EXECUTION BY COUNTERPARTS**

14.5.1 - For the convenience of the Parties, this Agreement may be executed in any number of counterparts with the same force and effect as if all Parties had executed the same document. Each counterpart shall be deemed to be an original document. All of the counterparts shall be construed together and shall be deemed, for all purposes, to constitute one and the same agreement, binding on all Parties, despite that all Parties did not execute the same counterpart. It shall not be necessary in making proof of this Agreement to produce or account for more than one such counterpart. Any amendment to or modification of this Agreement provided for herein may be executed in counterpart form.

#### **GC 14.6 ELECTRONIC SIGNATURES**

14.6.1 - For the purposes of this Section, “Electronic Signature” means electronic information that a person creates or adopts in order to sign a document and that is in, attached to or associated with this Agreement.

14.6.2 - Both Parties explicitly agree to communicate through electronic means, and that includes allowing for Electronic Signature on any agreement between the Parties.

#### **GC 14.7 EXCESS SOIL**

14.7.1 - The *Contractor* shall determine if the Excess Soil Legislation applies to the *Work* or the *Project* and shall provide the *Owner* with immediate written notice of such determination. For clarity, the *Contractor* acknowledges and agrees that this is an ongoing obligation of the *Contractor* during the performance of the *Work*.

14.7.2 - The *Contractor* acknowledges that prior to the submission of its bid it received a *Project* soil assessment report from the *Owner*, which the *Contractor* reviewed and understood.

14.7.3 - If the Excess Soil Legislation applies to the *Work* or the *Project*, the *Contractor*, at the *Contractor's* cost and expense, shall:



- .1 be solely responsible for compliance with the requirements of the Excess Soil Legislation during the performance of the *Work*; and
- .2 perform the *Work* in accordance with, and subject to, the Excess Soil Legislation.

14.7.4 - If the Excess Soil Legislation applies to the *Work* or the *Project*, and without restricting the generality of any other provision in the *Contract Documents*:

- .1 for the duration of the *Project*, until *Total Performance of the Work*, in respect of the *Work*, the *Project* and the *Place of the Work*, the *Owner* is the *Project Leader* and the *Contractor* shall assist the *Owner* in carrying out, and fulfilling, the duties and responsibilities of the *Project Leader* in accordance with the requirements of the Excess Soil Legislation;
- .2 the *Contractor's* responsibilities under paragraph 10.2.3 include, without limitation, procuring, and, as a part of the *Contract Price*, paying for, all permits, approvals and disposal fees, costs and expenses required by the Excess Soil Legislation;
- .3 the documents at the *Place of the Work* referred to in paragraph 3.9.1 include, without limitation, all documents evidencing that the *Work* complies with the Excess Soil Legislation and such other documents as required by the Excess Soil Legislation;
- .4 the documents to be submitted by the *Contractor* in accordance with paragraph 5.4.7 include, without limitation, all documents evidencing that the *Work* complies with the Excess Soil Legislation and such other documents as required by the Excess Soil Legislation;
- .5 prior to transporting any Excess Soil from the *Project* to a landfill, Class 1 soil management site, Class 2 soil management site, reuse site or any other site the Excess Soil is to be deposited (the "Deposit Site"), the *Contractor* shall submit to the *Owner* confirmation in writing that each Deposit Site is permitted to receive the Excess Soil in accordance with the Excess Soil Legislation. The confirmation shall include the location(s) of each Deposit Site; the name and contact information of the person(s) that will be acknowledging the

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deposit of the Excess Soil at the Deposit Site; and a signed declaration from the *Contractor* confirming the *Contractor* has reviewed the Excess Soil Legislation, has reviewed the *Project* soil assessment report it received from the *Owner* and that each Deposit Site is permitted to receive the Excess Soil in accordance with the Excess Soil Legislation;

.6 prior to transporting any Excess Soil from the *Project* site, for each load of Excess Soil transported from the *Project* site, the *Contractor* must provide the *Owner* with documentation detailing: (i) the quantity of Excess Soil in each load that is to be transported from the *Project* site; and (ii) the location of the Deposit Site where each load of Excess Soil, or portion thereof, is to be deposited. If a load is to be deposited at multiple Deposit Sites, the quantity of Excess Soil deposited at each location must be specified in the documentation provided to the *Owner*. After each load of Excess Soil, or portion thereof, is deposited by the *Contractor*, the *Contractor* must provide the *Owner* with documentation from each Deposit Site confirming the quantity of Excess Soil each deposit site received and the date and time the Excess Soil was deposited. The confirmation in writing and the documentation required by paragraphs 14.7.4.5 and 14.7.4.6, where applicable, shall form part of the requirements of a proper invoice, and the *Owner* may withhold payment related to the removal of the Excess Soil if the *Contractor* fails to submit the documentation required by these paragraphs; and

.7 new Article 4.6 also applies to the Excess Soil Legislation. For clarity, new Article 4.6 is applicable to any changes to Excess Soil Legislation implemented after the time of bid closing and the requirements of the Excess Soil Legislation which are being implemented in phases after the time of bid closing. For further clarity, the obligations and responsibilities of complying with, or fulfilling, such changes or future requirements form part of the *Work* and the *Contract Price*.

14.7.5 - For clarity, this GC 14.7 – EXCESS SOIL is applicable to Excess Soil, even when such Excess Soil differs materially from those indicated in the *Contract Documents* (including without limitation, a *Project* soil assessment report) or is of a nature which differs materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the *Contract Documents*.

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14.7.6 - For the purposes of the *Contract Documents*, capitalized terms shall have the following meanings:

**“Excess Soil”** means “excess soil” within the meaning of the Excess Soil Regulation;

**“Excess Soil Legislation”** means any laws, ordinances, rules, regulations or codes, which are or become in force during the performance of the *Work* dealing with the excavation, removal, transportation and disposal of Excess Soil including, without limitation, the Excess Soil Regulation;

**“Excess Soil Regulation”** means the *On-Site and Excess Soil Management Regulation* (O. Reg. 406/19) as may be amended from time to time; and

**“Project Leader”** means the “project leader” within the meaning of the Excess Soil Regulation and paragraph 14.7.4.1.

## GC 14.8 FAIR WAGE POLICY

The Contractor agrees to comply with all requirements set out in the Fair Wage Policy. The Owner has adopted the Fair Wage Policy, respecting Contractors and subcontractors that must be adhered to on this Project.

The Contractor further agrees to comply with the following mandatory requirements:

1. Pay no less than the remuneration set out in the City's Fair Wage Schedule for the relevant classifications and types of construction, maintenance and repair work where remuneration is the sum of the direct hourly wage plus the hourly value of statutory and non-statutory benefits; Remuneration by piece-rate is not permitted on City work. An hourly wage is required when carrying out construction, maintenance and repair work for the City;
2. Maintain payroll records that enable the City to verify compliance with the Fair Wage Policy;
3. Place the Fair Wage poster supplied by the City of Brampton indicating that the City has a Fair Wage Policy alongside the poster supplied by the Workplace Safety and Insurance Board. The poster is

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available for download on the City's Fair Wage web page;

4. Inform employees that the City of Brampton has a Fair Wage Policy and that the Fair Wage rates are available on the City's website;
5. Complete and submit the Fair Wage Mandatory Requirements Attestation provided by the City at contract award.
6. Complete a Fair Wage Statutory Declaration at the completion of the project with the final invoice or when requested by the City affirming that the Vendor and its sub-contractors:
  - a) Are in full compliance with all statutory obligations including, in particular, the Occupational Health and Safety Act, the Employment Standards Act, the Workplace Safety and Insurance Act and the Ontario Human Rights Code;
  - b) Have made all obligatory remittances under the Employment Insurance Act, the Canada Pension Plan Act and the Workplace Safety and Insurance Act;
  - c) Have classified all workers who are employees per the Employment Standards Act as employees; and
  - d) All workers are properly classified as independent operators where required as per the Workplace Safety and Insurance Act are registered with the Workplace Safety and Insurance Board;
7. Ensure that sub-contractors are fully compliant with the Fair Wage Policy;
8. Cooperate fully with any inquiries or investigations undertaken by the City and its representatives; and
9. Where non-compliance with the Fair Wage Policy has been determined by the City, make payments within 14 days to the affected workers such that their remuneration complies with the Policy.

## END OF SUPPLEMENTARY CONDITIONS

**PROJECT SPECIFIC SUPPLEMENTARY CONDITIONS**

Where Project Specific Supplementary Conditions are contained herein, it should be noted that these Project Specific Supplementary Conditions shall govern in the case of inconsistency or conflict with the Supplementary Conditions and General Conditions.

**PSSC 1 Vendor Accessibility Responsibilities**

All vendors including, but not limited to, contractors, third-parties, external service providers etc. are responsible for complying with the requirements outlined in the [Accessibility for Ontarians with Disabilities Act \(AODA\) S.O. 2005, c. 11.](#)

The Vendor Accessibility Responsibilities Manual below, provides a high-level overview of AODA requirements, key Accessibility considerations and tips on providing Accessible customer service. Vendors should build upon the information provided in the manual and foster a barrier-free approach so that individuals of all abilities have equitable access to their services, goods, technology and/or information.

It is the responsibility of the vendor to understand which requirements are applicable to their business, organization, and/or entity and ensure they are in compliance with the AODA.

[https://www.brampton.ca/en/City-Hall/Accessibility/Documents/Inclusive%20Customer%20Service%20Resource%20Manual%20for%20Vendors.pdf.](https://www.brampton.ca/en/City-Hall/Accessibility/Documents/Inclusive%20Customer%20Service%20Resource%20Manual%20for%20Vendors.pdf)

**PSSC 2 Indemnification**

2.1 The *Contractor* agrees that the *Owner* shall not be liable for any injury or damage (including death) to any employees, officer or agent of the *Contractor*, unless the injury loss or damage is caused by the negligence of an officer or employee of the *Owner* while acting within the scope of his or her employment.

2.2 The *Contractor* agrees that the *Contractor* shall, at all times, indemnify and save harmless the *Owner*, each of its elected officials, officers, employees and agents from and against all claims, demands, losses, costs, damages, action, suits or other proceedings made, sustained, brought or made upon the *Owner* in respect of any costs, expenses, loss, damage or injury, including death, and reasonable legal fees, arising out of any cause, whether direct or indirect, by reason of or in connection with negligent acts or omissions of the *Contractor* or any of its officers, directors, employees or agents in connection with the services performed, purportedly

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performed or required to be performed by the *Contractor* under the *Contract*.

**PSSC 3 Automatic Payment**

3.1 The *Owner's* method of payment is by electronic payment only. The *Contractor* shall be required to complete the Accounts Payable Direct Deposit Set-Up Form.

3.2 All payments will be made within 28 calendar days from receipt of an approved invoice. All invoices must be approved by the *Owner*.

3.3 Invoices shall be submitted to the *Owner's* online invoice submittal portal in accordance with the *Owner's* instructions. The date of the invoice shall be the date it is received in the online portal.

**PSSC 4 Right to Audit**

4.1 The *Contractor* shall maintain complete, true and correct records, together with such supporting or underlying documents and materials, for the duration of this *Contract*. All such records shall be in an organized and accessible manner to the *Owner* and its authorized representatives. The *Contractor* will retain these records for a period which is the greatest of (i) seven (7) years following the completion, expiry or termination of this *Contract*, including any and all renewals thereof; or (ii) such period that any such records are required to be retained under any applicable laws and regulations; and (iii) in the case of any matter which is the subject of dispute under the *Contract*, the date on which a final resolution of the dispute is achieved. No provision of this *Contract* will be construed so as to give the *Owner* any control whatsoever over the *Contractor's* records.

4.2 The *Owner* and its authorized representatives shall have the right to audit, to examine and make copies of or extracts from all financial and related records relating to or pertaining to the *Contract* kept by or under the control of the *Contractor*, including, but not limited to those kept by the *Contractor*, its employees, agents, assigns, successors, and subcontractors. Such records shall include, but are not limited to, accounting records; subcontract files (including proposals of successful and unsuccessful bidders, bid recaps, etc.); related payroll documents (timesheets, etc.); bank statements and journals. Costs of any audits conducted under the authority of this section and not addressed elsewhere will be borne by the *Owner* unless the audit identifies or discloses overpricing or overcharges (of any nature) by the *Contractor* to the *Owner* in excess of 0.5 percent (.5%) of the total Contract billings. In this case, in addition to the *Contractor* making prompt adjustments for the overcharges,

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the *Contractor* shall also promptly reimburse the *Owner* for the actual cost of the *Owner's* audit.

4.3 During the Term and for seven (7) years following the expiry or termination of this *Contract*, the *Owner* or any authorized representative of the *Owner* will be entitled, upon at least five (5) business days' prior notice to *Contractor*, to review or audit any of these records. When requested by the *Owner*, the *Contractor* will provide the *Owner* and any authorized representatives referred to in this section with access to and copies of these records as well as any further information that may be required with reference to these records. The *Owner* and its authorized representatives referred to in this section will have the right to remove all such documents for the purpose of making copies and will return them to the place from which they were removed.

4.4 The *Contractor* shall ensure the *Owner* has these audit rights with the *Contractor's* employees, agents, assigns, successors and subcontractors and the obligations of these rights shall be explicitly included in any subcontract or agreement formed between the *Contractor* and any subcontractors to the extent that those subcontracts or agreements relate to fulfillment of the *Contractor's* obligations to the *Owner*.

4.5 This right to audit shall not be construed to limit, revoke, or abridge any other rights, powers, remedies or obligations relating to audit which the *Owner* may have by municipal, provincial, or federal statute, ordinance or regulation, whether those rights, remedies powers, or obligations are express or implied.

4.6 This right to audit section shall survive the completion, expiry or termination of this *Contract*.

## **PSSC 5 Contractor Evaluation**

5.1 The *Contractor's* performance will be evaluated using the Performance Scorecard included in Part C Forms of this Bid Document in accordance with the *Owner's* Vendor Performance Evaluation Process as set out in the Vendor Performance Standard Operating Procedure. The performance evaluation will be used to provide feedback to the *Contractor*, to provide the *Contractor* with the opportunity to implement performance improvements during the duration of the *Contract*, and, where it is in the *Owner's* best interests as the result of a poor performance rating, suspend the *Contractor* from participating in the *Owner's* procurement process, in accordance with the Vendor Suspension Administrative Directive.

**PSSC 6 Personal Information**

6.1 The *Contractor* will comply with any laws pertaining to Privacy Protection to which the *Owner* is subject (including MFIPPA, regulations and common law). In addition, the *Contractor* will provide the *Owner* with information, cooperation and assistance, as requested by the *Owner* from time to time, in order to enable the *Owner* to comply with any and all requirements to which the *Owner* is subject under any laws pertaining to the Privacy Protection (including MFIPPA, regulations and common law).

**PSSC7 Liquidated Damages**

7.1 Without prejudice to any other remedy available to the *Owner*:

.1 If the *Contractor* fails to achieve *Substantial Performance of the Work* by:

- (i) the date set out in Article A-1 of the Agreement – THE WORK, paragraph 1.3; or,
- (ii) if applicable, the date that is otherwise established for this milestone pursuant to the provisions of GC 3.4 – CONSTRUCTION SCHEDULE (whichever is applicable is referred to herein as the “**Substantial Performance Deadline**”),

then the *Contractor* will pay to the *Owner* the sum of \$2,500.00 as liquidated damages for each and every calendar day of delay in finishing the requirements of *Substantial Performance of the Work* beyond the Substantial Performance Deadline.

.2 If the *Contractor* fails to achieve *Ready-for-Takeover* or *Total Performance of the Work* by:

- (i) the dates set out in Article A-1 of the Agreement – THE WORK, paragraph 1.3; or,
- (ii) if applicable, the dates that are otherwise established for either of these milestones pursuant to the provisions of GC 3.4 – CONSTRUCTION SCHEDULE (whichever is applicable is referred to herein as the “**Ready-for-Takeover Deadline**” in the case of *Ready-for-Takeover* or the “**Total Performance Deadline**” in the case of *Total Performance of the Work*),



then the *Contractor* will pay to the *Owner* the sum of \$1,000.00 as liquidated damages for each and every calendar day of delay in finishing the requirements of either *Ready-for-Takeover* or *Total Performance of the Work* beyond the Ready-for-Takeover Deadline or Total Performance Deadline, as applicable.

7.2 The amounts payable to the *Owner* pursuant to paragraph 7.1.1 or paragraph 7.1.2 shall be payable on demand. The *Owner's* failure to demand the amounts payable under paragraphs 7.1.1 or 7.1.2 shall in no way waive the *Owner's* right to such payment and the *Owner* shall have the right to refuse to pay all or any portion of payments payable to the *Contractor*, including, without limited to, on Proper Invoices, on account of amounts that are payable to the *Owner* under this PSSC 7 – LIQUIDATED DAMAGES.

7.3 The *Contractor* acknowledges and agrees that the liquidated damages specified in this PSSC 7 – LIQUIDATED DAMAGES are not a penalty, and that they are a genuine estimate of the actual costs or damages that will be incurred by the *Owner* as a result of the *Contractor's* failures to achieve the milestones set out in paragraphs 7.1.1 and 7.1.2.

7.4 The *Owner* is entitled to set off any amounts referred to in this PSSC – LIQUIDATED DAMAGES as part of its set-off rights under GC 5.3.

### **PROPER INVOICE CHECKLIST**

In addition to the Proper Invoice requirements in GC 5.2.1 and section 6.1 of the *Construction Act*, the following sets out the Proper Invoice Checklist requirements for this project.

The below list of project-specific requirements, together with the other Proper Invoice requirements of the *Contract*, shall be reviewed during the project “Kick Off” meeting. The meeting will minute the requirements for the Proper Invoice to be followed for this *Contract*. It shall be understood that the below list shall not be the only items required and that other items may be identified due to any changes in process or scope proposed by the *Owner* or *Contractor* during the course of the project.

- ☐ *Project Name and Address*
- ☐ *City Issued Purchase Order Number*
- ☐ *Contract Number*
- ☐ *General Contractor Name, Address and Contact Information*
- ☐ *Date of the proper invoice*
- ☐ *The name, title, telephone number and mailing address of the person to whom payment is to be sent*
- ☐ *Progress Draw Number*
- ☐ *Project Original Value, Project Current Value (including Cash Allowance) and Project Increase in Value (Change Orders)*
- ☐ *Current Draw Amount and Tax Amount*
- ☐ *Current and accrued Legislative Holdback*
- ☐ *Current and accrued Warranty Holdback*
- ☐ *Draft Invoice, due 7 days prior to submitting final invoice for review*
- ☐ *Statutory Declaration*
- ☐ *Copy of valid Insurance Certificate(s)*
- ☐ *Current WSIB Certificate*
- ☐ *Updated Project Schedule (Design and Construction)*
- ☐ *Schedule of Values (Construction)*
- ☐ *Schedule of Labour (Design and Construction)*
- ☐ *Schedule of Materials*
- ☐ *Three-Week Look-Ahead*
- ☐ *Monthly Report*
- ☐ *General Progress Photos*
- ☐ *Consultant Site Review Reports (Bi-weekly)*
- ☐ *Sub-trade Invoices*
- ☐ *Bills of Laden, Soil Import and Export Slips, Packing Slips, Supplier Invoices for all materials, equipment, fixtures and finishes – Indoor and Outdoor, etc.*
- ☐ *3<sup>rd</sup> Party Health and Safety inspection review (monthly), if applicable*

***Periodically required by the Owner:***

- ☐ *Jurisdictional Reviews, as required (Inspections, ESA, MOL, TSSA, MOE etc.)*
- ☐ *Permit/Jurisdictional Invoices*
- ☐ *Owner Testing, Inspection and Commissioning – Deficiency Review and Corrective Measures Log with Photos*
- ☐ *Compliance with CCDC2 and Construction Act for Substantial Performance and Completion*
- ☐ *Prior to Substantial Performance Proper Invoice – Close out Documents:*
  - ☐ *Occupancy Permit*
  - ☐ *Consultant Deficiency List*
  - ☐ *As-built drawings and Operation and Maintenance Manuals*
  - ☐ *Start Up Reports/Commissioning Reports*
  - ☐ *Warrantees, Guarantees and Certificates*
  - ☐ *Shop Drawings*
  - ☐ *Extra Stock and Spare Parts*
  - ☐ *As-built site survey*
  - ☐ *Fair Wage Statutory Declaration*

THREE-WEEK LOOK-AHEAD

Issued Date	
Look-Ahead Schedule ID number	

Item No	Schedule ID	Activity	Location	Activity Start	Activity Finish	Trade	Noise/Vibration Level	Shutdown Requirement	% Complete
Level 1									
Level 2									
Level 3									
Roof									
Deviation Summary									
Recovery Plan									

% Complete to adopt the following highlight  
**Green** = On track. **Yellow** = moderate risk. **Red** = high risk, likely to affect project outcome.

END OF PROJECT SPECIFIC SUPPLEMENTARY CONDITIONS

After award and before the Owner executes the Contract, the Successful Bidder shall deliver to the Owner evidence of insurance which the Successful Bidder shall maintain at all times during the currency of the term of this Contract including the warranty period and any extension or renewal thereof, at its own expense, as follows:

- Commercial General Liability Insurance against all claims for personal injury, including bodily injury resulting in death, and property damage with an inclusive limit of not less than Three Million (\$3,000,000.00) per occurrence. Such policy shall name the Owner as an additional insured with respect to the liability arising out of the operations of the named insured.
- Auto Liability Insurance with an inclusive third-party liability limit of not less than Two Million (\$2,000,000.00) per occurrence for loss or damage resulting from bodily injury to or death of one or more persons and for loss or damage to property. This policy must cover all vehicles owned, leased or operated by or on behalf of the insured.

Bidders are referred to Contract Documents CCDC 2-2020, Supplementary Conditions and Project Specific Supplementary Conditions for additional insurance requirements.

The City of Brampton Certificate of Insurance form is the only form that the Owner will accept. No other forms will be accepted. A sample Certificate of Insurance form is available at the City's website

[www.brampton.ca/EN/Business/insurance/Pages/welcome.aspx](http://www.brampton.ca/EN/Business/insurance/Pages/welcome.aspx).

The Successful Bidder shall be required to deliver to the Owner an executed City of Brampton Certificate of Insurance form evidencing the insurance as required in Part B Insurance Requirements.

The Owner will only accept insurance policies and/or certificates, where the Owner is named as an additional insured, from issuing institutions that have the following minimum ratings:

Standard & Poor's	-	minimum rating of BBB
Moody's	-	minimum rating of baa
A.M. Best	-	minimum rating of B+

The Certificate of Insurance shall state that if the policy is cancelled, changed or materially altered in any way that would affect the Owner, the insurer will give thirty (30) days prior written notice by registered mail to the Owner.

The Owner reserves the right to require such higher limits of insurance or other types of insurance policies appropriate to this Contract as the Owner may reasonably require from time to time.

The Contractor is responsible for ensuring that any subcontractors used in completion of the work will be insured with the same insurance coverages and limits as noted above.

THE CORPORATION OF THE CITY OF BRAMPTON

Part C Forms

Bid Bond

Bid Call No. T2025-141

**BID BOND**

BOND NO. \_\_\_\_\_

KNOW ALL MEN BY THESE PRESENTS THAT \_\_\_\_\_  
as Principal, hereinafter called the Principal, and

\_\_\_\_\_ a corporation created and  
existing under the laws of Ontario, and duly authorized to transact the business of Suretyship in Ontario as Surety,  
hereinafter called the Surety, are held and firmly bound unto THE CORPORATION OF THE CITY OF BRAMPTON  
as Obligee, hereinafter called the Obligee, in the amount of

\_\_\_\_\_ Dollars,

(\$ \_\_\_\_\_) lawful money of Canada, for the payment of which sum, well and truly to be  
made, the Principal and the Surety bind themselves, their heirs, executors, administrators, successors and assigns,  
jointly and severally, firmly by these presents.

WHEREAS, the Principal has submitted a written Bid to the Obligee, dated the \_\_\_\_\_ day of \_\_\_\_\_  
20\_\_\_\_,

for: \_\_\_\_\_

**DESCRIPTION OF WORK**

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION is such that if the aforesaid Principal shall have the  
Bid accepted within sixty (60) days from the Closing Date and the said Principal will, within the time required, enter into  
a formal contract and give the specified security to secure the performance of the terms and conditions of the Contract,  
then this obligation shall be null and void; otherwise the Principal and the Surety will pay unto the Obligee the difference  
in money between the amount of the Bid of the said Principal and the amount for which the Obligee legally contracts  
with another party to perform the work if the latter amount be in excess of the former.

The Principal and the Surety shall not be liable for a greater sum than the specified penalty of this Bond.

Any suit under this Bond must be instituted before the expiration of seven months from the date of this Bond.

IN WITNESS WHEREOF, The Principal and the Surety have signed and sealed this Bond this \_\_\_\_\_ day of  
\_\_\_\_\_ 20\_\_\_\_\_.

**SIGNED, SEALED AND DELIVERED**

\_\_\_\_\_  
SIGNATURE OF WITNESS  
(if not signed under corporate seal)

\_\_\_\_\_  
NAME OF WITNESS (PRINTED)

By \_\_\_\_\_ (Seal)  
SIGNATURE AND SEAL OF PRINCIPAL  
**I/We have the authority to bind the Corporation**

\_\_\_\_\_  
SURETY (Seal)

By \_\_\_\_\_  
ATTORNEY-IN-FACT

\_\_\_\_\_  
ADDRESS & PHONE NO. OF SURETY

**STATUTORY DECLARATION**

**PROGRESS PAYMENT/RELEASE OF HOLDBACK**

PROVINCE OF ONTARIO ) IN THE MATTER OF an agreement dated the \_\_\_\_\_ day of  
) \_\_\_\_\_, 20\_\_\_\_, made between The Corporation of  
) the City of Brampton and \_\_\_\_\_  
) (the "Contractor"), and identified as Bid Call No. \_\_\_\_\_  
) (the "Contract").

I, \_\_\_\_\_ of the \_\_\_\_\_ of \_\_\_\_\_  
(full name or names)  
in the County/Region of \_\_\_\_\_ do solemnly declare that;

1. I am \_\_\_\_\_ of the Contractor named in the  
(an authorized signing office, partner, sole proprietor)  
above mentioned Contract, which is applying for a second or subsequent progress payment or release of  
Holdback, and as such have personal knowledge of the facts herein declared.
2. To date all accounts for services and materials, including subcontracts, labour, products, construction  
machinery and equipment incurred directly by the Contractor in the performance of the Contractor in the  
performance of the Contract, and for which the Owner might in anyway be held responsible, have been paid  
in full, as required by the Contract, save and except only for the following;
  - a) Funds properly retained as holdback,
  - b) Payments deferred by agreement , or
  - c) Amounts withheld due to a dispute, where the other party or parties to the dispute have been notified of  
the amounts withheld,
3. The specifics of the most recent application for progress payment for which the Contractor has received  
payment are as follows;
 

None to Date  
(OR)  
No.: \_\_\_\_\_ Date: \_\_\_\_\_
4. No application for progress payment has been made for which payment is outstanding
5. The Contractor has not received notice of any claims in connection with the Contract by a third party.
6. I have authority to bind the Contractor.

I make this solemn declaration conscientiously believing it to be true, and knowing that it is of the same force and  
effect as if made under oath.

Declared before me in \_\_\_\_\_ this \_\_\_\_\_ day of \_\_\_\_\_,  
(City/Town)  
20\_\_\_\_.

\_\_\_\_\_  
Signature of Declarant

\_\_\_\_\_  
(A Commissioner for Oaths, Notary Public, etc.)

**PSAB Inventory Management Form**

<b>BUILDINGS</b>	<b>LAND</b>
<input type="checkbox"/> BLDG – CORPORATE	<input type="checkbox"/> LAND
<input type="checkbox"/> BLDG - FIRE	<b>LAND IMPROVEMENTS</b>
<input type="checkbox"/> BLDG – PARKS	<input type="checkbox"/> BENCHES
<input checked="" type="checkbox"/> BLDG – RECREATION CENTRES	<input type="checkbox"/> BLEACHERS
<input type="checkbox"/> BLDG – TRANSIT	<input type="checkbox"/> FLOWER BEDS
<input type="checkbox"/> BLDG – WORKS	<input type="checkbox"/> GARBAGE BINS
<input type="checkbox"/> GAZEBOS & PICNIC TABLES	<input type="checkbox"/> IRRIGATION SPRINKLER SYSTEM
	<input type="checkbox"/> OUTDOOR POOLS (INCLUDING SPLASHPADS)
<b>BUILDING COMPONENTS</b>	<input type="checkbox"/> PARK BRIDGES & CULVERTS
<input type="checkbox"/> BUILDING ENVELOPE	<input type="checkbox"/> PARK PATHWAYS
<input checked="" type="checkbox"/> ELECTRICAL	<input type="checkbox"/> PARK SIGNAGE
<input type="checkbox"/> EXTERIOR DOORS & WINDOWS	<input type="checkbox"/> PARKING LOTS
<input type="checkbox"/> INDOOR EQUIPMENT	<input type="checkbox"/> PATHWAY LIGHTING
<input type="checkbox"/> INTERIOR FINISHES	<input type="checkbox"/> PICNIC TABLES
<input type="checkbox"/> LIFE SAFETY, SECURITY & COMMUNICATIONS	<input type="checkbox"/> PLAYGROUND EQUIPMENT
<input type="checkbox"/> MECHANICAL & PLUMBING	<input type="checkbox"/> SAFETY STATIONS
<input type="checkbox"/> SITE	<input type="checkbox"/> SPORTS FENCING
<input type="checkbox"/> STRUCTURE	<input type="checkbox"/> SPORTS FIELDS
	<input type="checkbox"/> SPORTS LIGHTING
<b>FURNITURE, COMPUTER &amp; OFFICE EQUIPMENT</b>	<input type="checkbox"/> TENNIS COURTS
<input type="checkbox"/> COMPUTER HARDWARE	
<input type="checkbox"/> COMPUTER SOFTWARE	<b>INFRASTRUCTURE</b>
<input type="checkbox"/> DESKTOPS	<input type="checkbox"/> CATCHBASINS
<input type="checkbox"/> ELECTION EQUIPMENT	<input type="checkbox"/> FENCES
<input type="checkbox"/> EMO SPECIALTY ITEMS	<input type="checkbox"/> GATEWAYS
<input type="checkbox"/> FACILITY EQUIPMENT	<input type="checkbox"/> MANHOLES
<input type="checkbox"/> FIBRE OPTIC CABLE NETWORK	<input type="checkbox"/> NOISE ATTENUATION WALLS
<input type="checkbox"/> FURNITURE	<input type="checkbox"/> RAIL SPUR
<input type="checkbox"/> PORTABLE RADIOS	<input type="checkbox"/> RETAINING WALLS
<input type="checkbox"/> POS TERMINALS	<input type="checkbox"/> ROAD BRIDGES & CULVERTS
<input type="checkbox"/> TELEPHONE EQUIPMENT	<input type="checkbox"/> ROAD MONUMENTS
	<input type="checkbox"/> ROADS – ARTERIAL
<b>VEHICLES &amp; MACHINERY</b>	<input type="checkbox"/> ROADS – COLLECTOR
<input type="checkbox"/> FIRE STATION EQUIPMENT	<input type="checkbox"/> ROADS – LOCAL
<input type="checkbox"/> FIRE TRUCKS	<input type="checkbox"/> SAFETY DEVICES
<input type="checkbox"/> HEAVY EQUIPMENT	<input type="checkbox"/> SIDEWALKS
<input type="checkbox"/> HEAVY TRUCKS	<input type="checkbox"/> STORM SYSTEM UNDERGROUND PIPING



THE CORPORATION OF THE CITY OF BRAMPTON

Part C Forms  
**PSAB Inventory Management Form**  
 Bid Call No. T2025-141

<input type="checkbox"/> LICENSED VEHICLES	<input type="checkbox"/> TRANSIT SHELTERS/STOPS/PADS
<input type="checkbox"/> LIGHT TRUCKS	<input type="checkbox"/> WALKWAYS
<input type="checkbox"/> MACHINERY & EQUIPMENT	
<input type="checkbox"/> MOWERS & TRIMMERS	<b>INFRASTRUCTURE (TRAFFIC EQUIPMENT)</b>
<input type="checkbox"/> TRANSIT BUSES	<input type="checkbox"/> PARKING REVENUE EQUIPMENT
	<input type="checkbox"/> STREET LIGHTING
	<input type="checkbox"/> TRAFFIC LIGHTS/CONTROL EQUIPMENT
	<input type="checkbox"/> TRAFFIC SIGNS/STREET SIGNS

**GENERAL CONTRACTOR PERFORMANCE SCORECARD**

SECTION I – SCORECARD INFORMATION				
Scorecard Type:	Select type	Prepared	Name	Department
Scorecard #:	Select #	Date:	Click here to enter a date	
SECTION II – CONTRACTOR DATA		SECTION III – PROJECT DATA		
Purchase Order #:		Bid Call #:		
Vendor's Name:		Project Location:		Ward: #
Vendor's Address:		Contract Start Date:		Actual Start Date:
		Click here to enter a		Click here to enter a
		Contract Completion		Actual Completion
Vendor's Phone:		Click here to enter a		Click here to enter a
Project Manager:	Site Superintendent:	Contract Award		Final Contract Amount:
Brief Description of Work:				
RATINGS GUIDE				
SCORE		DESCRIPTION		
N/A	NOT APPLICABLE	Deliverable or task is not applicable to this project.		
3	POOR	Deliverable or task is substantially deficient. Issue identified. Not resolved. Negative impact on Budget and or Schedule and or Quality.		
5	BELOW AVERAGE	Deliverable or task is somewhat deficient. Issue identified. Resolved. However, negative impact on Budget and or Schedule and or Quality.		
7	AVERAGE	Deliverable or task is acceptable. Issue identified and proactively resolved. No impact on Budget and or Schedule and or Quality.		
9	ABOVE AVERAGE	Deliverable or task is performed with exceptional service. No issues identified, or proactively resolved any identified issues. Resolution had a positive impact on budget and/or schedule and/or quality, or mitigated negative impacts on project outcome.		

SECTION IV – NUMERICAL RATING	
<b>1. SAFETY AND COMPLIANCE</b>	<b>RATINGS</b>
a. Compliance with OHSA	
b. Maintained site safety	
c. Maintained clean site (and access roads), housekeeping	
d. Submit site specific H&S plan	
e. Immediate action for notices/incidents/safety issues	
<b>TOTAL</b>	
<b>2. QUALITY AND CONFORMANCE</b>	
a. Provision of adequate and competent site supervision	
b. Quality and workmanship in conformance to contract requirements	
c. Damage to existing facility or property	
d. Coordination between sub-trades	
e. Resolution of deficiencies identified during construction	

<b>TOTAL</b>				
<b>3. PROJECT COMMENCEMENT</b>				
a. Timely submission and execution of contract documents				
b. Submission of Schedule of Values				
c. Submission of acceptable Baseline Schedule				
d. Commencement of work by the contractually required or agreed to revised start				
e. Mobilization and Coordination of resources including sub-trades				
<b>TOTAL</b>				
<b>4. PROJECT MANAGEMENT</b>				
a. Updates to Baseline Schedule as required by contract				
b. Conducting construction meetings, issue meeting minutes				
c. Submission of invoices/progress draws accurately complete with WSIB and Stat				
d. Reasonable and competitive CO pricing in timely manner				
e. Sub-trade liens				
<b>TOTAL</b>				
<b>5. PROJECT EXECUTION</b>				
a. Prompt compliance with COs, CDs, SIs, etc.				
b. Submission of reviewed quality shop drawings				
c. Commissioning of systems				
d. Timely material on site				
e. Substantial Performance achieved as per contractual requirement or agreed				
<b>TOTAL</b>				
<b>6. POST CONSTRUCTION</b>				
a. Total completion achieved as per contract requirements				
b. Response to Warranty Action items				
c. Resolution of deficiencies during warranty period				
d. Submission of As-Built, O&M manuals				
e. Training for staff on systems and maintenance				
<b>TOTAL</b>				
<b>7. CLIENT AND PUBLIC RELATIONS</b>				
a. Conduct of contractor's staff in professional and harmonious manner				
b. Clear and concise written communications				
c. Timely communication with City staff for access, shut-downs, etc.				
d. Team player and shows initiative to resolve issues and implement solutions				
e. Responsive to project team				
f. Relevance of RFIs				
<b>TOTAL</b>				
<b>GRAND TOTAL (1-7)</b>				
<b>Overall Performance Rating:</b>	<b>POOR</b> <input type="checkbox"/> <b>&lt;50%</b>	<b>BELOW AVERAGE</b> <input type="checkbox"/> <b>50-69%</b>	<b>AVERAGE</b> <input type="checkbox"/> <b>70-79%</b>	<b>ABOVE AVERAGE</b> <input type="checkbox"/> <b>&gt;80</b>

### SECTION V – AUTHENTICATION AND RECOMMENDATION

I have evaluated the Vendor's performance in accordance with the Evaluation Process and have assigned a fair and objective rating to each criterion in Section IV of this Performance Scorecard.

**Comments:**

I met with the Vendor on [Click here to enter a date](#) to discuss this Performance Scorecard and I have considered the Vendor's comments in making the below recommendation.

Based on my evaluation of the Vendor's performance in accordance with this Performance Scorecard, the following is recommended (the "Recommendation"):

- ☐ The Vendor continue participating in the City's procurement opportunities.
- ☐ The City suspend the Vendor from participating in its procurement opportunities for a period of 1 or 3 years in accordance with the City's Vendor Suspension Administrative Directive.

State suspension period: [Time period](#)

City Contracts Manager

_____	_____	_____
Print Name	Signature	Date
Manager or Supervisor		
_____	_____	_____
Print Name	Signature	Date

**TO BE COMPLETED ONLY IF THE RECOMMENDATION IS TO SUSPEND THE VENDOR:**

We confirm that we have reviewed this Performance Scorecard and discussed the ratings and recommendations with the City Contracts Manager, and have obtained the Manager's confirmation that the Performance Scorecard accurately reflects the Vendor's performance. We hereby approve or reject the recommendation as follows:

Director

APPROVE    REJECT

<input type="checkbox"/> <input type="checkbox"/>	_____	_____
	Print Name	Signature
		Date

Comments:

Department Head

APPROVE    REJECT

<input type="checkbox"/> <input type="checkbox"/>	_____	_____
	Print Name	Signature
		Date

Comments:

Purchasing Agent

APPROVE    REJECT

<input type="checkbox"/> <input type="checkbox"/>	_____	_____
	Print Name	Signature
		Date

Comments:

Attachments:

Refer to the attached Specifications and Drawings.

Specifications - 149 pages

Mechanical Drawings - 4 sheets

Electrical Drawings – 8 sheets

Construction Period Starts: May 01, 2025

Substantial Performance: Aug 30, 2025

Please find below a **preview only** of certain schedules that will need to be **completed online only** through the Bidding System by the Bidder as part of your Bid submission.

The Bidder acknowledges that the preview below is provided as a courtesy only (to assist the Bidder in determining the size and scope of the project, etc.) and shall not be relied upon in any way.

Please note that the schedules shown below are **subject to change by addenda** issued by the Owner. Following the issuance of addenda, such changes may be reflected in the electronic schedules to be completed, but will not be reflected in this document. It is the Bidder's responsibility to review all addenda and ensure that the Bid is submitted based on the current requirements.

For greater certainty, the Bidder shall submit its Bid by completing all schedules and fields in the online Bidding System. Any Bid submitted on the basis of the preview schedules below may, in the Owner's sole discretion, be disqualified and rejected on the basis of being incomplete.



**City of Brampton**

**CITY OF BRAMPTON  
JIM ARCHDEKIN RECREATION CENTRE  
MECHANICAL AND ELECTRICAL UPGRADES**

292 Conestoga Drive  
Brampton, ON L6Z 3M1

APRIL 2025

**SUBMITTED BY:**



Phone: 905 274-7556  
Fax: 905 274-5382  
2902 S. Sheridan Way,  
Ste. 300, Oakville, ON. L6J 7L6  
**[www.moon-matz.com](http://www.moon-matz.com)**

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**CITY OF BRAMPTON  
JIM ARCHDEKIN RECREATION CENTRE  
MECHANICAL AND ELECTRICAL UPGRADES**

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NOVEMBER 2024**

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Section	01 35 43	Environmental Protection
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### **DIVISION 22 – PLUMBING**

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### **DIVISION 23 – HEATING, VENTILATING AND AIR CONDITIONING (HVAC)**

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### **DIVISION 26 – ELECTRICAL**

Section	26 05 00	General Instructions for Electrical
Section	26 05 10	Electrical Basic Materials
Section	26 24 10	Electrical Distribution



## SUMMARY OF WORK

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### **PART 1 - General**

#### **1.1 SECTION INCLUDES**

- (a) Documents
- (b) Description of the Work.
- (c) Contract method.
- (d) Documents provided.
- (e) Performance of the Work.
- (f) Work sequence.
- (g) Phasing

#### **1.2 RELATED SECTIONS**

- (a) Section 01 78 10 - Closeout Submittals.
- (b) This section describes requirements applicable to all Sections and including any specifications on drawings.

#### **1.3 RELATED DOCUMENTS**

- (a) Agreement, General Conditions, and Supplementary Conditions.
- (b) Other Division 1 specification sections.
- (c) This section describes requirements applicable to all Sections within Divisions 02 through to 32.

#### **1.4 WORDS AND TERMS**

- (a) Refer to and acknowledge other words, terms, and definitions in CCDC 2 Definitions.

#### **1.5 DESCRIPTION OF THE WORK**

- (a) Drawings indicate general location and route of conduit and wire/conductors. Install conduit or wiring/conductors not shown or indicated diagrammatically in schematic or riser diagrams to provide an operational assembly or system.
- (b) Install components to physically conserve headroom, to minimize furring spaces, or obstructions.
- (c) Locate devices with primary regard for convenience of operation and usage.

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- (d) Examine all discipline drawings, specifications, and schedules and related Work to ensure that Work can be satisfactorily executed. Conflicts or additional work beyond work described to be brought to attention of Consultant.
- (e) Staging work to be carried out under this contract includes, but is not limited to the following:
  - (i) Hoarding to separate construction into zones
- (f) Demolition work to be carried out under this contract includes, but is not limited to the following:
  - (i) Demolition of existing mechanical and electrical work as indicated on Contract Drawings.
  - (ii) interior partition wall, exterior and interior load bearing walls, windows, doors, framing, lintels, etc. as indicated on the drawings.
- (g) Proposed work to be carried out under this contract includes, but is not limited to the following:
  - (i) Mechanical and electrical work as indicated on Contract Drawings.
  - (ii) Replacement of HVAC, dehumidifiers, plumbing and drainage, fire pump and pumps, all associated piping, ducting, valves and accessories as shown on the mechanical drawings and as required including necessary materials, parts and draining, flushing, scoping, testing and filling of associated piping systems and supply of additional materials to make the systems functional as before.
  - (iii) Replace exhaust fans, ductwork, thermostatic controls and accessories. Quantity, type and sizing of fans is indicated on drawings.
  - (iv) Mechanical start-up of equipment, testing, adjusting, balancing and detailed commissioning of all affected equipment and systems.
  - (v) Power distribution equipment including paperboards, transformers, starters for mechanical equipment, disconnect switches, conduit, wiring, grounding system, hardware and accessories.
  - (vi) Electrical connections to mechanical equipment
  - (vii) Electrical commissioning including startup and testing
  - (viii) All related equipment, process piping, site work, plumbing and electrical work and all necessary for a complete job in accordance with the details set out more specifically hereafter and as shown on the accompanying Contract Drawings.

### **1.6 WORK SEQUENCE**

- (a) Construct Work in stages during the construction period; coordinate construction schedule and operations with Owner and Consultant.

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- (b) Maintain fire access and control of fire protection equipment.

### **PART 2 - Products**

#### **2.1 NOT USED**

- (a) Not Used

### **PART 3 - Execution**

#### **3.1 NOT USED**

- (a) Not Used

END OF SECTION

## PRODUCT EXCHANGE PROCEDURES

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### **PART 1 - General**

#### **1.1 SECTION INCLUDES**

- (a) Substitutions.
- (b) Alternatives or Alternates.

#### **1.2 RELATED SECTIONS**

- (a) This section describes requirements applicable to all Sections and including any specifications on drawings

#### **1.3 SUBSTITUTIONS/EXCHANGE**

- (a) The General Conditions specify time restrictions for submitting requests for Substitutions during the bidding period to requirements specified in this Section.
- (b) Consultant will consider requests for Substitutions only within fifteen (15) days after date of Owner-Contractor Agreement.
- (c) For Specification sections that do not have a 'Base Bid' Products/System or approved alternates and, instead specify performance criteria for the Product or System, the Contractor shall submit their Product or System information in accordance with Section 01 33 00 – Submittal Procedures.
- (d) Substitutions may be considered when a specified Product becomes unavailable through no fault of the Contractor.
- (e) Document each request with complete data substantiating compliance of proposed Substitution with Contract Documents.
- (f) A request constitutes a representation that the Bidders/Contractor:
  - (i) Has investigated proposed Product and determined that it meets or exceeds the quality level of the specified Product.
  - (ii) Will provide the same warranty for the Substitution as for the specified Product.
  - (iii) Will coordinate installation and make changes to other Work which may be required for the Work to be complete with no additional cost to Owner.
  - (iv) Waives claims for additional costs or time extension which may subsequently become apparent.
- (g) Substitution Submittal Procedure:

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- (i) Submit one (1) copies of request for Substitution for consideration. Limit each request to one (1) proposed Substitution.
- (ii) Submit shop drawings, product data, and certified test results attesting to the proposed Product equivalence. Burden of proof is on proposer.
- (iii) The Consultant will notify Contractor in writing of decision to accept or reject request.

### **PART 2 - Products**

#### **2.1 NOT USED**

- (a) Not Used

### **PART 3 - Execution**

#### **3.1 NOT USED**

- (a) Not Used

**END OF SECTION**

## PROJECT MANAGING AND COORDINATION

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### **PART 1 - General**

#### **1.1 SECTION INCLUDES**

- (a) Coordination Work with other contractors and work by Owner under administration of Consultant.
- (b) Pre-installation and scheduled progress meetings.

#### **1.2 RELATED SECTIONS**

- (a) Section 01 10 00 - Summary of Work
- (b) Section 01 33 00 - Submittal Procedures.
- (c) This section describes requirements applicable to all Sections and including any specifications on drawings.

#### **1.3 COORDINATION**

- (a) Perform coordination of progress schedules, submittals, use of site, temporary utilities, construction facilities, and construction Work, with progress of Work of others, under instructions of Consultant.

#### **1.4 PROJECT MEETINGS**

- (a) Schedule and administer bi-weekly project meetings throughout progress of Work as determined by Consultant.
- (b) Schedule and administer pre-installation meetings when specified in sections and when required to coordinate related or affected Work.
- (c) Prepare agenda for meetings.
- (d) Distribute written notice of each meeting four days in advance of meeting date to Consultant.
- (e) Provide physical space and make arrangements for meetings.
- (f) Preside at meetings.
- (g) Record minutes. Include significant proceedings and decisions. Identify action by parties.
- (h) Reproduce and distribute copies of minutes within three days after each meeting and transmit to meeting participants, affected parties not in attendance.

#### **1.5 CLOSEOUT PROCEDURES**

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- (a) Accompany Consultant on preliminary inspection to determine items listed for completion or correction.
- (b) Comply with Consultant's instructions for correction of items of Work listed in executed certificate of Substantial Performance and at the satisfaction of the City of Toronto. Notify Consultant of instructions for completion of items of Work determined in Consultant's final inspection.

### **PART 2 - Products**

#### **2.1 NOT USED**

- (a) Not Used

### **PART 3 - Execution**

#### **3.1 NOT USED**

- (a) Not Used

END OF SECTION

## SUBMITTAL PROCEDURES

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### **PART 1 - General**

#### **1.1 SECTION INCLUDES**

- (a) Shop drawings and product data.
- (b) Samples.
- (c) Certificates and transcripts.

#### **1.2 RELATED SECTIONS**

- (a) Section 01 78 10 - Closeout Submittals.
- (b) Other sections requesting submittals.
- (c) This section describes requirements applicable to all Sections and including any specifications on drawings
- (d) This section does not cover submissions required for Close-Out, Warranty, and other requirements requested upon completion of the Work.

#### **1.3 ADMINISTRATIVE**

- (a) Work affected by submittal shall not proceed until review and acceptance has been provided by the Consultant.
- (b) Present shop drawings, product data, samples and mock-ups in Imperial and SI Metric units.
- (c) Where items or information is not manufactured or produced in Imperial and SI Metric units; convert values for inclusion.
- (d) Submittals not stamped, signed, dated, identified as to specific project, and attesting to their being reviewed will be returned without being examined and shall be considered rejected.
- (e) Keep one reviewed copy of each submission on site.

#### **1.4 SHOP DRAWINGS AND PRODUCT DATA**

- (a) Indicate materials, methods of construction and attachment or anchorage, erection diagrams, connections, explanatory notes and other information necessary for completion of Work. Where articles or equipment attach or connect to other articles or equipment, indicate that such items have been coordinated, regardless of Section under which adjacent items will be supplied and installed. Indicate cross references to design drawings and specifications.
- (b) Allow ten (10) days for Consultant's review of each submission. Large packages of shop drawings shall be accepted and reviewed in logical stages or parts to accommodate processing of the review for the Consultant within the allowed period.



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- (c) Adjustments made on shop drawings by Consultant are not intended to change Contract Price. If adjustments affect value of Work, state such in writing to Consultant prior to proceeding with Work.
- (d) Contractor shall make changes in shop drawings as Consultant may require, consistent with Contract Documents. When resubmitting, notify Consultant in writing of any revisions other than those requested.
- (e) Accompany submissions with duplicate transmittal letter, containing:
  - (i) Date.
  - (ii) Project title and number.
  - (iii) Contractor's name and address.
  - (iv) Identification and quantity of each shop drawing, product data and sample.
  - (v) Other pertinent data.
- (f) Submissions shall include:
  - (i) Date and revision dates.
  - (ii) Project title and number.
  - (iii) Name and address of:
    - (a) Subcontractor.
    - (b) Supplier.
    - (c) Manufacturer.
  - (iv) Contractor's stamp, signed by Contractor's authorized representative certifying approval of submissions, verification of field measurements and compliance with Contract Documents.
  - (v) Details of appropriate portions of Work as applicable and including but is not limited to:
    - (a) Fabrication.
    - (b) Layout, showing dimensions, including identified field dimensions, and clearances.
    - (c) Setting or erection details.
    - (d) Capacities.

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- (e) Performance characteristics.
  - (f) Standards.
  - (g) Operating weight.
  - (h) Wiring diagrams.
  - (i) Single line and schematic diagrams.
  - (j) Relationship to other parts of the Work.
- (g) After Consultant's review, distribute copies.
- (h) Submit a digital copy in PDF format of shop drawings for each requirement requested in specification Sections and as consultant may reasonably request.
- (i) Submit a digital copy of product data sheets or brochures for requirements requested in specification sections and as requested by Consultant where shop drawings will not be prepared due to standardized manufacture of product.
- (j) Delete information not applicable to project.
- (k) Supplement standard information to provide details applicable to project.
- (l) If upon review by Consultant, no errors or omissions are discovered or if only minor corrections are made, accepted shop drawings will be returned to the contractor. Fabrication and installation of Work may proceed.
- (m) If upon review by Consultant, shop drawings are rejected or re-submission is requested, a noted copy of will be returned to the contractor. Through the same procedure indicated above, the Contractor shall re-submit the corrected shop drawings.

### 1.5 **SAMPLES**

- (a) Submit for review samples in duplicate as requested in respective specification Sections.
- (b) Label samples with origin and intended use.
- (c) Deliver samples prepaid to Consultant's business address.
- (d) Notify Consultant in writing, at time of submission of deviations in samples from requirements of Contract Documents.
- (e) Where colour, pattern or texture is criterion, submit full range of samples.
- (f) Adjustments made on samples by Consultant are not intended to change Contract Price. If adjustments affect value of Work, state such in writing to Consultant prior to proceeding with Work.

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- (g) Make changes in samples which Consultant may require, consistent with Contract Documents.
- (h) Reviewed and accepted samples will become standard of workmanship and material against which installed Work will be verified.

### **PART 2 - Products**

#### **2.1 NOT USED**

- (a) Not Used

### **PART 3 - Execution**

#### **3.1 NOT USED**

- (a) Not Used

**END OF SECTION**

## ENVIRONMENTAL PROTECTION

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### **PART 1 - General**

#### **1.1 DESCRIPTION**

- (a) This section specifies the environmental protection controls and devices required by the Work including but not limited to Excess Soil Legislation for the Province of Ontario.

#### **1.2 RELATED WORK**

- (a) Cleaning and Waste Processing: Section 01 74 00

#### **1.3 REFERENCES**

- (a) Management and Disposal of Waste: OPSS 180

#### **1.4 SCOPE OF WORK**

- (a) Providing environmental protection is considered incidental to the Work and is the Contractor's responsibility. All costs associated with abiding by these requirements shall not be paid for separately and shall be included in the prices bid for the Work.
- (b) Should the Contractor be negligent of his duties as required herein, or should the Consultant deem that the controls emplaced by the Contractor are insufficient to provide the sufficient environmental protection and City forces are required to satisfactorily provide environmental protection, the cost of performing these obligations on behalf of the Contractor will be deducted from the monies owing the Contractor.

#### **1.5 FIRES**

- (a) Fires and burning of rubbish or cleared materials on site is not permitted.

#### **1.6 DISPOSAL OF WASTES**

- (a) Do not bury rubbish and waste materials on site.
- (b) Do not dispose of waste or volatile materials, such as mineral spirits, oil or paint thinner into waterways, storm or sanitary sewers.

### **PART 2 - Products**

#### **2.1 NOT USED**

- (a) Not Used

### **PART 3 - Execution**

#### **3.1 NOT USED**

**ENVIRONMENTAL PROTECTION**

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(a) Not Used

**END OF SECTION**

## WASTE MANAGEMENT AND DISPOSAL

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### 1 General

#### 1.1 Waste Management Goals

- .1 Prior to start of Work conduct meeting with the Owner's representative to review and discuss Waste Management Plan and Goals.
- .2 The overall intent is to safely dispose all waste from the site after completion of demolition of existing equipment (e.g. compressors, motors, evaporative cooler, pumps, poly pipes, steel piping, valves, , etc.) and to dispose of all working fluids (such as Ammonia, brine, compressor oil, etc.)
- .3 Accomplish maximum control of solid construction waste.
- .4 Preserve environment and prevent pollution and environment damage.

#### 1.2 Related Sections

- .1 Section 01 74 00 – Cleaning

#### 1.3 References

- .1 LEED Canadian Green Building Council (CGBC), Green Building Rating System, For New Construction and Major Renovations LEED Canada-NC, Version 1.0 - December 2004.

#### 1.4 Definitions

- .1 Class III: non-hazardous waste - construction renovation and demolition waste.
- .2 Cost/Revenue Analysis Workplan (CRAW): based on information from WRW, and intended as financial tracking tool for determining economic status of waste management practices.
- .3 Demolition Waste Audit (DWA): relates to actual waste generated from project.
- .4 Inert Fill: inert waste - exclusively asphalt and concrete.
- .5 Materials Source Separation Program (MSSP): consists of series of ongoing activities to separate reusable and recyclable waste material into material categories from other types of waste at point of generation.
- .6 Recyclable: ability of product or material to be recovered at end of its life cycle and re manufactured into new product for reuse.
- .7 Recycle: process by which waste and recyclable materials are transformed or collected for purpose of being transferred into new products.
- .8 Recycling: process of sorting, cleansing, treating and reconstituting solid waste and other discarded materials for purpose of using in altered form. Recycling does not include burning, incinerating, or thermally destroying waste.
- .9 Reuse: repeated use of product in same form but not necessarily for same purpose. Reuse includes:
  - .1 Salvaging reusable materials from re modelling projects, before demolition stage, for resale, reuse on current project or for storage for use on future projects.
  - .2 Returning reusable items including pallets or unused products to vendors.
- .10 Salvage: removal of structural and non-structural materials from deconstruction/disassembly projects for

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purpose of reuse or recycling.

- .11 Separate Condition: refers to waste sorted into individual types.
- .12 Source Separation: acts of keeping different types of waste materials separate beginning from first time they became waste.
- .13 Waste Audit (WA): detailed inventory of materials in building. Involves quantifying by volume/weight amounts of materials and wastes generated during construction, demolition, deconstruction, or renovation project. Indicates quantities of reuse, recycling and landfill. Refer to Schedule A.
- .14 Waste Management Co-ordinator (WMC): contractor representative responsible for supervising waste management activities as well as coordinating related, required submittal and reporting requirements.
- .15 Waste Reduction Workplan (WRW): written report which addresses opportunities for reduction, reuse, or recycling of materials. Refer to Schedule B. WRW is based on information acquired from WA (Schedule A).

### 1.5 Documents

- .1 Maintain at job site, one copy of following documents:
  - .1 Waste Audit
  - .2 Waste Reduction Workplan
  - .3 Material Source Separation Plan
  - .4 Schedules A to D and MSSP shall be completed for project.

### 1.6 Submittals

- .1 Submittals in accordance with Section 01 33 00 – Submittal Procedures.
- .2 Prepare and submit following prior to project start up:
  - .1 Submit two (2) copies of completed Waste Audit (WA): Schedule A.
  - .2 Submit two (2) copies of completed Waste Reduction Workplan (WRW): Schedule B.
  - .3 Submit two (2) copies of completed Demolition Waste Audit (DWA): Schedule C.
  - .4 Submit two (2) copies of Cost/Revenue Analysis Workplan (CRAW): Schedule D.
  - .5 Submit two (2) copies of Materials Source Separation Program (MSSP) description.
- .3 Submit before final payment summary of waste materials salvaged for reuse, recycling or disposal by project using deconstruction/disassembly material audit form.
  - .1 Failure to submit could result in hold back of final payment.
  - .2 Provide receipts, scale tickets, waybills, and show quantities and types of materials reused, recycled, co-mingled and separated off site or disposed of.
  - .3 For each material reused, sold or recycled from project, include amount in tonnes and quantities by number, type and size of items and the destination.
  - .4 For each material land filled or incinerated from project, include amount in tonnes of material

and identity of landfill, incinerator or transfer station.

**1.7 Waste Audit (WA)**

- .1 Conduct WA prior to project start up.
- .2 Prepare WA: Schedule A.
- .3 Record, on WA – Schedule A, extent to which materials or products used consist of recycled or reused materials or products.

**1.8 Waste Reduction Workplan (WRW)**

- .1 Prepare WRW prior to project start up.
- .2 WRW should include but not limited to:
  - .1 Destination of materials listed.
  - .2 Deconstruction/disassembly techniques and sequencing.
  - .3 Schedule for deconstruction/disassembly.
  - .4 Location
  - .5 Security
  - .6 Protection
  - .7 Clear labelling of storage areas.
  - .8 Details on materials handling and removal procedures.
  - .9 Quantities for materials to be salvaged for reuse or recycled and materials sent to landfill.
- .3 Structure WRW to prioritize actions and follow 3R's hierarchy, with Reduction as first priority, followed by Reuse, then Recycle.
- .4 Describe management of waste.
- .5 Identify opportunities for reduction, reuse, and recycling of materials. Based on information acquired from WA.
- .6 Post WRW or summary where workers at site are able to review content.
- .7 Set realistic goals for waste reduction, recognize existing barriers and develop strategies to overcome these barriers.
- .8 Monitor and report on waste reduction by documenting total volume and cost of actual waste removed from project.

**1.9 Demolition Waste Audit (DWA)**

- .1 Prepare DWA prior to project start up.
- .2 Complete DWA: Schedule C.
- .3 Provide inventory of quantities of materials to be salvaged for reuse, recycling, or disposal.



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### 1.10 Cost/Revenue Analysis Workplan (CRAW)

- .1 Prepare CRAW: Schedule D.

### 1.11 Materials Source Separation Program (MSSP)

- .1 Prepare MSSP and have ready for use prior to project start up.
- .2 Implement MSSP for waste generated on project in compliance with approved methods and as directed by Owner.
- .3 Provide onsite facilities for collection, handling, and storage of anticipated quantities of reusable and recyclable materials.
- .4 Provide containers to deposit reusable and recyclable materials.
- .5 Locate containers in locations, to facilitate deposit of materials without hindering daily operations.
- .6 Locate separated material[s] in area[s] which minimize material damage.
- .7 Collect, handle, store on site, and transport off site, salvaged materials in separate condition.
  - .1 Transport to approved and authorized recycling facility.
- .8 Collect, handle, store on site, and transport off site, salvaged materials in combined condition.
  - .1 Ship materials to site operating under Certificate of Approval.
  - .2 Materials must be immediately separated into required categories for reuse or recycling.

### 1.12 Storage, Handling and Protection

- .1 Store, materials to be reused, recycled and salvaged in locations as directed by the Owner.
- .2 Unless specified otherwise, materials for removal becomes Contractor's property.
- .3 Protect, stockpile, store and catalogue salvaged items.
- .4 Separate non salvageable materials from salvaged items. Transport and deliver non salvageable items to licensed disposal facility.
- .5 Protect structural components not removed for demolition from movement or damage.
- .6 Support affected structures. If safety of building is endangered, cease operations and immediately notify the Owner's representative.
- .7 Protect surface drainage, mechanical and electrical from damage and blockage.
- .8 Separate and store materials produced during dismantling of structures in designated areas.
- .9 Prevent contamination of materials to be salvaged and recycled and handle materials in accordance with requirements for acceptance by designated facilities.
  - .1 On site source separation is recommended.
  - .2 Remove co-mingled materials to off-site processing facility for separation.
  - .3 Provide waybills for separated materials.

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### 1.13 Disposal of Wastes

- .1 Do not bury rubbish or waste materials.
- .2 Do not dispose of waste into waterways, storm, or sanitary sewers.
- .3 Keep records of construction waste including:
  - .1 Number and size of bins.
  - .2 Waste type of each bin.
  - .3 Total tonnage generated.
  - .4 Tonnage reused or recycled.
  - .5 Reused or recycled waste destination.
- .4 Remove materials from deconstruction as deconstruction/disassembly Work progresses.
- .5 Prepare project summary to verify destination and quantities on a material by material basis as identified in pre demolition material audit.

### 1.14 Use of Site and Facilities

- .1 Execute work with least possible interference or disturbance to normal use of premises.
- .2 Maintain security measures established by existing facility and provide temporary security measures approved by the Owner.

### 1.15 Scheduling

- .1 Coordinate Work with other activities at site to ensure timely and orderly progress of Work.
- .2 Coordinate all construction and demolition activities with the owner.
- .3 Provide 48-hour advance notice to the owner prior to decommissioning of existing system(s).

## 2 Products

### 2.1 Not Used

- .1 Not used

## 3 Execution

### 3.1 Selective Demolition

- .1 Do not demolish facility elements beyond what is indicated on Drawings without approval by the Owner.

### 3.2 Application

- .1 Do Work in compliance with WRW.
- .2 Handle waste materials not reused, salvaged, or recycled in accordance with appropriate regulations and codes.
- .3 Dispose all demolish equipment and materials in accordance with MOE guide lines and applicable by-laws. Provide documentation for the same.

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### 3.3 Cleaning

- .1 Remove tools and waste materials on completion of Work, and leave work area in clean and orderly condition.
- .2 Clean-up work area as work progresses.
- .3 Source separate materials to be reused/recycled into specified sort areas.

### 3.4 Diversion of Materials

- .1 From following list, separate materials from general waste stream and stockpile in separate piles or containers, as reviewed by the Owner, and consistent with applicable fire regulations.

- .1 Mark containers or stockpile areas.
- .2 Provide instruction on disposal practices.

- .2 On-site sale of salvaged, recovered, reusable, recyclable materials is not permitted.

- .3 Demolition Waste:

Material Type	Recommended Diversion %	Actual Diversion %
Acoustic Tile	[50]	[ ]
Acoustical Insulation	[100]	[ ]
Carpet	[100]	[ ]
De-mountable Partitions	[80]	[ ]
Doors and Frames	[100]	[ ]
Electrical Equipment	[80]	[ ]
Furnishings	[80]	[ ]
Marble Base	[100]	[ ]
Mechanical Equipment	[100]	[ ]
Metals	[100]	[ ]
Rubble	[100]	[ ]
Wood (uncontaminated)	[100]	[ ]
Other		[ ]

- .4 Constructions Waste:

Material Type	Recommended Diversion %	Actual Diversion %
Cardboard	[100]	[ ]
Plastic Packaging	[100]	[ ]

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Material Type	Recommended Diversion %	Actual Diversion %
Rubble	[100]	[ ]
Steel	[100]	[ ]
Wood (uncontaminated)	[100]	[ ]
Other		[ ]

### 3.5 Waste Audit (WA)

.1 Schedule A – Waste Audit (WA):

(1) Material Category	(2) Material Quantity Unit	(3) Estimated Waste %	(4) Total Quantity of Waste (unit)	(5) Generation Point	(6) % Recycled	(7) % Reused
Wood and Plastics Material Description						
Off-cuts						
Warped Pallet Forms						
Plastic Packaging						
Cardboard Packaging						
Other						
Doors and Windows Material Description						
Painted Frames						
Glass						
Wood						
Metal						
Other						

### 3.6 Waste Reduction Workplan (WRW)

.1 Schedule B:

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(1) Material Category	(2) Person(s) Responsible	(3) Total Quantity of Waste (unit)	Reused Amount (units) Projected	Actual	(5) Recycled Amount (unit) Projected	Actual	(6) Material(s) Destination
Wood and Plastics Material Description							
Chutes							
Warped Pallet Forms							
Plastic Packaging							
Cardboard Packaging							
Other							
Doors and Windows Material Description							
Painted Frames							
Glass							
Wood							
Metal							
Other							

## 3.7 Demolition Waste Audit (DWA)

.1 Schedule C – Demolition Waste Audit (DWA):

(1) Material Description	(2) Quantity	(3) Unit	(4) Total	(5) Volume (cum)	(6) Weight (cum)	(7) Remarks and Assumptions
Wood						
Wood Stud						

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(1) Material Description	(2) Quantity	(3) Unit	(4) Total	(5) Volume (cum)	(6) Weight (cum)	(7) Remarks and Assumptions
Plywood						
Baseboard-Wood						
Door Trim – Wood						
Cabinet						
Doors and Windows						
Panel Regular						
Slab Regular						
Wood Laminate						
Byfold – Closet						
Glazing						

## 3.8 Cost/Revenue Analysis Workplan (CRAW)

.1 Schedule D – Cost/Revenue Analysis Workplan (CRAW):

(1) Material Description	(2) Total Quantity (unit)	(3) Volume (cum)	(4) Weight (cum)	(5) Disposal Cost/Credit \$(+/-)	(6) Category Sub-Total \$(+/-)
Wood					
Wood Stud					
Plywood					
Baseboard - Wood					
Door Trim - Wood					
Cabinet					\$
Doors and Windows					

## WASTE MANAGEMENT AND DISPOSAL

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(1) Material Description	(2) Total Quantity (unit)	(3) Volume (cum)	(4) Weight (cum)	(5) Disposal Cost/Credit \$(+/-)	(6) Category Sub-Total \$(+/-)
Panel Regular					
Slab Regular					
Wood Laminate					
Byfold – Closet					
Glazing					\$
		(7) Cost (-) / Revenue (+)			\$

End of Section

## REGULATORY REQUIREMENTS

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### **PART 1 - General**

#### **1.1 SECTION INCLUDES**

- (a) Laws, notices, permits and fees.
- (b) Discovery of hazardous materials.

#### **1.2 RELATED SECTIONS**

- (a) This section describes requirements applicable to all Sections and including any specifications on drawings

#### **1.3 LAWS, NOTICES, PERMITS AND FEES**

- (a) The laws of the Place of the Work shall govern the Work.
- (b) The Owner shall obtain and pay for the building permit, permanent easements and rights of servitude. The Contractor shall be responsible for permits, licenses or certificates necessary for the performance of the Work which were in force at the date of executing the Agreement.
- (c) Give the required notices and comply with the laws, ordinances, rules, regulations or codes which are or become in force during the performance of the Work and which relate to the Work, to the preservation of the public health and to construction safety.
- (d) If the Contractor knowingly performs or allows work to be performed that is contrary to any laws, ordinances, rules, regulations or codes, the Contractor shall be responsible for and shall correct the violations thereof; and shall bear the costs, expenses and damages attributable to the failure to comply with the provisions of such laws, ordinances, rules, regulations or codes. Determine detailed requirements of authorities having jurisdiction.
- (e) Pay construction damage deposits levied by municipality in connection with the issuance of a building permit.

#### **1.4 HAZARDOUS MATERIAL DISCOVERY**

- (a) Asbestos: If material resembling asbestos is encountered in course of demolition work, immediately stop work and notify Consultant.
- (b) Asbestos and PCB: Any materials, equipment or fixtures encountered that are suspect as to containing PCB's shall be disposed according to Ontario Regulation 362 – Waste Management - PCBs.



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### 1.5 PERSONNEL SMOKING AND VAPING

- (a) Smoking and vaping is not permitted within the work area. Comply with regulatory and Owner imposed smoking restrictions during execution of the Work within or outside the premises.

### PART 2 - Products

#### 2.1 NOT USED

- (a) Not Used

### PART 3 - Execution

#### 3.1 NOT USED

- (a) Not Used

END OF SECTION

## QUALITY ASSURANCE

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### **PART 1 - General**

#### **1.1 RELATED SECTIONS**

- (a) Section 01 45 00 - Quality Control.
- (b) This section describes requirements applicable to all Sections and including any specifications on drawings

#### **1.2 QUALITY ASSURANCE**

- (a) Cooperate with testing organization services as specified in Section 01 45 00 - Quality Control.
- (b) Testing organization: Current member in good standing of their respective professional or industry organization and certified to perform specified services.
- (c) Comply with applicable procedures and standards of the certification sponsoring association.
- (d) Perform services under direction of supervisor qualified under certification requirements of sponsoring association.
- (e) Qualifications:
  - (i) Provide adequate workforce training through meetings and demonstrations.
  - (ii) Have someone on site with deconstruction experience throughout project for consultation and supervision purposes.

### **PART 2 - Products**

#### **2.1 NOT USED**

- (a) Not Used

### **PART 3 - Execution**

#### **3.1 NOT USED**

- (a) Not Used

**END OF SECTION**

**PART 1 - General**

**1.1 SECTION INCLUDES**

- (a) Shop drawings and product data.
- (b) Inspection and testing, administrative and enforcement requirements.
- (c) Mock-ups.
- (d) Mill tests.
- (e) Equipment and system adjust and balance.

**1.2 RELATED SECTIONS**

- (a) Section 01 43 00 - Quality Assurance.
- (b) This section describes requirements applicable to all Sections and including any specifications on drawings

**1.3 REFERENCES**

- (a) ISO/IEC 17025:2005 - General Requirements for the Competence of Testing and Calibration Laboratories.
- (b) SCC (Standards Council of Canada).

**1.4 INSPECTION BY AUTHORITY**

- (a) Allow Authorities Having Jurisdiction access to Work. If part of Work is in preparation at locations other than Place of Work, allow access to such Work whenever it is in progress.
- (b) Give timely notice requesting inspection whenever portions of the Work are designated for special tests, inspections or approvals, either when described in the Contract Documents or when required by law in the Place of the Work.
- (c) If Contractor covers or permits to be covered Work that has been designated for special tests, inspections or approvals before such is made, uncover such Work, have inspections or tests satisfactorily completed and make good such Work.

**1.5 REVIEW BY CONSULTANT**

- (a) Consultant may order any part of Work to be reviewed if Work is suspected to be not in accordance with Contract Documents.
- (b) If, upon review such work is found not in accordance with Contract Documents, Contractor shall correct such Work and pay cost of additional review and correction.

## QUALITY CONTROL

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### 1.6 ACCESS TO WORK

- (a) Allow inspection and testing agencies access to Work, off site manufacturing and fabrication plants.
- (b) Co-operate to provide reasonable facilities for such access.

### 1.7 PROCEDURES

- (a) Notify appropriate agency and Consultant in advance of requirement for tests, in order that attendance arrangements can be made.
- (b) Submit samples and materials required for testing, as specifically requested in specifications. Submit with reasonable promptness and in an orderly sequence so as not to cause delay in Work.
- (c) Provide labour and facilities to obtain and handle samples and materials on site. Provide sufficient space to store and cure test samples.

### 1.8 REJECTED WORK

- (a) Remove defective Work, whether result of poor workmanship, use of defective products or damage and whether incorporated in Work or not, which has been rejected by Consultant as failing to conform to Contract Documents. Replace or re-execute in accordance with Contract Documents.
- (b) Make good other Contractor's work damaged by such removals or replacements promptly.
- (c) If in opinion of Consultant it is not expedient to correct defective Work or Work not performed in accordance with Contract Documents, Owner may deduct from Contract Price the difference in value between Work performed and that called for by Contract Documents, amount of which shall be determined by Consultant.

### 1.9 REPORTS

- (a) Submit one (1) electronic copy of signed inspection and test reports to Consultant.
- (b) Provide copies to Subcontractor, by way of the Constructor, of work being inspected or tested.

### 1.10 EQUIPMENT AND SYSTEMS

- (a) Submit adjustment reports for electrical, mechanical and building equipment systems.
- (b) Refer to Mechanical and Electrical specifications.

## PART 2 - Products

### 2.1 NOT USED

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(a) Not Used

**PART 3 - Execution**

**3.1 NOT USED**

(a) Not Used

END OF SECTION

## TEMPORARY UTILITIES

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### **PART 1 - General**

#### **1.1 RELATED REQUIREMENTS**

- (a) Not used.

#### **1.2 REFERENCES**

- (a) Not used

#### **1.3 ACTION AND INFORMATIONAL SUBMITTALS**

- (a) Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.

#### **1.4 INSTALLATION AND REMOVAL**

- (a) Provide temporary utilities controls in order to execute work expeditiously.
- (b) Remove from site all such work after use.

#### **1.5 DEWATERING**

- (a) Not used

#### **1.6 WATER SUPPLY**

- (a) Potable water is not available for this site. Contractor will provide his own supply of potable water for construction use.

#### **1.7 TEMPORARY HEATING AND VENTILATION**

- (a) Provide temporary heating required during construction period, including attendance, maintenance and fuel.
- (b) Provide temporary heat and ventilation in enclosed areas as required to:
  - (i) Facilitate progress of Work.
  - (ii) Protect Work and products against dampness and cold.
  - (iii) Prevent moisture condensation on surfaces.
  - (iv) Provide ambient temperatures and humidity levels for storage, installation and curing of materials.
  - (v) Provide adequate ventilation to meet health regulations for safe working environment.

## TEMPORARY UTILITIES

- (c) Ventilating
  - (i) Prevent accumulations of dust, fumes, mists, vapours or gases in areas occupied during construction.
  - (ii) Provide local exhaust ventilation to prevent harmful accumulation of hazardous substances into atmosphere of occupied areas.
  - (iii) Dispose of exhaust materials in manner that will not result in harmful exposure to persons.
  - (iv) Ventilate storage spaces containing hazardous or volatile materials.
  - (v) Ventilate temporary sanitary facilities.
  - (vi) Continue operation of ventilation and exhaust system for time after cessation of work process to assure removal of harmful contaminants.
- (d) Permanent heating system of building, may be used when appropriate. Be responsible for damage to heating system.
- (e) Pay estimated costs for maintaining temporary heat.
- (f) Maintain strict supervision of operation of temporary heating and ventilating equipment to:
  - (i) Conform with applicable codes and standards.
  - (ii) Enforce safe practices.
  - (iii) Prevent abuse of services.
  - (iv) Prevent damage to finishes.
  - (v) Vent direct-fired combustion units to outside.
- (g) Be responsible for damage to Work due to failure in providing adequate heat and protection during construction.

### 1.8 TEMPORARY POWER AND LIGHT

- (a) Contractor will provide temporary power as required during construction.
- (b) Arrange for connection with appropriate utility company. Pay costs for installation, maintenance and removal.
- (c) Provide and maintain temporary lighting throughout project. Ensure level of illumination on all floor areas and exits is not less than 162 lx.

### 1.9 TEMPORARY COMMUNICATION FACILITIES

## TEMPORARY UTILITIES

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- (a) Provide and pay for temporary telephone, fax, data hook up, lines and equipment necessary for own use.

### **1.10 FIRE PROTECTION**

- (a) Provide and maintain temporary fire protection equipment during performance of Work required by insurance companies having jurisdiction and governing codes, regulations and bylaws.
- (b) Burning rubbish and construction waste materials is not permitted on site.

### **PART 2 - Products**

#### **2.1 NOT USED**

- (a) Not Used.

### **PART 3 - Execution**

#### **3.1 NOT USED**

- (a) Not Used.

**END OF SECTION**



**PART 1 - General**

**1.1 RELATED REQUIREMENTS**

- (a) Section 01 10 00 Summary of Work

**1.2 REFERENCE STANDARDS**

- (a) Canadian General Standards Board (CGSB)
  - (i) CAN/CGSB 1.189-00, Exterior Alkyd Primer for Wood.
  - (ii) CGSB 1.59-97, Alkyd Exterior Gloss Enamel.
- (b) CSA Group (CSA)
  - (i) CSA-A23.1/A23.2-04, Concrete Materials and Methods of Concrete Construction/Methods of Test and Standard Practices for Concrete.
  - (ii) CSA-0121-M1978(R2003), Douglas Fir Plywood.
  - (iii) CAN/CSA-S269.2-M1987(R2003), Access Scaffolding for Construction Purposes.
  - (iv) CAN/CSA-Z321-96(R2001), Signs and Symbols for the Occupational Environment.

**1.3 ACTION AND INFORMATIONAL SUBMITTALS**

- (a) Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.

**1.4 INSTALLATION AND REMOVAL**

- (a) Prepare site plan indicating proposed location and dimensions of area to be fenced and used by Contractor, number of trailers to be used, avenues of ingress/egress to fenced area and details of fence installation.
- (b) Identify areas which have to be gravelled to prevent tracking of mud.
- (c) Indicate use of supplemental or other staging area.
- (d) Provide construction facilities in order to execute work expeditiously.
- (e) Remove from site all such work after use.

**1.5 HOISTING**

- (a) Provide, operate and maintain hoists/cranes required for moving of materials and equipment.
- (b) Cranes to be operated by qualified operator.

## CONSTRUCTION FACILITIES

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### 1.6 SITE STORAGE/LOADING

- (a) Confine work and operations of employees by Contract Documents. Do not unreasonably encumber premises with products.

### 1.7 CONSTRUCTION PARKING

- (a) Parking will be permitted on site provided it does not disrupt performance of Work.
- (b) Provide and maintain adequate access to project site.
- (c) Clean runways and taxi areas where used by Contractor's equipment.

### 1.8 CONSTRUCTION FIELD OFFICES

- (a) Provide site office heated to 22 degrees C, lighted 750 lx and ventilated, of sufficient size to accommodate site meetings and furnished with drawing laydown table.
- (b) Provide the capability of receiving email correspondence during the duration of construction.
- (c) Provide marked and fully stocked first-aid case in a readily available location.
- (d) Subcontractors to provide their own offices as necessary. Direct location of these offices.

### 1.9 EQUIPMENT, TOOL AND MATERIALS STORAGE

- (a) Provide and maintain, in clean and orderly condition, lockable weatherproof sheds for storage of tools, equipment and materials.
- (b) Locate materials not required to be stored in weatherproof sheds on site in manner to cause least interference with work activities.

### 1.10 SANITARY FACILITIES

- (a) Provide sanitary facilities for work force in accordance with governing regulations and ordinances.
- (b) Post notices and take precautions as required by local health authorities. Keep area and premises in sanitary condition.

### 1.11 CLEAN-UP

- (a) Remove construction debris, waste materials, packaging material from work site daily.
- (b) Clean dirt or mud tracked onto paved or surfaced roadways.
- (c) Store materials resulting from demolition activities that are salvageable.
- (d) Stack stored new or salvaged material not in construction facilities.

**PART 2 -**        **Products**

**2.1**    **NOT USED**

- (a)    Not Used.

**PART 3 -**        **Execution**

**3.1**    **NOT USED**

- (a)    Not Used.

END OF SECTION

## PRODUCT REQUIREMENTS

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### **PART 1 - General**

#### **1.1 SECTION INCLUDES**

- (a) Product quality, availability, storage, handling, protection, and transportation.
- (b) Product substitution procedures.
- (c) Manufacturer's instructions.
- (d) Quality of Work, coordination and fastenings.

#### **1.2 RELATED SECTIONS**

- (a) Section 01 25 13 - Product Exchange Procedures.
- (b) This section describes requirements applicable to all Sections and including any specifications on drawings

#### **1.3 TERMINOLOGY**

- (a) New: Produced from new materials.
- (b) Re-newed: Produced or rejuvenated from an existing material to like-new condition to serve a new or existing service.
- (c) Defective: A condition determined exclusively by the Consultant.

#### **1.4 PRODUCT QUALITY**

- (a) Products, materials, equipment, parts or assemblies (referred to as Products) incorporated in Work: New, or renewed, not damaged or defective, of best quality (compatible with specification requirements) for purpose intended. If requested, provide evidence as to type, source and quality of Products provided.
- (b) Defective Products, whenever identified prior to completion of Work, will be rejected, regardless of previous inspections. Inspection does not relieve responsibility, but is precaution against oversight or error. Remove and replace defective Products at own expense and be responsible for delays and expenses caused by rejection.
- (c) Should any dispute arise as to quality or fitness of Products, decision rests strictly with Consultant.
- (d) Unless otherwise indicated in specifications, maintain uniformity of manufacture for any particular or like item throughout building.

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- (e) Permanent labels, trademarks and nameplates on Products are not acceptable in prominent locations, except where required for operating instructions, or when located in mechanical or electrical rooms.

### **1.5 AVAILABILITY**

- (a) Immediately upon signing Contract, review Product delivery requirements and anticipate foreseeable supply delays for any items.
- (b) If delays in supply of Products are foreseeable, notify Consultant of such, in order that substitutions or other remedial action may be authorized in ample time to prevent delay in performance of Work.
- (c) In event of failure to notify Consultant at commencement of Work and should it subsequently appear that Work may be delayed for such reason, Consultant reserves right to substitute more readily available Products of similar character, at no increase in Contract Price or Contract Time.

### **1.6 STORAGE AND PROTECTION**

- (a) Store and protect Products in accordance with manufacturers' instructions.
- (b) Store with seals and labels intact and legible.
- (c) Store sensitive Products in weather tight, climate controlled, enclosures in an environment favourable to Product.
- (d) For exterior storage of fabricated Products, place on sloped supports above ground.
- (e) Cover Products subject to deterioration with impervious sheet covering. Provide ventilation to prevent condensation and degradation of Products.
- (f) Store loose granular materials on solid flat surfaces in a well-drained area. Prevent mixing with foreign matter.
- (g) Provide equipment and personnel to store Products by methods to prevent soiling, disfigurement, or damage.
- (h) Arrange storage of Products to permit access for inspection. Periodically inspect to verify Products are undamaged and are maintained in acceptable condition.

### **1.7 TRANSPORTATION AND HANDLING**

- (a) Transport and handle Products in accordance with manufacturer's instructions.
- (b) Promptly inspect shipments to ensure that Products comply with requirements, quantities are correct, and Products are undamaged.
- (c) Provide equipment and personnel to handle Products by methods to prevent soiling, disfigurement, or damage.

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### 1.8 PRODUCT CHANGES

- (a) Change in Product(s): Submit request for substitution or alternative in accordance with Section 01 25 13.

### 1.9 EXISTING UTILITIES

- (a) When breaking into or connecting to existing services or utilities, execute Work at times directed by local governing authorities, with minimum of disturbance to Work, and building occupants.
- (b) Protect, relocate or maintain existing active services. When services are encountered, cap off in manner approved by authority having jurisdiction. Stake and record location of capped service.

### 1.10 MANUFACTURER'S INSTRUCTIONS

- (a) Unless otherwise indicated in the specifications, install or erect Products in accordance with manufacturer's instructions. Do not rely on labels or enclosures provided with Products. Obtain written instructions directly from manufacturers.
- (b) Notify Consultant in writing, of conflicts between specifications and manufacturer's instructions, so that Consultant may establish course of action.
- (c) Improper installation or erection of Products, due to failure in complying with these requirements, authorizes Consultant to require removal and re-installation at no increase in Contract Price or Contract Time.

### 1.11 QUALITY OF WORK

- (a) Ensure Quality of Work is of highest standard, executed by workers experienced and skilled in respective duties for which they are employed. Immediately notify Consultant if required Work is such as to make it impractical to produce required results.
- (b) Do not employ anyone unskilled in their required duties. Consultant reserves right to require dismissal from site any workers deemed incompetent or careless.
- (c) Decisions as to standard or fitness of Quality of Work in cases of dispute rest solely with Consultant, whose decision is final.

### 1.12 COORDINATION

- (a) Ensure cooperation of workers in laying out Work. Maintain efficient and continuous supervision.
- (b) Be responsible for coordination and placement of openings, sleeves and accessories.

### 1.13 CONCEALMENT

- (a) In finished areas, conceal pipes, ducts and wiring in floors, walls and ceilings, except where indicated otherwise.

## PRODUCT REQUIREMENTS

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- (b) Before installation, and with timely notice, inform Consultant if there is interference. Install as directed by Consultant.

### 1.14 REMEDIAL WORK

- (a) Perform remedial work required to repair or replace parts or portions of Work identified as defective or unacceptable. Coordinate adjacent affected Work as required.
- (b) Perform remedial work by specialists familiar with materials affected. Perform in a manner to neither damage nor put at risk any portion of Work.

### 1.15 LOCATION OF FIXTURES

- (a) Consider location of fixtures, outlets, and mechanical and electrical items indicated as approximate.
- (b) Inform Consultant of conflicting installation. Install as directed.

### 1.16 FASTENINGS

- (a) Provide metal fastenings and accessories in same texture, colour and finish as adjacent materials, unless indicated otherwise.
- (b) Prevent electrolytic action between dissimilar metals and materials.
- (c) Use non-corrosive hot dip galvanized steel fasteners and anchors for securing exterior work, unless stainless steel or other material is specifically requested in affected specification Section.
- (d) Space anchors within individual load limit or shear capacity and ensure they provide positive permanent anchorage. Wood, or any other organic material plugs are not acceptable.
- (e) Keep exposed fastenings to a minimum, space evenly and install neatly.
- (f) Fastenings which cause spalling or cracking of material to which anchorage is made are not acceptable.

### 1.17 FASTENINGS - EQUIPMENT

- (a) Use fastenings of standard commercial sizes and patterns with material and finish suitable for service.
- (b) Use heavy hexagon heads, semi-finished unless otherwise specified. Use Type 304 or 316 stainless steel for exterior areas.
- (c) Bolts may not project more than one diameter beyond nuts.
- (d) Use plain type washers on equipment, sheet metal and soft gasket lock type washers where vibrations occur. Use resilient washers with stainless steel.

## PRODUCT REQUIREMENTS

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### 1.18 PROTECTION OF WORK IN PROGRESS

- (a) Prevent overloading of any part of the Project.
- (b) Do not cut, drill or sleeve any load bearing structural member, unless specifically indicated, without written approval of Consultant.

### PART 2 - Products

#### 2.1 NOT USED

- (a) Not Used

### PART 3 - Execution

#### 3.1 NOT USED

- (a) Not Used

END OF SECTION



**PART 1 - General**

**1.1 SECTION INCLUDES**

- (a) Submittal requirements associated with connecting to existing facilities.
- (b) Execution requirements for all Work.

**1.2 RELATED SECTIONS**

- (a) This section describes requirements applicable to all Sections and including any specifications on drawings.

**1.3 SUBMITTALS - ATTACHING TO EXISTING WORK**

- (a) Submit written request in advance of cutting or alteration which affects:
  - (i) Structural integrity of any element of Project.
  - (ii) Integrity of weather-exposed or moisture-resistant elements.
  - (iii) Efficiency, maintenance, or safety of any operational element.
  - (iv) Visual qualities of sight-exposed elements.
  - (v) Work of Owner or separate contractor.
- (b) Include in request:
  - (i) Identification of Project.
  - (ii) Location and description of affected Work.
  - (iii) Statement on necessity for cutting or alteration.
  - (iv) Description of proposed Work, and products to be used.
  - (v) Alternatives to cutting and patching.
  - (vi) Effect on Work of Owner or separate contractor.
  - (vii) Written permission of affected separate contractor.
  - (viii) Date and time work will be executed.

**1.4 TOLERANCES**

- (a) Monitor fabrication and installation tolerance control of Products to produce acceptable Work.

## EXECUTION

- (b) Do not permit tolerances to accumulate beyond effective or practical limits.
- (c) Comply with manufacturers' tolerances. In case of conflict between manufacturers' tolerances and Contract Documents, request clarification from Consultant before proceeding.
- (d) Adjust Products to appropriate dimensions; position and confirm tolerance acceptability before permanently securing Products in place.

### 1.5 EXECUTION

- (a) Execute cutting, fitting, and patching to complete the Work.
- (b) Perform all required excavation and fill to complete the Work.
- (c) Fit several parts together, to integrate with other Work.
- (d) Uncover Work to install ill-timed Work.
- (e) Remove and replace defective or non-conforming Work.
- (f) Remove samples of installed Work for testing, if not designated in the respective Section as remaining as part of the Work.
- (g) Provide openings in non-structural elements of Work for penetrations of mechanical, Work. Limit opening dimensions to minimal sizes required, and performed in a neat and clean fashion.
- (h) Execute Work by methods to avoid damage to other Work, and which will provide proper surfaces to receive patching and finishing.
- (i) Employ competent workers, or where applicable, original installer to perform cutting and patching for weather-exposed and moisture-resistant elements, and sight-exposed surfaces.
- (j) Cut rigid materials using masonry saw or core drill. Pneumatic or impact tools not allowed on masonry or concrete work without prior approval.
- (k) Restore work with new products in accordance with requirements of Contract Documents.
- (l) Fit Work airtight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.
- (m) At penetration of fire rated wall, ceiling, or floor construction, completely seal voids with firestopping material, for full thickness of the constructed element.
- (n) Re-finish surfaces to match adjacent finishes: For continuous surfaces re-finish to nearest intersection; for an assembly, re-finish entire unit.
- (o) Conceal pipes, ducts and wiring in floor, wall and ceiling construction of finished areas except where indicated otherwise.

## EXECUTION

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### PART 2 -        Products

#### 2.1    NOT USED

- (a)    Not Used

### PART 3 -        Execution

#### 3.1    NOT USED

- (a)    Not Used

END OF SECTION

## CUTTING AND PATCHING

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### **PART 1 - General**

#### **1.1 SECTION INCLUDES**

- (a) Requirements and limitations for cutting and patching of Work.

#### **1.2 RELATED SECTIONS**

- (a) Section 01 10 00 - Summary of Work.
- (b) Section 01 61 00 - Product Requirements.
- (c) Section 01 25 13 - Product Exchange Procedures: Product options and substitutions.
- (d) Individual Product Specification Sections:
  - (i) Cutting and patching incidental to work of the section.
  - (ii) Advance notification to other sections of openings required in Work of those sections.
  - (iii) Limitations on cutting structural members.

#### **1.3 SUBMITTALS**

- (a) Submit written request in advance of cutting or alteration which affects:
  - (i) Structural integrity of any element of Project.
  - (ii) Integrity of weather exposed or moisture resistant element.
  - (iii) Efficiency, maintenance, or safety of any operational element.
  - (iv) Visual qualities of sight exposed elements.
  - (v) Work of Owner or separate contractor.
- (b) Include in request:
  - (i) Location and description of affected Work.
  - (ii) Necessity for cutting or alteration.
  - (iii) Description of proposed Work and Products to be used.
  - (iv) Alternatives to cutting and patching.
  - (v) Effect on work of Owner or separate contractor.

## CUTTING AND PATCHING

(vi) Written permission of affected separate contractor.

(vii) Date and time work will be executed.

### **PART 2 - Products**

#### **2.1 MATERIALS**

- (a) Primary Products: Those required for original installation.
- (b) Product Substitution: For any proposed change in materials, submit request for substitution described in Section 01 25 13.

### **PART 3 - Execution**

#### **3.1 EXAMINATION**

- (a) Examine existing conditions prior to commencing Work, including elements subject to damage or movement during cutting and patching.
- (b) After uncovering existing Work, assess conditions affecting performance of work.
- (c) Beginning of cutting or patching means acceptance of existing conditions.

#### **3.2 PREPARATION**

- (a) Provide temporary supports to ensure structural integrity of the Work. Provide devices and methods to protect other portions of Project from damage.
- (b) Provide protection from elements for areas which may be exposed by uncovering work.

#### **3.3 CUTTING**

- (a) Execute cutting and fitting including excavation and fill to complete the Work.
- (b) Uncover work to install improperly sequenced work.
- (c) Remove and replace defective or non-conforming work.
- (d) Remove samples of installed work for testing when requested.
- (e) Provide openings in the Work for penetration of mechanical and electrical work.
- (f) Employ original installer to perform cutting for weather exposed and moisture resistant elements, and sight exposed surfaces.
- (g) Cut rigid materials using masonry saw or core drill. Pneumatic tools not allowed without prior approval.

## CUTTING AND PATCHING

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### 3.4 PATCHING

- (a) Execute patching to complement adjacent Work.
- (b) Fit Products together to integrate with other Work.
- (c) Execute work by methods to avoid damage to other Work, and which will provide appropriate surfaces to receive patching and finishing.
- (d) Employ original installer to perform patching for weather exposed and moisture resistant elements, and sight-exposed surfaces.
- (e) Restore work with new Products in accordance with requirements of Contract Documents.
- (f) Fit work air tight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.
- (g) At penetrations of fire rated walls, partitions, ceiling, or floor construction, completely seal voids with fire rated material, to full thickness of the penetrated element.
- (h) Refinish surfaces to match adjacent finish. For continuous surfaces, refinish to nearest intersection or natural break. For an assembly, refinish entire unit.

**END OF SECTION**

## CLEANING AND WASTE PROCESSING

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### **PART 1 - General**

#### **1.1 SECTION INCLUDES**

- (a) Progressive cleaning.
- (b) Cleaning prior to acceptance.

#### **1.2 RELATED SECTIONS**

- (a) This section describes requirements applicable to all Sections and including any specifications on drawings

### **PART 2 - Products**

#### **2.1 CLEANING MATERIALS**

- (a) Cleaning Agents and Materials: Low VOC content.

### **PART 3 - Execution**

#### **3.1 SOLID WASTE REDUCTION**

- (a) The Code of Practice contained in the standard construction document CCA81-2001, "A Best Practices Guide to Solid Waste Reduction" are to be followed.

#### **3.2 PROGRESSIVE CLEANING**

- (a) Maintain Work in tidy condition, free from accumulation of waste products and debris, including that caused by Owner or other Contractors.
- (b) Remove waste materials from site at regularly scheduled times or dispose of as directed by Consultant. Do not burn waste materials on site, unless approved by Consultant.
- (c) Clear snow and ice from area of construction, bank or pile snow in designated areas only.
- (d) Make arrangements with and obtain permits from authorities having jurisdiction for disposal of waste and debris.
- (e) Containers:
  - (i) Provide on-site steel framed, hinged lid containers for collection of waste materials and debris.
  - (ii) Provide and use clearly marked, separate bins for recycling.

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- (f) Remove waste material and debris from site and deposit in waste container at end of each working day.
- (g) Dispose of waste materials and debris.
- (h) Clean interior areas prior to start of finish work, and maintain areas free of dust and other contaminants during finishing operations.
- (i) Store volatile waste in covered metal containers, and remove from premises at end of each working day.
- (j) Provide adequate ventilation during use of volatile or noxious substances. Use of enclosure ventilation systems is not permitted for this purpose.
- (k) Use only cleaning materials recommended by manufacturer of surface to be cleaned, and as recommended by cleaning material manufacturer.
- (l) Schedule cleaning operations so that resulting dust, debris and other contaminants will not fall on wet, newly painted surfaces nor contaminate building systems.

### 3.3 CLEANING PRIOR TO ACCEPTANCE

- (a) Prior to applying for Substantial Performance of the Work, remove surplus products, tools, construction machinery and equipment not required for performance of remaining Work.
- (b) Remove waste products and debris other than that caused by others, and leave Work clean and suitable for occupancy.
- (c) Prior to final review, remove surplus products, tools, construction machinery and equipment.
- (d) Remove waste products and debris other than that caused by Owner or other Contractors.
- (e) Remove waste materials from site at regularly scheduled times or dispose of as directed by Consultant. Do not burn waste materials on site.
- (f) Make arrangements with and obtain permits from authorities having jurisdiction for disposal of waste and debris.
- (g) Clean and polish glass, mirrors, hardware, wall tile, stainless steel, chrome, porcelain enamel, baked enamel, plastic laminate, and mechanical and electrical fixtures. Replace broken, scratched or disfigured glass.
- (h) Remove stains, spots, marks and dirt from decorative work, electrical and mechanical fixtures, furniture fitments, walls, and floors and other exposed surfaces.
- (i) Vacuum clean and dust building interiors, ceilings, wall, floors, behind grilles, louvres and screens.
- (j) Clean and polish surface finishes, as recommended by manufacturer.



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- (k) Inspect finishes, fitments and equipment and ensure specified workmanship and operation.
- (l) Broom clean and wash exterior walks, steps and surfaces; rake clean other surfaces of grounds.
- (m) Remove dirt and other disfiguration from exterior surfaces.
- (n) Clean and sweep roofs, gutters, areaways, and sunken wells.

### 3.4 **FINAL PRODUCT CLEANING**

- (a) Execute final cleaning prior to final project assessment.
- (b) Clean interior and exterior glass, surfaces exposed to view; remove temporary labels, stains and foreign substances, polish transparent and glossy surfaces, vacuum carpeted and soft surfaces.
- (c) Clean equipment and fixtures to a sanitary condition with cleaning materials appropriate to the surface and material being cleaned.
- (d) Remove waste and surplus materials, rubbish, and construction facilities from the site.

**END OF SECTION**

**PART 1 - General**

**1.1 SECTION INCLUDES**

- (a) Inspections and declarations.
- (b) Closeout submittals
- (c) Operation and maintenance manual format.
- (d) Contents each volume.
- (e) Recording actual site conditions.
- (f) Record (as-built) documents and samples.
- (g) Record documents.
- (h) Final survey.
- (i) Warranties and bonds.

**1.2 RELATED SECTIONS**

- (a) Section 01 33 00 - Submittal Procedures.
- (b) Section 01 45 00 - Quality Control.
- (c) This section describes requirements applicable to all Sections within Sections within Divisions 02 to 33.

**1.3 INSPECTIONS AND DECLARATIONS**

- (a) Document 100 - OAA/OGCA Take-Over Procedures shall form the basis of Closeout Procedures for this Project unless otherwise amended by Division 01 Sections.
- (b) Contractor's Inspection: Contractor and all Subcontractors shall conduct an inspection of Work, identify deficiencies and defects, and repair as required to conform to Contract Documents.
  - (i) Notify Consultant in writing of satisfactory completion of Contractor's Inspection and that corrections have been made.
  - (ii) Request Consultant's Inspection.
- (c) Consultant's Inspection: Consultant and Contractor will perform inspection of Work to identify defects or deficiencies. Correct defective and deficient Work accordingly.
- (d) Completion: submit written certificate that following have been performed:

## CLOSEOUT SUBMITTALS

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- (i) Work has been completed and inspected for compliance with Contract Documents.
  - (ii) Defects have been corrected and deficiencies have been completed.
  - (iii) Equipment and systems have been tested, adjusted and are fully operational.
  - (iv) Certificates required by authorities having jurisdiction have been submitted.
  - (v) Operation of systems have been demonstrated to Owner's personnel.
  - (vi) Work is complete and ready for Final Inspection.
- (e) Final Inspection: when items noted above are completed, request final inspection of Work by Owner, Consultant and Contractor. If Work is deemed incomplete by Owner, complete outstanding items and request re-inspection.

### **1.4 CLOSEOUT SUBMITTALS**

- (a) Prepare instructions and data using personnel experienced in maintenance and operation of described products.
- (b) Copy will be returned after final inspection, with Consultant's comments.
- (c) Revise content of documents as required prior to final submittal.
- (d) Two weeks prior to Substantial Performance of the Work, submit to the Consultant, four final copies of operating and maintenance manuals in Canadian English.
- (e) Ensure spare parts, maintenance materials and special tools provided are new, undamaged or defective, and of same quality and manufacture as products provided in Work.
- (f) If requested, furnish evidence as to type, source and quality of products provided.
- (g) Defective products will be rejected, regardless of previous inspections. Replace products at own expense.
- (h) Pay costs of transportation.

### **1.5 OPERATION AND MAINTENANCE MANUAL FORMAT**

- (a) Organize data in the form of an instructional manual.
- (b) Binders: vinyl, hard covered, 3 'D' ring, loose leaf 219 x 279 mm 8.5 x 11 inch with spine and face pockets.
- (c) When multiple binders are used, correlate data into related consistent groupings. Identify contents of each binder on spine.

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- (d) Cover: Identify each binder with type or printed title 'Project Record Documents'; list title of project and identify subject matter of contents.
- (e) Arrange content by systems, under Section numbers and sequence of Table of Contents.
- (f) Provide tabbed fly leaf for each separate product and system, with typed description of product and major component parts of equipment.
- (g) Text: Manufacturer's printed data, or typewritten data.
- (h) Drawings: provide with reinforced punched binder tab. Bind in with text; fold larger drawings to size of text pages.
- (i) Provide 1:1 scaled CAD files in AutoCAD Release 2015 or newer format on USB memory stick

### **1.6 CONTENTS -ACH VOLUME**

- (a) Table of Contents: provide title of project;
  - (i) date of submission;
  - (ii) names, addresses, and telephone numbers of Consultant and Contractor with name of responsible parties; and
  - (iii) schedule of products and systems, indexed to content of volume.
- (b) For each product or system, list names, addresses and telephone numbers of subcontractors and suppliers, including local source of supplies and replacement parts.
- (c) Product Data: Mark each sheet to clearly identify specific products and component parts, and data applicable to installation; delete inapplicable information. Provide logical sequence of instructions for each procedure, incorporating manufacturer's instructions specified in Section 01 45 00.
- (d) Drawings: Supplement product data to illustrate relations of component parts of equipment and systems, to show control and flow diagrams.
- (e) Certificate of Acceptance: Relevant certificates issued by authorities having jurisdiction, including code compliance certificate.

### **1.7 RECORDING ACTUAL SITE CONDITIONS**

- (a) Record information on set of black line opaque drawings, and within the Project Manual, provided by Consultant.
- (b) Annotate with coloured felt tip marking pens, maintaining separate colours for each major system, for recording changed information.

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- (c) Record information concurrently with construction progress. Do not conceal Work of the Project until required information is accurately recorded.
- (d) Contract drawings and shop drawings: legibly mark each item to record actual construction, including:
  - (i) Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
  - (ii) Measured locations of internal utilities and appurtenances, referenced to visible and accessible features of construction.
  - (iii) Field changes of dimension and detail.
  - (iv) Changes made by change orders.
  - (v) Details not on original Contract Drawings.
  - (vi) References to related shop drawings and modifications.
- (e) Specifications: legibly mark each item to record actual construction, including:
  - (i) Manufacturer, trade name and catalogue number of each product actually installed, particularly optional items and substitute items.
  - (ii) Changes made by Addenda and change orders.
- (f) Other Documents: maintain manufacturer's certifications, required by individual specifications sections.

### **1.8 RECORD (AS-BUILT) DOCUMENTS AND SAMPLES**

- (a) In addition to requirements in General Conditions, maintain at the site for Consultant one record copy of:
  - (i) Contract Drawings.
  - (ii) Specifications.
  - (iii) Addenda.
  - (iv) Change Orders and other modifications to the Contract.
  - (v) Reviewed shop drawings, product data, and samples.
  - (vi) Field test records.
  - (vii) Inspection certificates.

## CLOSEOUT SUBMITTALS

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- (viii) Manufacturer's certificates.
- (b) Store as-built documents and samples in field office apart from documents used for construction. Provide files, racks, and secure storage.
- (c) Label as-built documents and file in accordance with section number listings in List of Contents of the Project Manual. Label each document "AS-BUILT DOCUMENTS" in neat, large, printed letters.
- (d) Maintain as-built documents in clean, dry and legible condition. Do not use as-built documents for construction purposes.
- (e) Keep as-built documents and samples available for inspection by Consultant.

### 1.9 **RECORD DOCUMENTS**

- (a) Prior to Substantial Performance of the Work, electronically transfer the marked up information from the as-built documents to a master set of drawing and specification files provided by the Consultant, as follows:
  - (i) Drawings: AutoCAD Release 15.
  - (ii) Specifications: PDF - Adobe Acrobat.
- (b) Mark revised documents as "RECORD DOCUMENTS". Include all revisions, with special emphasis on mechanical.
- (c) Employ a competent computer draftsman to indicate changes on the electronic set of record drawings. Provide updated record drawings in PDF - Adobe Acrobat.
- (d) Submit completed record documents to Owner Digitally Tabbed on a USB memory stick, accompanied by three (3) hard copy sets.

### 1.10 **WARRANTIES AND BONDS**

- (a) Separate each warranty or bond with index tab sheets keyed to Table of Contents listing.
- (b) List subcontractor, supplier, and manufacturer, with name, address, and telephone number of responsible principal.
- (c) Obtain warranties and bonds, executed in duplicate by subcontractors, suppliers, and manufacturers, within ten (10) days after completion of the applicable item of work.
- (d) Except for items put into use with Owner's permission, leave date of beginning of time of warranty until the Date of Ready for Takeover is determined.
- (e) Verify that documents are in proper form, contain full information, and are notarized.
- (f) Co-execute submittals when required.

## CLOSEOUT SUBMITTALS

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- (g) Retain warranties and bonds until time specified for submittals.

### **PART 2 - Products**

#### **2.1 NOT USED**

- (a) Not Used

### **PART 3 - Execution**

#### **3.1 NOT USED**

- (a) Not Used

END OF SECTION

## MAINTENANCE REQUIREMENTS

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### **PART 1 - General**

#### **1.1 SECTION INCLUDES**

- (a) Equipment and systems.
- (b) Materials and finishes.
- (c) Spare parts.
- (d) Maintenance manuals.
- (e) Special tools.
- (f) Storage, handling and protection.

#### **1.2 RELATED SECTIONS**

- (a) Section 01 45 00 - Quality Control.
- (b) This section describes requirements applicable to all Sections and including any specifications on drawings.

#### **1.3 EQUIPMENT AND SYSTEMS**

- (a) 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.
- (b) Panel board circuit directories: provide electrical service characteristics, controls, and communications.
- (c) Include installed colour coded wiring diagrams.
- (d) 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.
- (e) Maintenance Requirements: include routine procedures and guide for trouble-shooting; disassembly, repair, and reassembly instructions; and alignment, adjusting, balancing, and checking instructions.
- (f) Provide servicing and lubrication schedule, and list of lubricants required.
- (g) Include manufacturer's printed operation and maintenance instructions.
- (h) Include sequence of operation by controls manufacturer.



## MAINTENANCE REQUIREMENTS

- (i) Provide original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.
- (j) Provide installed control diagrams by controls manufacturer.
- (k) Provide Contractor's coordination drawings, with installed colour coded piping diagrams.
- (l) Provide charts of valve tag numbers, with location and function of each valve, keyed to flow and control diagrams.
- (m) Provide list of original manufacturer's spare parts, current prices, and recommended quantities to be maintained in storage.
- (n) Additional requirements: As specified in individual specification sections.

### **PART 2 - Products**

#### **2.1 MATERIALS AND FINISHES**

- (a) Building Products, Applied Materials, and Finishes: include product data, with catalogue number, size, composition, and colour and texture designations. Provide information for re-ordering custom manufactured products.
- (b) Instructions for cleaning agents and methods, precautions against detrimental agents and methods, and recommended schedule for cleaning and maintenance.
- (c) Additional Requirements: as specified in individual specifications sections.

#### **2.2 SPARE PARTS AND MATERIALS**

- (a) Provide spare parts or materials, in quantities specified in individual specification sections.
- (b) Provide items of same manufacturer and quality as items in Work.
- (c) Receive and catalogue all items. Submit inventory listing to Consultant. Include approved listings in Maintenance Manual.
- (d) Obtain receipt for delivered products and submit prior to final payment.

#### **2.3 MAINTENANCE MATERIALS**

- (a) Provide maintenance and extra materials, in quantities specified in individual specification sections.
- (b) Provide items of same manufacturer and quality as items in Work.
- (c) Receive and catalogue all items. Submit inventory listing to Consultant. Include approved listings in Maintenance Manual.

## MAINTENANCE REQUIREMENTS

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- (d) Obtain receipt for delivered products and submit prior to final payment.

### 2.4 SPECIAL TOOLS

- (a) Provide special tools, in quantities specified in individual specification section.
- (b) Provide items with tags identifying their associated function and equipment.
- (c) Receive and catalogue all items. Submit inventory listing to Consultant. Include approved listings in Maintenance Manual.

## PART 3 - Execution

### 3.1 DELIVER TO SITE

- (a) Deliver to site; place and store.
- (b) Deliver to location as directed, with inventory list; place and store.

### 3.2 STORAGE, HANDLING AND PROTECTION

- (a) Store spare parts, maintenance materials, and special tools in manner to prevent damage or deterioration.
- (b) Store in original and undamaged condition with manufacturer's seal and labels intact.
- (c) Store components subject to damage from weather in weatherproof enclosures.
- (d) Store paints and freezable materials in a heated and ventilated room.
- (e) Remove and replace damaged products at own expense and to satisfaction of Consultant.

**END OF SECTION**

## DEMONSTRATION AND TRAINING

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### **PART 1 - General**

#### **1.1 ADMINISTRATIVE REQUIREMENTS**

- (a) Demonstrate operation and maintenance of equipment and systems to Owner's personnel two weeks prior to date of substantial performance.
- (b) Owner: provide list of personnel to receive instructions, and co-ordinate their attendance at agreed upon times.
- (c) Preparation:
  - (i) Verify conditions for demonstration and instructions comply with requirements.
  - (ii) Verify designated personnel are present.
  - (iii) Ensure equipment has been inspected and put into operation.
  - (iv) Ensure each doo's operation equipment and systems are fully operational.
- (d) Demonstration and Instructions:
  - (i) Demonstrate start up, operation, control, adjustment, trouble shooting, servicing, and maintenance of each item of equipment at scheduled times, at the designated location.
  - (ii) Instruct personnel in phases of operation and maintenance using operation and maintenance manuals as basis of instruction.
  - (iii) Review contents of manual in detail to explain aspects of operation and maintenance.
  - (iv) Prepare and insert additional data in operations and maintenance manuals when needed during instructions.

#### **1.2 ACTION AND INFORMATIONAL SUBMITTALS**

- (a) Provide submittals in accordance with Section 01 33 00 – Submittal Procedures.
- (b) Submit schedule of time and date for demonstration of each item of equipment and each system two weeks prior to designated dates, for Departmental Representative's approval.
- (c) Submit reports within one week after completion of demonstration, that demonstration and instructions have been satisfactorily completed.
- (d) Give time and date of each demonstration, with list of persons present.
- (e) Provide copies of completed operation and maintenance manuals for use in demonstrations and instructions.

## DEMONSTRATION AND TRAINING

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### 1.3 QUALITY ASSURANCE

- (a) When specified in individual Sections requiring manufacturer to provide authorized representative to demonstrate operation of equipment and systems:
- (b) Instruct Owner's personnel.
- (c) Provide written report that demonstration and instructions have been completed.

### PART 2 - Products

#### 2.1 NOT USED

- (a) Not Used

### PART 3 - Execution

#### 3.1 NOT USED

- (a) Not Used

END OF SECTION

## FIRE PUMP AND ACCESSORIES

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### Part 1 GENERAL

#### 1.1 RELATED REQUIREMENTS

- .1 All related sections.

#### 1.2 REFERENCE STANDARDS

- .1 National Fire Prevention Association (NFPA)
  - .1 NFPA 14, Standard for the Installation of Standpipe Systems.
  - .2 NFPA 20, Standard for the Installation of Stationary Pumps for Fire Protection.
  - .3 NFPA 25, Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems.
- .2 Underwriter's Laboratories of Canada (ULC)
  - .1 CAN4 S543, Standard for Internal Lug Quick Connect Couplings for Fire Hose.

#### 1.3 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Provide submittals in accordance with Section 01 33 00- Submittal Procedures.
- .2 Product Data:
  - .1 Provide manufacturer's printed product literature and data sheets, and include product characteristics, performance criteria, physical size, finish and limitations.
- .3 Shop Drawings:
  - .1 Submit drawings stamped and signed by professional engineer registered or licensed in Province of Canada.
  - .2 Indicate:
    - .1 Materials.
    - .2 Finishes.
    - .3 Method of anchorage
    - .4 Number of anchors.
    - .5 Supports.
    - .6 Reinforcement.
    - .7 Assembly details.
    - .8 Accessories.
- .4 Test reports:
  - .1 Submit certified test reports for the fire protection systems from approved independent testing laboratories, indicating compliance with specifications for specified performance characteristics and physical properties.
- .5 Certificates:
  - .1 Submit certificates signed by manufacturer certifying that materials comply with specified performance characteristics and physical properties.

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- .6 Manufacturers' Instructions:
  - .1 Provide manufacturer's installation instructions.
- .7 Field Quality Control Submittals:
  - .1 Manufacturer's Field Reports: manufacturer's field reports specified.

### 1.4 CLOSEOUT SUBMITTALS

- .1 Provide operation, maintenance and engineering data for incorporation into manual specified in Section in accordance with ANSI/NFPA 20.
- .2 Manufacturer's catalogue Data, including specific model, type, and size for:
  - .1 Pipe and fittings.
  - .2 Pipe hangers and supports.
  - .3 Fire pump
  - .4 Mechanical couplings.
- .3 Field Test Reports:
  - .1 Preliminary tests on piping system.
- .4 Records:
  - .1 As-built drawings of each system.
    - .1 After completion, but before final acceptance, submit complete set of as-built drawings of each system for record purposes.
    - .2 Submit 760 mm by 1050 mm drawings with title block similar to full size contract drawings.
- .5 Operation and Maintenance Manuals:
  - .1 Provide Test Certificate for aboveground piping and other documentation for incorporation into manual in accordance with NFPA 14.

### 1.5 QUALITY ASSURANCE

- .1 Qualifications:
  - .1 Installer: company or person specializing in standpipe systems with documented experience.
- .2 Supply grooved joint couplings, fittings, valves, grooving tools and specialties from a single manufacturer. Use date stamped castings for coupling housings, fittings, valve bodies, for quality assurance and traceability.

### 1.6 MAINTENANCE MATERIAL SUBMITTALS

- .1 Extra Materials:
  - .1 Provide maintenance materials.

### 1.7 DELIVERY, STORAGE AND HANDLING

- .1 Deliver, store and handle materials in accordance with Section with manufacturer's written instructions.

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- .2 Delivery and Acceptance Requirements:
  - .1 Deliver materials to site in original factory packaging, labelled with manufacturer's name, address.
- .3 Storage and Protection:
  - .1 Store materials indoors.
  - .2 Store and protect materials from exposure to harmful weather conditions and at temperature and humidity conditions recommended by manufacturer.

### Part 2 Products

#### 2.1 ABOVE GROUND PIPING SYSTEMS

- .1 Provide fittings for changes in direction of piping and for connections.
  - .1 Make changes in piping sizes through tapered reducing pipe fittings, bushings will not be permitted.
- .2 Perform welding in shop; field welding will not be permitted.
- .3 Conceal piping in areas with suspended ceiling.

#### 2.2 PIPE, FITTINGS AND VALVES

- .1 Pipe:
  - .1 Ferrous: to meet NFPA 14.
    - .1 Provide schedule 40 black steel for all piping used on this project for the standpipe system to meet ANSI/NFPA 14.
    - .2 Provide 1200kPa working pressure fittings of threaded cast iron, threaded malleable iron and flanged cast iron. Unions are permissible for pipe 40mm and smaller.
    - .3 Provide grooved joints for pipe 40mm diameter and larger. All grooved joints shall use Victaulic Firelock Rigid Coupling style 009N couplings or equivalent.
    - .4 Field fabricated fittings will not be acceptable.
    - .5 Provide pipe hangers to meet NFPA 14.
- .2 Fittings and joints to meet NFPA 14:
  - .1 Ferrous: screwed, welded, flanged or roll grooved.
    - .1 Grooved joints designed with two ductile iron housing segments, pressure responsive gasket, and zinc-electroplated steel bolts and nuts. Cast with offsetting angle-pattern bolt pads for rigidity and visual pad-to-pad offset contact.
- .3 Valves:
  - .1 ULC listed for fire protection service.
  - .2 Gate valves: open by counterclockwise rotation.
  - .3 Provide OS & Y valve beneath each alarm valve in each riser when more than one alarm valve is supplied from same water supply pipe.

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- .4 Check valves: flanged clear opening swing or spring actuated check type with flanged inspection and access cover plate for sizes 10 cm and larger.
- .5 Provide gate valve in piping protecting elevator hoistways.
- .4 Pipe hangers:
  - .1 ULC listed for fire protection services in accordance with NFPA.

### 2.3 SUPERVISORY SWITCHES

- .1 General: to NFPA 14 and ULC listed for fire service.
- .2 Valves:
  - .1 Mechanically attached to valve body, with normally open and normally closed contacts and supervisory capability.
- .3 Pressure or flow switch type:
  - .1 With normally open and normally closed contacts and supervisory capability.
  - .2 Provide switch with circuit opener or closer for automatic transmittal of alarm over facility fire alarm system.
  - .3 Connect into building fire alarm system.
  - .4 Alarm actuating device: mechanical diaphragm controlled retard device adjustable from 10 to 60 seconds and instantly recycle.
- .4 Pressure alarm switch:
  - .1 With normally open and normally closed contacts and supervisory capability.

### 2.4 BACKFLOW PREVENTER (BFP) ASSEMBLY

- .1 General: to NFPA 14 and ULC listed for fire service.
- .2 The BFP assembly shall be Watts model 757 OSY or equal approved.
- .3 The Double Check Valve Assembly shall be suitable for vertical installation and shall be complete with flanged connections.
- .4 The BFP assembly shall consist of two independent tri-link check modules within a single housing, sleeve access port, four test cocks and two drip tight shut-off valves (To be supervised on the existing fire alarm system). Tri-link checks shall be removable and serviceable, without the use of special tools.
- .5 The housing shall be constructed of 304 Schedule 40 stainless steel pipe with groove end connections. Tri-link checks shall have reversible elastomer discs and in operation and shall produce drip tight closure against reverse flow caused by backpressure or back siphonage.

### 2.5 FIRE PUMP

- .1 General
  - .1 Provide packaged fire pump as specified herein and as required by NFPA 14. Acceptable Manufacturer: Armstrong or approved equal.
  - .2 Assemble pipe, wire and mount all components on a structural steel channel base. Factory test the complete assembly and ship completely assembled, ready



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- for inlet piping connections, system piping connection, and power source connections to fire pump controller and jockey pump controller.
- .3 Provide a formed steel drip lip base with an outlet to permit piping the entire base to drain.
- .4 The pump motor shall be Totally Enclosed Fan Cooled (TEFC)
- .5 All components shall be ULC listed and FM approved where applicable.
- .2 Fire Pump
  - .1 Fire pump assembly shall be Packaged, ULC listed and labeled inline Pumps and controllers (fire pump).
  - .2 The pump shall have a bronze impeller, non-corrosive shaft sleeve, packed gland with external flush line to the lantern ring suitable for 125 PSIG suction pressure. Pumps are supplied with cast iron casings incorporating a double volute design for sizes 4 x 3, 6 x 4 and 6 x 5.
  - .3 The pump shall be supplied with the following accessories: .
    - .1 One (1) 3½" dial type suction gauge
    - .2 One (1) 3½" dial type discharge gauge
    - .3 One (1) circulation relief valve
- .3 FIRE PUMP CONTROLLER
  - .1 The fire pump controller shall be listed and labeled by Underwriters Laboratories of Canada (ULC), by Underwriters Laboratories (UL), approved by Factory Mutual (FM). The fire pump controller shall be of the combined manual and automatic stop, all equipment shall be enclosed in approved drip proof enclosures.
  - .2 The control equipment shall be completely assembled, wired and tested at point of manufacture prior to shipment. Circuit breakers shall have an interrupting capacity.
- .4 FIRE PUMP CONTROLLER AND AUTOMATIC TRANSFER SWITCH COMBINATION
  - .1 The automatic transfer switch controller combination shall be approved by UL, ULC or FM. The automatic transfer switch and the fire pump controller shall each be mounted in separate enclosure, mechanically attached to form one unit and provide for protected interlock wiring.
  - .2 The automatic transfer switch shall be capable of automatic power transfer from normal to an alternate emergency power source in case of failure of normal supply and automatically re-transfer after restoration of normal power conditions.
  - .3 The automatic transfer switch shall incorporate an externally operated main isolating switch, a manual operating handle, indicators, contacts for remote alarms, voltage frequency and phase reversal sensing, time delays and memory circuit.
- .5 TESTING AND MOUNTING
  - .1 The fire pump shall be hydrostatically tested to twice the maximum pressure developed at shut-off but not less than 250 PSI. Tests will meet or exceed NFPA 20 standards.
  - .2 The fire pump shall be subjected to a performance test at rated speed.

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- .3 The pump shall furnish not less than 150% of rated capacity at a pressure not less than 65% of rated head. The shut-off total head of the pump shall not exceed 140% of rated total head. Certified curves shall be supplied to the purchaser showing the efficiency, brake-horsepower and total head developed at shut-off at rated capacity and at 150% of rated capacity.
- .4 Following the tests, the fire pump shall be factory mounted and aligned with electric motor on a common structural base.

### 2.6 PRESSURE GAUGES

- .1 ULC listed.
- .2 Maximum limit of not less than twice normal working pressure at point where installed.

### 2.7 SIGNS

- .1 Attach properly lettered bilingual and approved metal signs to each valve and alarm device to NFPA 14.
- .2 Permanently fix hydraulic design data nameplates to riser of each system.

## Part 3 Execution

### 3.1 MANUFACTURER'S INSTRUCTIONS

- .1 Compliance: comply with manufacturer's written recommendations or specifications, including product technical bulletins, handling, storage and installation instructions, and datasheet.

### 3.2 INSTALLATION

- .1 Install, inspect and test to acceptance in accordance with NFPA 14 and NFPA 25.

### 3.3 PIPE INSTALLATION

- .1 Install piping straight and true to bear evenly on hangers and supports. Do not hang piping from plaster ceilings.
- .2 Keep interior and ends of new piping and existing piping thoroughly cleaned of water and foreign matter.
- .3 Keep piping systems clean during installation by means of plugs or other approved methods. When work is not in progress, securely close open ends of piping to prevent entry of water and foreign matter.
- .4 Inspect piping before placing into position.

### 3.4 ELECTRICAL CONNECTIONS

- .1 Provide electrical work associated with this section as specified elsewhere.
- .2 Provide control and fire alarm wiring, including connections to fire alarm systems, in accordance with National Electrical Code.
- .3 Provide wiring in rigid metal conduit or intermediate metal conduit.

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### 3.5 DISINFECTION

- .1 Disinfect new piping and existing piping.
- .2 Fill piping systems with solution containing minimum of 50 parts per million of chlorine and allow solution to stand for minimum of 24 hours.
- .3 Flush solution from systems with clean water until maximum residual chlorine content is not greater than 0.2 part per million or residual chlorine content of domestic water supply.
- .4 Obtain at least two consecutive satisfactory bacteriological samples from piping, analyzed by certified laboratory, and submit results prior to piping being placed into service.

### 3.6 CONNECTIONS TO EXISTING WATER SUPPLY SYSTEMS

- .1 Notify Contracting Officer in writing at least 15 days prior to connection date.
- .2 Use drilling machine valve and mechanical joint type sleeves for connections to be made under pressure.
- .3 Bolt sleeves around main piping.
- .4 Bolt valve to branch connection. Open valve, attach drilling machine, make tap, close valve, and remove drilling machine, without interruption of service.
- .5 Furnish materials required to make connections into existing water supply systems, and perform excavating, backfilling, and other incidental labour as required.

### 3.7 FIELD PAINTING

- .1 Clean, pretreat, prime, and paint new systems including valves, piping, conduit, hangers, supports, miscellaneous metalwork, and accessories.
- .2 Apply coatings to clean, dry surfaces, using clean brushes.
- .3 Clean surfaces to remove dust, dirt, rust, and loose mill scale.
- .4 Immediately after cleaning, provide metal surfaces with 1 coat of pretreatment primer applied to minimum dry film thickness of 0.3 mil, and one coat of zinc chromate primer applied to minimum dry film thickness of 1.0 mil.
- .5 Provide primed surfaces with following:
  - .1 Piping in Finished Areas:
    - .1 Provide primed surfaces with 2 coats of paint to match adjacent surfaces.
    - .2 Provide valves and operating accessories with 1 coat of red alkyd gloss enamel applied to minimum dry film thickness of 1.0 mil.
    - .3 Provide piping with self-adhering red plastic bands spaced at maximum of 3m intervals throughout piping systems.
  - .2 Piping in Unfinished Areas:
    - .1 Provide primed surfaces with one coat of red alkyd gloss enamel applied to minimum dry film thickness of 1.0 mil in mechanical equipment room, pipe chases, attic spaces, spaces above suspended ceilings.

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- .2 Provide piping with self-adhering red plastic bands spaced at maximum of 3m intervals.

### 3.8 FIELD QUALITY CONTROL

- .1 Site Test, Inspection:
  - .1 Perform test to determine compliance with specified requirements in presence of Departmental Representative.
  - .2 Test, inspect, and approve piping before covering or concealing.
  - .3 Preliminary Tests:
    - .1 Hydrostatically test each system at 200 psig for a 2 hour period with no leakage or reduction in pressure.
    - .2 Flush piping with potable water in accordance with NFPA 14.
    - .3 Piping above suspended ceilings: tested, inspected, and approved before installation of ceilings.
    - .4 Test alarms and other devices.
    - .5 Test water flow alarms by flowing water through inspector's test connection. When tests have been completed and corrections made, submit signed and dated certificate in accordance with NFPA 14.
  - .4 Formal Tests and Inspections:
    - .1 Do not submit request for formal test and inspection until preliminary test and corrections are completed and approved.
    - .2 Submit written request for formal inspection at least 15 days prior to inspection date.
    - .3 Repeat required tests as directed.
    - .4 Correct defects and make additional tests until systems comply with contract requirements.
    - .5 Furnish instruments, equipment, appliances, personnel connecting devices, for tests.
    - .6 Authority of Jurisdiction, will witness formal tests and approve systems before they are accepted.
- .2 Manufacturer's Field Services:
  - .1 Obtain written report from manufacturer verifying compliance of Work, in handling, installing, applying, protecting and cleaning of product and submit Manufacturer's Field Reports.
  - .2 Provide manufacturer's field services consisting of product use recommendations and periodic site visits for inspection of product installation in accordance with manufacturer's instructions.
  - .3 Schedule site visits, to review Work, as directed.
- .3 Site Tests:
  - .1 Field test each fire pump, driver and controllers in accordance with NFPA 20. Testing shall include:
    - .1 Verification of proper installation.
    - .2 Verification of the sequence of alarm systems operations.

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- .2 Testing to be witnessed by authority having jurisdiction.
- .3 Develop, with Departmental Representative assistance, detailed instructions for O & M of this installation.

### **3.9 CLEANING**

- .1 Remove surplus materials, excess materials, rubbish, tools and equipment.
- .2 Clean the site every day.

**END OF SECTION**

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### PART 1 - General

#### 1.1 RELATED REQUIREMENTS

- (a) Section 23 05 00 – Mechanical General Requirements.

#### 1.2 REFERENCE STANDARDS

- (a) Standards and codes to the latest editions adopted by and enforced by local governing authorities.
- (b) American Society of Mechanical Engineers International (ASME)
  - (i) ANSI/ASME B16.15-13, Cast Copper Alloy Threaded Fittings, Classes 125 and 250.
  - (ii) ANSI/ASME B16.18-12, Cast Copper Alloy Solder Joint Pressure Fittings.
  - (iii) ANSI/ASME B16.22-13, Wrought Copper and Copper Alloy Solder Joint Pressure Fittings.
  - (iv) ANSI/ASME B16.24-11, Cast Copper Alloy Pipe Flanges and Flanged Fittings: Class 150, 300, 400, 600, 900, 1500 and 2500.
  - (v) ASME B31.9-14, Building Services Piping.
  - (vi) ASME B36.19M-04, Stainless Steel Pipe.
- (c) American National Standards Institute/American Water Works Association (ANSI)/(AWWA)
  - (i) ANSI/AWWA C111/A21.11-12, Rubber-Gasket Joints for Ductile-Iron Pressure Pipe and Fittings.
  - (ii) ANSI/AWWA C151/A21.51-09, Ductile Iron Pipe, Centrifugally Cast, for Water.
  - (iii) AWWA C904-06, Crosslinked Polyethylene (PEX) Pressure Pipe, ½ In. (12 mm) through 3 In. (76mm), for Water Service.

#### 1.3 SUBMITTALS

- (a) Provide submittals in accordance with Submittal Procedures.
- (b) Product Data:

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- (i) Provide manufacturer's printed product literature and datasheets for insulation and adhesives, and include product characteristics, performance criteria, physical size, finish and limitations.
- (c) Shop drawings:
  - (i) Capacity and ratings;
  - (ii) Mounting details to suit locations shown, indicating methods and hardware to be used.
- (d) Closeout Submittals:
  - (i) Provide maintenance data for incorporation into manual specified in Section 01 78 10-Closeout Submittals.

### **1.4 DELIVERY, STORAGE AND HANDLING**

- (a) Packaging Waste Management; remove for reuse and return in accordance with Section 01 35 50 –Waste Management and Disposal.
- (b) Place materials defined as hazardous or toxic in designated containers.
- (c) Handle and dispose of hazardous materials in accordance with Municipal regulations.

### **1.5 QUALITY ASSURANCE**

- (a) Domestic water piping and valves are to comply with codes, regulations and standards listed above.
- (b) Site personnel are to be licensed in jurisdiction of the work and under continuous supervision of a foreman who is experienced in the related work.
- (c) Manufacturer's qualifications:
  - (i) Manufacturer shall be ISO 9000, 9001 or 9002 certified. Manufacturer of products shall have produced similar products for a minimum period of 5 years.
- (d) Installer Qualifications
  - (i) Installers for work to be performed by or work under licensed Mechanical Contractor.
  - (ii) Installers of systems are to be fully qualified and experienced installers of respective products and work in which they are installing.

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### PART 2 - Products

#### 2.1 PIPING

- (a) Domestic hot, cold and recirculation systems, within building.
  - (i) Above ground:
    - (a) Copper tube, hard drawn, type L: to ASTM B88M.
    - (b) PEX Piping to CSA B137.5.
  - (ii) Buried or embedded:
    - (a) Copper tube, soft annealed, type K: to ASTM B88M, in long lengths and with no buried joints.
    - (b) PEX Piping to CSA B137.5.
  - (iii) All products used for potable water duty shall be of lead-free materials.

#### 2.2 FITTINGS

- (a) Bronze pipe flanges and flanged fittings, Class 150 and 300: to ANSI/ASME B16.24.
- (b) Cast bronze threaded fittings, Class 125 and 250: to ANSI/ASME B16.15.
- (c) Cast copper, solder type: to ANSI/ASME B16.18.
- (d) Wrought copper and copper alloy, solder type: to ANSI/ASME B16.22.
- (e) NPS 2 and larger:
  - (i) ANSI/ASME B16.18 or ANSI/ASME B16.22 roll grooved to CSA B242.
- (f) NPS 1 ½ and smaller:
  - (i) Wrought copper to ANSI/ASME B16.22; with 301 stainless steel internal components and EPDM seals. Suitable for operating pressure to 1380 kPa.

#### 2.3 JOINTS

- (a) Rubber gaskets, latex-free 1.6 mm thick: to AWWA C111.
- (b) Bolts, nuts, hex head and washers: to ASTM A307, heavy series.
- (c) Solder: 95/5 tin copper alloy.



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- (d) Teflon tape: for threaded joints.
- (e) Grooved couplings: designed with angle bolt pads to provide rigid joint, complete with EPDM gasket.
- (f) Dielectric connections between dissimilar metals: dielectric fitting, complete with thermoplastic liner.

### 2.4 GATE VALVES

- (a) NPS 2 and under, soldered:
  - (i) Rising stem: to MSS-SP-80, Class 125, 860 kPa, bronze body, screw-in bonnet, solid wedge.
- (b) NPS 2 and under, screwed:
  - (i) Rising stem: to MSS-SP-80, Class 125, 860 kPa, bronze body, screw-in bonnet, solid wedge disc.
- (c) NPS 2 1/2 and over, in mechanical rooms, flanged:
  - (i) Rising stem: to MSS-SP-70, Class 125, 860 kPa, flat flange faces, cast-iron body, OS&Y bronze trim.
- (d) NPS 2 1/2 and over, other than mechanical rooms, flanged:
  - (i) Non-rising stem: to MSS-SP-70, Class 125, 860 kPa, flat flange faces, cast-iron body, bronze trim, bolted bonnet.

### 2.5 BACKFLOW PREVENTER

- (a) The proposed backflow preventer shall be double check valve assembly type, minimum 175 psi rated lead-free in accordance with CAN/CSA B64. The BFP shall be complete with tight-closing resilient seated shut-off valves, test cocks and strainer.
- (b) Acceptable Manufacturers:
  - (i) Watts Industries Canada;
  - (ii) Zurn;
  - (iii) Apollo Valves.

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### PART 3 - Execution

#### 3.1 APPLICATION

- (a) Manufacturer's Instructions: comply with manufacturer's written recommendations, including product technical bulletins, handling, storage and installation instructions, and datasheets.

#### 3.2 INSTALLATION

- (a) Install in accordance with Ontario Plumbing Code and local authority having jurisdiction.
- (b) Assemble piping using fittings manufactured to ANSI and Standard Council of Canada (SCC) standards.
- (c) Install CWS piping below and away from HWS and HWC and other hot piping so as to maintain temperature of cold water as low as possible.
- (d) Connect to fixtures and equipment in accordance with manufacturer's written instructions unless otherwise indicated.
- (e) Buried tubing:
  - (i) Lay in well compacted washed sand in accordance with AWWA Class B bedding.
  - (ii) Bend tubing without crimping or constriction. Minimize use of fittings.
- (f) Valves
  - (i) Isolate equipment, fixtures and branches with ball valves or as indicated on the contractual drawings.
  - (ii) Balance recirculation system using lock shield globe valves. Mark settings and record on as-built drawings on completion.

#### 3.3 PRESSURE TESTS

- (a) Test pressure: greater of 1 times maximum system operating pressure or 860 kPa.

#### 3.4 FLUSHING AND CLEANING

- (a) Flush entire system for 8 h. Ensure outlets flushed for 2 hours. Let stand for 24 hours, then draw one sample off longest run. Submit to testing laboratory to verify that system is clean of copper to Federal potable water guidelines. Let system flush for additional 2 hours, then draw off another sample for testing.

#### 3.5 PRE-START-UP INSPECTIONS

- (a) Systems to be complete, prior to flushing, testing and start-up.
- (b) Verify that system can be completely drained.
- (c) Ensure that pressure booster systems are operating properly.
- (d) Ensure that air chambers, expansion compensators are installed properly.

**3.6 START-UP**

- (a) Timing: start up after:
  - (i) Pressure tests have been completed.
  - (ii) Disinfection procedures have been completed.
  - (iii) Certificate of static completion has been issued.
  - (iv) Water treatment systems operational.
- (b) Provide continuous supervision during start-up.
- (c) Start-up procedures:
  - (i) Establish circulation and ensure that air is eliminated.
  - (ii) Check pressurization to ensure proper operation and to prevent water hammer, flashing and/or cavitation.
  - (iii) Bring HWS storage tank up to design temperature slowly.
  - (iv) Monitor piping HWS and HWC piping systems for freedom of movement, pipe expansion as designed.
  - (v) Check control, limit, safety devices for normal and safe operation.
- (d) Rectify start-up deficiencies.

**3.7 CLEANING**

- (a) Clean in accordance with Section 01 74 00- Cleaning.
- (b) Waste Management: separate waste materials for recycling and reuse in accordance with Section 01 35 50- Waste Management and Disposal.

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## GENERAL MECHANICAL REQUIREMENTS

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### **GENERAL**

#### **1. SECTION INCLUDES**

General requirements for the specified mechanical work.

#### **2. REFERENCES**

None.

#### **3. SCOPE OF WORK**

A brief description of the overall scope of work is as follows:

1. Replace two pumps serving the refrigeration system and one fire pump complete with valves, fittings and a portion of piping as shown on the drawings with new similar capacity pumps.
2. Replace two existing exhaust fans serving the arena complete with supports and accessories.
3. Replace two existing dehumidifiers serving the arena complete with grilles, humidity controls and accessories.

#### **4. INTENT**

Provide complete and fully operational mechanical systems with facilities and services to meet requirements described herein and in complete accord with applicable codes and ordinances.

Drawings are diagrammatic and approximately to scale unless detailed otherwise. They establish scope, material and quality and are not detailed installation instructions.

The Work is suitably outlined on the Drawings with regard to sizes, locations, general arrangements and installation details, and has been generally coordinated for routing of services. The equipment arrangement is shown more or less in diagrammatic form except where in certain cases the Drawings may include details giving the exact locations and arrangements required. Contractor shall allow in base price for relocation of any and all existing services as necessary in order to install new equipment, ductwork, piping, conduit, etc and to make room for any new penetrations.

The location of equipment, and the associated arrangement of piping, and other material describes the general requirements of the Work. Final location is dependant on the actual equipment supplied. The Consultant reserves the right to make reasonable adjustment of up to 5 meters to the location of equipment, floor drains, routing of major piping and ductwork, at no additional cost to the Owner.

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In order to provide clarity to the arrangement of the Work, not all details including valves, thermometers, pressure gauges, etc. are shown on the plan Drawings. Refer to schematic Drawings, standard details and the specification for these requirements. In the absence of specific details, the Contractor is expected to follow generally accepted good installation practices. Alternatively, Contractor shall submit a written request for information (RFI) to the Consultant and obtain a ruling prior to proceeding with the Work.

Where Standard Details are provided, these show the general installation requirements, and are applicable to each occurrence in the Work, unless otherwise specified or shown.

Coordinate Work with all trades to ensure a proper and complete installation. Notify all trades concerned of the requirements for openings, sleeves, inserts and other hardware necessary for the installation and, where Work is to be integrated with the Work of other trades or is to be installed in close proximity with the Work of the trades, carefully coordinate the Work prior to installation.

Carefully examine Work and Drawings of all related trades and thoroughly plan the Work in advance so as to avoid interferences.

Connect to equipment furnished in other sections and by Owner, including uncrating equipment, installing, starting, and testing.

Any obvious ambiguities in the project documents shall be brought to the Engineer's attention at the time of tendering. Claims for extra monies will not be entertained if ambiguities in the tender documentation are not highlighted prior to tender closing.

### 5. **CUTTING AND PATCHING - EXECUTION**

Locate holes and provide sleeves, cutting and fitting required for mechanical work. Relocate improperly located holes and sleeves.

Perform patching in finished construction of building under the sections of specifications covering these materials.

### 6. **SHOP DRAWINGS AND PRODUCT DATA**

Submit detailed shop drawings and product data complete with performance data, electrical data and physical data of all equipment and accessories.

Indicate manufacturer, trade name and model number. Include copies of applicable brochure or catalogue material. Indicate sizes, types, model numbers, ratings, capacities and options actually being proposed.

Include dimensional data for roughing in and installation, and technical data sufficient to confirm that equipment meets requirements of drawings and specifications.

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Include wiring, piping and service connection data, motor sizes complete with voltage ratings and schedules.

### 7. **SUBMITTALS FOR INFORMATION**

Manufacturer's Certificate: Certify that specified products meet or exceed specified requirements.

### 8. **CLOSEOUT SUBMITTALS**

Accurately record actual locations of equipment, accessories, structural reinforcement repairs, type of repair, and electrical details of all connected equipment.

Contractor shall submit Commissioning report, sequence of operations and As-Built drawings to the owner's representative and Consultant.

### 9. **OPERATING AND MAINTENANCE MANUALS**

Provide a digital copy of O&M manuals.

### 10. **RECORD DRAWINGS**

Keep on site, an extra set of drawings and specifications recording changes and deviations daily.

Include for the work required to transfer site changes to Consultant's original CAD files and providing the Owner with one set of hard copy and electronic files of all identified 'Record Drawings'.

### 11. **ACCEPTABLE MATERIALS AND EQUIPMENT**

Include for products that meet the requirements of the specifications and the design intent and that are manufactured by reputable manufacturers with a proven track record of at least 5 years.

### 12. **EQUIPMENT PROTECTION AND CLEAN-UP**

Protect equipment and materials in storage on site, during and after installation until final acceptance. Leave factory covers in place and take special precautions to prevent entry of foreign material into working parts of piping and duct systems.

Protect equipment with polyethylene covers and crates.

Operate, drain and flush bearings and refill with change of lubricant before final acceptance.

Protect bearings and shafts during installation. Grease shafts and sheaves to prevent corrosion. Provide extended nipples for lubrication.

Ensure that existing equipment is carefully dismantled and not damaged or lost. Do not re-use existing materials and equipment unless specifically indicated.

**13. MATERIAL AND EQUIPMENT**

Material and Equipment: New and quality specified. Statically and dynamically balanced rotating equipment for minimum vibration and low operating noise level.

Include for all concrete work for mechanical installations. Provide engineered structural drawings and dimensional drawings, templates, anchor bolts and accessories required for mounting and anchoring equipment.

**14. MATERIAL IDENTIFICATION**

Identify piping, and equipment throughout with labels and direction of flow arrows. Apply labels at 1.5 metre intervals, before and after pipes pass through walls, at access door openings or closer. Additionally, identify BAS controllers, panels and cables with labels to allow traceability.

Provide 20 mm diameter brass number tags with number stamped in black, secured to valve wheel with key chain for valves not in plain sight of apparatus controlled. Provide neat, typewritten directories giving valve number, valve service and location of valves. Frame one copy under glass for wall mounting.

Identify electric starting switches and remote push-button stations with 6 mm laminated plastic plates.

**15. EQUIPMENT BASES AND SUPPORTS**

Install roof mounted HVAC units on existing roof curbs/sleepers. Provide heavy duty insulated roof curb adapters to suit installation of new units. Supply and return air ducts/transitions shall be integral to roof curb adapters.

Provide dimensional drawings, templates, anchor bolts and accessories required for mounting and anchoring equipment.

**16. FLASHING**

Flash , counter flash, roof /wall insulation and water proofing where mechanical systems passes through weather or waterproofed walls, floors and roofs.



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### 17. INSERTS

Inserts: Malleable iron case of galvanized steel shell and expander plug for threaded connection with lateral adjustment, top slot for reinforcing rods, lugs for attaching to forms.

Size inserts to suit threaded hanger rods.

### 18. ACCESS DOORS

Access doors to match surrounding surface, provided with recess to accept matching finish. Provide ULC rated doors in fire rated construction.

Provide flush type steel framed panel with concealed hinges, size minimum 300 mm x 300 mm for inspection and hand access, and minimum 600 mm x 600 mm for man access.

Provide cam type locking device with hand or key lock when located in public corridors and washrooms complete with master keys.

Provide access doors for maintenance or adjustments purposes for all mechanical system components including valves, volume and splitter dampers, fire dampers, clean outs and traps, controls, coils and terminal units, and expansion joints.

**END OF SECTION**

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### **PART 1**      **GENERAL**

#### **1.1**      **RELATED WORK**

- .1 Other Divisions
  - .1 Refer to other divisions of the Specifications and to the Drawings for work related to the mechanical work to avoid interferences with work of other trades (and other contractors) and to ensure proper completion of the work as a whole.

#### **1.2**      **GENERAL CONSTRUCTION REQUIREMENTS**

- .1 Applicable Codes and Standards
  - .1 Ontario Building Code
  - .2 Occupational Health and Safety Act and Regulations for Construction Projects, Ontario Regulation 691.
  - .3 Owners Health and Safety Requirements
- .2 Measurements and Deviations
  - .1 Where any parts of the mechanical work are specifically located by dimensions on the Drawings, check and verify these dimensions on site prior to installation.
  - .2 Before installing piping, review electrical Drawings with mechanical Drawings
    - .1 Where interference may occur and departures from arrangements as shown are required, consult with other trades involved, come to agreement as to changed locations or elevations and obtain approval of the Consultant for proposed changes before proceeding with the work.
  - .3 Examine work of other trades or contractors, prior to commencement of mechanical installations.
    - .1 Report in writing, to the Consultant, any discrepancies which will affect mechanical installations.
    - .2 Failure to do so shall be considered acceptance of the conditions.
  - .4 Where site conditions require minor deviations from indicated arrangements or locations, make such changes on approval of the Consultant without additional cost to the Owner.
  - .5 Should any discrepancies occur during installation of mechanical work which will necessitate major revisions to the mechanical trades work or the work of other trades or contractors, notify the Consultant immediately and obtain written authorization before proceeding with the work.
- .3 Building Attachments:
  - .1 Obtain prior written Consultant's approval before drilling, cutting or welding of the building steel or building structure for erection of materials or equipment.
- .4 Overloading

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- .1 During installation of mechanical work, do not load any part of the building structure with a load greater than it is capable of bearing.
  - .1 Should any accident occur or damage result through the violation of this requirement, the contractor shall be held solely responsible.
- .2 Design temporary supports used during installation as being equivalent to permanent supports.
- .3 Remove temporary supports at completion of work.
- .5 Cutting and Patching
  - .1 Do not cut, remove or burn structural parts or sections of the building, whether they are steel, concrete or masonry without the written authorization of the Consultant.
  - .2 Should cutting, repairing, and patching of previously finished work of other trades be required to allow installation of mechanical work, pay all costs for the trade concerned to perform the work.

### **PART 2** **PRODUCTS**

#### **2.1** **BUILDING ATTACHMENTS**

- .1 Welding Studs
  - .1 Maximum size: 10mm (3/8") for attaching miscellaneous materials and equipment to building steel.
  - .2 If the weight of materials or equipment require bolts or studs larger than 10mm (3/8") diameter, use steel clips or brackets, secured to building steel by (welding or) bolting as approved by the Consultant.
  - .3 Acceptable Manufacturers:
    - .1 Graham
    - .2 Omark
    - .3 Nelson
    - .4 Or approved equivalent
- .2 Self drilling expansion type concrete inserts:
  - .1 To secure miscellaneous equipment and materials to masonry or concrete construction already in place.
  - .2 Of sufficient number and size to prevent concrete from breaking away.
  - .3 The use of powder or power actuated fasteners will not be allowed unless prior written approval is obtained from the Consultant.
  - .4 Acceptable Manufacturers:
    - .1 ITW "Redhead"
    - .2 Star "SSS"
    - .3 USM "Parabolt"
    - .4 Or approved equivalent

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- .3 Supports for any suspended items:
  - .1 Do not fasten/attach to or extend through steel pan type roofs or through concrete slab roofs.
- .4 Beam clamps:
  - .1 2-bolt design and of such type that the rod load is transmitted only concentrically to the beam web centreline.
  - .2 The use of "C" and "I" beam side clamps, etc., will not be allowed without written consent of the Consultant.
  - .3 Acceptable Manufacturers:
    - .1 Grinnell
    - .2 Myatt
    - .3 Carpenter & Paterson
    - .4 Or approved equivalent
- .5 Truss or steel joist roof or floor framing:
  - .1 Locate hangers at or within 150mm (6") of the joist top or bottom chord panel points
  - .2 Otherwise provide additional structural steel as required where hanger spacing does not coincide with joist spacing.
  - .3 Transmit hanger load only concentrically to the supporting truss or joist.
- .6 Secondary structural steel members between trusses and/or joists:
  - .1 Locate at or within 150mm (6") of top or bottom chord panel points.
  - .2 Where the secondary structural steel member cannot be located at or near a truss or joist panel point, provide additional diagonal structural steel web member/members designed for the applicable load to the nearest panel point in the opposite chord member.
    - .1 The above condition may be waived if the load to be suspended between panel points is not in excess of 45kg (100 LB).
  - .3 Diagonal hangers which will induce lateral stresses in the chord members of the joist will not be permitted.

### 2.2 DRIVES AND ACCESSORIES

- .1 Drives
  - .1 V-belt drive selection: 150 percent of the motor size rating.
  - .2 Sheaves: cast iron construction with machined grooves.
    - .1 Sheaves 75mm (3") size and larger diameter: taper lock bushings.
    - .2 Multi-belt drives: matched sets.
    - .3 Statically and dynamically balance all sheaves as an operating unit.
- .2 Adjustable sheaves:

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- .1 Motors less than 1.1Kw (1.5 HP) rating: adjustable pitch motor sheave with diameter range selected to obtain specified RPM of the driven equipment at approximately the mid-point setting of the sheave.
- .3 Fixed Sheaves:
  - .1 Motors of 1.1Kw (1.5 HP) and greater: solid type.
  - .2 Should such sheaves not provide design requirements under operating conditions, supply and install a new drive sheave of proper size at no increase in Contract Price.
- .4 Drive Couplings
  - .1 Acceptable Manufacturers:
    - .1 Falk
    - .2 Fast
    - .3 Thomas
    - .4 Or approved equivalent
- .5 Lubricating Devices
  - .1 Equipment to have oil reservoirs with level indicators, or pressure grease fittings.
  - .2 Inaccessible fittings: provide extended tubes to an accessible location.
  - .3 Grease fittings: Zerk or Alemite.
    - .1 All fittings of one type.
- .6 Drive Guards
  - .1 To OSHA requirements.
  - .2 Build guards of all welded construction on exposed rotating parts or elements and on all drives including the following:
    - .1 V-belt drives
    - .2 Flexible couplings
    - .3 Gear drives
  - .3 Construction (except fan drives):
    - .1 Total enclosure type fabricated of minimum 1.3mm (18 ga.) black sheet steel.
    - .2 Hinged side to allow access for lubrication, inspection or removal of the drive parts.
    - .3 Maximum clearance of openings in guards to rotating parts: not to exceed 13mm (1/2").
    - .4 Make provision for slide rail adjustment.
  - .4 Construction for fan drives:
    - .1 V-belt drives: total enclosure type as specified above.
    - .2 Enclosure sides: 13mm (1/2") mesh, 2.7mm (0.105") wire screening.

- .3 Tachometer holes at shaft centres, reinforced as required to maintain rigidity of guard.
- .5 Flexible drive coupling guards:
  - .1 Location: between motor and driven equipment
  - .2 Minimum 1.3mm (18 ga.) black sheet steel, securely fastened to the equipment baseplate and readily removable.
  - .3 Leave a clearance of approx. 13mm to 25mm (1/2" to 1") between the guard and the coupling.
  - .4 Extend the guard to within 13mm (1/2") of both motor and driven equipment housing.
- .6 Rework any substandard guards supplied with mechanical equipment to conform to the above requirements.

**2.3 SEALANTS, CONCRETE AND GROUTS**

- .1 Pipe Sleeve Seals
  - .1 Acceptable Manufacturers:
    - .1 Thunderline "Link-Seal" Series LS
    - .2 Or approved equivalent
- .2 Concrete
  - .1 Strength: Unless otherwise noted, 25 MPa concrete: to CSA-A23.1/A23.2
- .3 Concrete Grouts
  - .1 Acceptable Manufacturers:
    - .1 Sternson "M-Bed Standard"
    - .2 Sika "Sikagrout 212"
    - .3 Master Builders "Construction Grout"
    - .4 Meadows "CG-86"
    - .5 Euclid "Euco NS Grout"
    - .6 CPD "Non-Shrink Grout"
    - .7 Or approved equivalent
- .4 Bonding Agents
  - .1 Acceptable Manufacturers:
    - .1 Sika "Sikadur 32" Hi-Mod
    - .2 Or approved equivalent
- .5 Caulking Compounds
  - .1 Acceptable Manufacturers:
    - .1 Denso-Plast
    - .2 Or approved equivalent

- .6 Firestopping
  - .1 ULC listed firestopping assembly
  - .2 Rating to suit wall and floor penetrations
  - .3 Acceptable Manufacturers:
    - .1 Hilti
    - .2 Fire Stop Systems
    - .3 Dow Corning
    - .4 3M
    - .5 Tremco
    - .6 A/D Fire Protection System
    - .7 Johns Manville
    - .8 Or approved equivalent

## 2.4 MISCELLANEOUS

- .1 Access Doors
  - .1 Size:
    - .1 Minimum size: 300mm x 300mm (12" x 12") size, unless otherwise specified on the Drawings or in other divisions of the Specifications, or as required to replace or repair said equipment.
    - .2 Provide 600 x 600 size access doors where personnel entry is required.
    - .3 Where access doors are required to be located in fire rated walls, floors and ceilings, provide ULC listed and labelled units having a minimum rating in hours per NBC for the structure being penetrated.
  - .2 Material:
    - .1 Fabricated of 2.5mm (12 ga) bonderized steel.
    - .2 Fabricated of 2.5mm (12 ga) stainless steel in areas finished with tile or marble surfaces.
    - .3 Flush mounted, concealed hinges and screwdriver lock.
    - .4 Plast lock and anchor straps.
    - .5 Doors to be of a type and fire rating to suit the particular type of wall or ceiling construction in which they are to be installed.
  - .3 Acceptable Manufacturers:
    - .1 E.H. Price
    - .2 Titus
    - .3 Controlled Air
    - .4 Williams (S.M.S.)
    - .5 Acudor
    - .6 Or approved equivalent

- .2 Isolating Unions
  - .1 Acceptable Manufacturers:
    - .1 Epco
    - .2 Marpac "Petro"
    - .3 Corrosion Service
    - .4 Or approved equivalent
  - .3 Fabricated Equipment Supports (Floor Stands and Ceiling or Wall Mounted Supports)
    - .1 Structural steel members of welded construction or steel pipe and fittings, suitably braced and secured to the floor by mild steel floor pads or pipe flanges with bolts or anchors.

**PART 3**      **EXECUTION**

**3.1**      **EQUIPMENT**

- .1 General
  - .1 Install equipment in a compact, neat and workmanlike manner.
    - .1 Align, level and adjust for satisfactory operation.
    - .2 Install in such a manner that connecting and disconnecting of piping and accessories can be made readily and that all parts are easily accessible for inspection, operation, maintenance and repair.
  - .2 Install and start up items of equipment in accordance with the manufacturer's printed installation and operating instructions.
- .2 Noise and Vibration
  - .1 Noise and vibration levels of equipment and systems shall be within design intent.
  - .2 If noise or vibration levels created by any mechanical equipment and systems and transmitted to occupied portions of building or other mechanical work are over the limits, make all necessary changes and additions as approved by the Consultant without additional cost.
- .3 Lubrication
  - .1 Lubricate all equipment prior to start up in accordance with the manufacturer's printed instructions.
  - .2 Supply all lubrication including sufficient quantity for drainage and refilling of oil sumps, etc., when required by manufacturer's instructions.
- .4 Setting and Alignment of Equipment
  - .1 Rotating equipment (fans, pumps, etc):
    - .1 Use millwrights to set and align to lines established with an engineer's level.
    - .2 Shim equipment using standard brass or bronze shim stock of suitable thickness to provide proper level and alignment.



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- .3 Place 25mm (1") minimum thick grout between equipment base and concrete pad or foundation.
- .4 Have the Consultant approve equipment settings for equipment mounted on concrete pads or foundations prior to grouting.
- .5 Re-check alignment prior to start-up of equipment.

### 3.2 MISCELLANEOUS STEEL

- .1 General
  - .1 Hang or support equipment, piping, ductwork etc., with miscellaneous structural supports, platforms, braces as may be required unless Drawings or other Sections of the Specifications state otherwise.
- .2 Materials and Fabrication
  - .1 Conform to:
    - .1 CAN/CSA-S16.1-M for materials, design of details and execution of the work.
    - .2 CSA-G40.20/G40.21 grade 300W for structural shapes, plates, etc.
    - .3 CSA W47.1 - for qualification of welders.
    - .4 CSA W48.1-M - for electrodes (only coated rods allowed).
    - .5 CSA W59-M - for design of connections and workmanship.
    - .6 CSA W117.2 - for safety.
  - .2 Construction:
    - .1 Welded construction wherever practicable.
    - .2 Chip welds to remove slag, and grind smooth.
    - .3 Bolted joints allowed for field assembly using high strength steel bolts.
- .3 Painting and Cleaning
  - .1 Clean steel to Steel Structures Painting Council SSPC-SP6, Commercial Blast Cleaning.
  - .2 Apply one coat of oil alkyd primer conforming to CISC/CPMA 2.75 to all miscellaneous steel.
  - .3 In the field, touch up all bolt heads and nuts, previously unpainted connections and surfaces damaged during erection with primer as hereinbefore specified.
  - .4 Apply two coats of primer to all surfaces which will be inaccessible after erection.
  - .5 Thoroughly remove all foreign matter from steelwork on completion of installation.

### 3.3 CONCRETE INSERTS

- .1 General
  - .1 Install inserts required for attachment of hangers, either for suspension of piping or equipment.
  - .2 For masonry or poured concrete construction use expansion type units. Insert into the concrete after concrete has cured. Do not use anchors or inserts installed by explosive means.

**3.4            FLASHINGS**

- .1      Coordination
  - .1          Coordinate with general trades and roofing supplier.
- .2      Provide flashing and counter-flashing for all mechanical and related electrical penetrations through roof and parapets (vertical) walls. Costs resulting from failure to comply with this requirement are the sole responsibility of the contractor.
  - .1          Acceptable Manufacturer: Thaler Metal or approved equal.
    - .1              Plumbing Vent: Thaler model MEF-1
    - .2              Flexible steel conduit: Thaler model MEF-2x
    - .3              Hot pipe: MEF-3A with stainless steel collar
    - .4              Type B vents: MEF-4A
    - .5              Rigid conduit: MEF-AE1
    - .6              Gas Piping: MEF-9

**3.5            FIRE STOPPING**

- .1      Submittals
  - .1          Submit shop Drawings, including the following information:
    - .1              ULC/CUL listing number
    - .2              Installation Drawings for each type of penetration
    - .3              Installation materials
- .2      General
  - .1          Seal piping, ductwork, conduits and miscellaneous support steel penetrating fire separations.
  - .2          Install fire stopping in accordance with manufacturer's instructions and ULC listing requirements.
  - .3          Provide a written report on completion of fire stopping, by area or floor if necessary, indicating the work is completed and ready for inspection. Do not cover over fire stopping, including installation of walls and ceilings, until work is inspected.

**3.6            ACCESS DOORS**

- .1      General
  - .1          Supply access doors for installation by other trades in walls or ceilings where accessibility is required for the operation and/or maintenance of:
    - .1              Concealed valves
    - .2              Traps
    - .3              Cleanouts
    - .4              Dampers
    - .5              Fan Coil Units

- .6 Controls equipment

**3.7 ADJUSTMENT AND OPERATION OF SYSTEMS**

- .1 General
  - .1 When the work is complete:
    - .1 Adjust equipment items of the various systems for proper operation within the framework of design intent, and the operating characteristics as published by the equipment manufacturer.
    - .2 Complete additional instructions are specified under the respective Sections of Division 15.
  - .2 The Consultant reserves the right to require the services of an authorized representative of the manufacturer in the event that any item of equipment is not adjusted properly.
    - .1 Arrange for such services and pay all costs thereof.
    - .2 After completion of adjustments, place systems in full operating condition and advise the Consultant that the work is ready for acceptance.

**3.8 ACCEPTANCE**

- .1 General
  - .1 After all equipment has been installed and adjusted and all systems balanced:
    - .1 Conduct performance tests in the presence of the Consultant and the Owner.
    - .2 Arrange the time for these tests at the convenience of the Consultant and the Owner.
    - .3 Conduct tests under climatic circumstances to ensure complete and comprehensive tests and of such a manner and duration as the Consultant may deem necessary.
  - .2 During these tests:
    - .1 Demonstrate the correct performance of all equipment items and of the systems they comprise.
    - .2 Should any system or any equipment item fail to function as required, make such changes, adjustments or replacements necessary to meet performance requirements.
    - .3 Repeat tests until requirements have been fully satisfied and all systems accepted by the Consultant.
  - .3 Performance testing and commissioning of equipment shall be done in conjunction with BAS commissioning to ensure full control and functionality of equipment. Final commissioning and equipment performance reports with consultant and engineer signatures must be supplied. The City's Energy Management team should be engaged for all performance testing and commissioning activities.

**3.9 COORDINATION WITH SEPARATE TESTING AND BALANCING WORK**

- .1 General

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- .1 Contractor shall submit the final TAB report to the Consultant, City's Project Manager and Energy Management teams.
- .2 Review with the Mechanical Contractor before fabrication:
  - .1 Location of balancing devices
  - .2 Test connections
  - .3 Access openings
- .3 Report conditions which could affect optimum system performance.
- .4 Inspection:
  - .1 Assure that all testing, balancing and metering devices are installed properly and in pre-selected locations.
  - .2 Report any errors to the Consultant.
  - .3 The Mechanical Contractor will obtain the approval of the Testing and Balancing Firm before relocating these devices due to field conditions.
- .2 TAB Contractor Coordination
  - .1 Cooperate with the Mechanical Contractor giving adequate prior notification of request for services of tradesmen.
  - .2 Coordinate efforts so that items requiring replacement and/or delivery time (sheaves, motors, etc.) are tested as early as possible.
- .3 Mechanical Contractor Coordination
  - .1 Cooperate with the Testing and Balancing Firm.
  - .2 Provide the following assistance and/or services:
    - .1 Schedule sufficient time so that the initial testing and balancing can be completed before occupancy begins and coordinate with the trades involved.
    - .2 Keep the Testing and Balancing Company informed of any major changes made during construction and provide same with a set of project Drawings and reviewed Shop Drawings.
    - .3 Provide balancing devices, test connections access openings, balancing probe inlets and plugs.
    - .4 Clean and pre-run all equipment, filters, etc. and place all heating, ventilating and air conditioning systems into full operation and continue same during each working day of testing and balancing.
    - .5 Provide immediate labour from pertinent mechanical trades and tools, equipment and materials to make equipment and system alterations and adjustments, as required including control adjustments.
    - .6 Make available all equipment data (Shop Drawing performance data and operating instructions) to the Testing and Balancing Firm.
  - .3 As part of the coordination effort, the Mechanical Contractor will be fully responsible for systems constructed, installed and adjusted to Provide optimum performance as required by design intent. Any re-adjusting required as the result of spot checks by the Consultant shall be done at no increase in Contract Price.

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- .4      Nothing contained in this Section voids the responsibility of the Mechanical Contractor (Subcontractor) for systems constructed, installed and adjusted to achieve the design intent.

**END OF SECTION**

**1 General**

**1.1 REFERENCES**

- (a) Provide work of this Section in accordance with the Contract Documents.

**1.2 SUMMARY**

- (a) Section Includes: Wall exhaust fans

**1.3 REFERENCE STANDARDS**

- (a) Comply with the latest edition of the standards referenced herein:
  - (i) Fan: designed and constructed in strict conformity with the AMCA Standards and bearing the "Certified Rating Seal".
  - (ii) Applicable sections of CSA C22.2 No. 113 for fan construction and installation.

**1.4 SUBMITTALS**

- (a) Shop Drawings
  - (i) Submit manufacturer's certified shop drawings to the Consultant and include:
    - (a) Complete information on fan construction and performance
    - (b) Performance curves over full range from shut-off to free delivery
    - (c) Drive details
    - (d) Make, type and catalogue number of bearings
    - (e) State hour rating of bearings when specified

**1.5 QUALITY ASSURANCE**

- (a) Performance ratings: Conform to AMCA standard 211 and 311. Fan must be tested in accordance with ANSI/AMCA Standard 210-99 and AMCA Standard 300- 96 in an AMCA accredited laboratory. Fan shall be certified to bear the AMCA label for air and sound performance seal.
- (b) Classification for Spark Resistant Construction, levels A, B, and C conform to AMCA 99.
- (c) Each fan shall be given a balancing analysis which is applied to wheels at the outside radius. The maximum allowable static and dynamic imbalance is 0.05 ounces (Balance grade of G6.3).

- (d) Comply with the National Electrical Manufacturers Association (NEMA), standards for motors and electrical accessories.

#### **1.6 DELIVERY, STORAGE, AND HANDLING**

- (a) Delivery: Deliver materials to site in manufacturer's original, unopened containers and packaging, with labels clearly indicating manufacturer, material, products included, and location of installation.
- (b) Storage: Store products in a dry area indoor, protected from damage, and in accordance with manufacturer's instructions. For long term storage follow manufacturer's Installation, Operations, and Maintenance Manual.
- (c) Handling: Handle and lift fan in accordance with the manufacturer's instructions. Protect materials and finishes during handling and installation to prevent damage. Follow all safety warnings posted by the manufacturer.

#### **1.7 WARRANTY**

- (a) Manufacturer's Warranty: Submit, for Owner's acceptance, manufacturer's standard warranty document executed by authorized company official. Manufacturer's warranty is in addition to, and not a limitation of, other rights Owner may have under Contract Documents.
- (b) The warranty of this equipment is to be free from defects in material and workmanship for a period of one year from the purchase date. Any units or parts which prove defective during the warranty period will be replaced at the Manufacturer's option when returned to Manufacturer, transportation prepaid.
- (c) Motor Warranty is warranted by the motor manufacturer for a period of one year. Should motors furnished by us prove defective during this period, they should be returned to the nearest authorized motor service station.

#### **1.8 MAINTENANCE**

- (a) Refer to Manufacturer's Installation, Operation and Maintenance Manual (IOM), to find maintenance procedures.

### **PART 2 - Products**

#### **2.1 SIDEWALL AXIAL EXHAUST FAN**

- (a) The basis of design is Greenheck or Approved Equivalent.
- (b) Fans shall be direct drive, axial type sidewall fans as described herein.
- (c) Maximum continuous operation temperature shall be 130°F (54.4°C). Minimum continuous operating temperature shall be -10°F (-24°C).

## EXHAUST FANS

- (d) Each fan shall bear a permanently affixed manufacturer's engraved metal nameplate containing the model number, individual serial number and date of installation.
- (e) Propeller
  - (i) Propellers shall be constructed with cast aluminum blades and hubs.
  - (ii) Propellers shall be securely attached to the fan shafts.
  - (iii) All propeller fans shall be statically and dynamically balanced.
- (f) All fans shall be complete with a Vari-Green motor, and all motors shall be permanently lubricated. Easy access shall be provided for maintenance. Internal motor circuitry to convert AC power supplied to the fan to DC power to operate the integrated variable frequency drive.
- (g) Drive Frame:
  - (i) Drive frame assemblies and fan panels shall be galvanized steel.
  - (ii) Drive frames and fan panels shall be bolted construction.
  - (iii) Drive frame shall be formed steel and fan panels shall have pre-punched mounting holes, formed flanges, and a deep formed inserted venturi.
- (h) Disconnect Switches:
  - (i) NEMA: Rating 1 (indoor application).
  - (ii) Positive electrical shut-off.
  - (iii) Wired from fan motor to junction box.
- (i) The axial exhaust fans shall bear the AMCA Certified Ratings Seals for both sound and air performance.
- (j) Dampers
  - (i) Type: Backdraft.
  - (ii) Dampers shall close when the fan is turned off.
  - (iii) All dampers shall be balanced for minimal resistance to flow.
  - (iv) Galvanized frames with pre-punched mounting holes.
  - (v) Damper guards shall be constructed of cast aluminum and shall completely close the damper or wall opening on the discharge of the fan.
- (k) Wall Housing:



## EXHAUST FANS

- (i) Shall be constructed of galvanized steel with heavy gauge mounting flanges and pre-punched mounting holes.
  - (ii) Housing shall include OSHA approved motor guard.
- (l) Provide a wall collar constructed of galvanized steel with heavy gauge mounting flanges and pre-punched mounting holes.
- (m) Weather hood kit:
  - (i) Shall shield wall opening and dampers from rain and snow.
  - (ii) Material type: Galvanized Steel.
  - (iii) Turndown angle: 45 degrees.
  - (iv) Screen: Bird screen.
  - (v) Finishes: None.
- (n) Accessories per fan:
  - (i) Engineered wall housing to support the fan on the specified.
  - (ii) Vibration isolators / hangers.
  - (iii) Flexible duct connectors,
  - (iv) Discharge flanges.
  - (v) Protective guard and wire mesh as inlet.
  - (vi) Structural steel supports.

## 2.2 EXECUTION

## 2.3 GENERAL

- (a) Fan installation
  - (i) Install as per manufacturer's recommendations.
- (b) Air Balancing
  - (i) Adjust variable pitch fan/motor sheaves during balancing to achieve specified air quantities.
- (c) Preparation

## EXHAUST FANS

- (i) Ensure wall openings are square, accurately aligned, correctly located, and in tolerance.
- (d) Adjusting
  - (i) Adjust exhaust fan to function properly
  - (ii) Adjust Belt Tension
  - (iii) Lubricate bearings
  - (iv) Adjust drive for final system balancing
  - (v) Check wheel overlap
- (e) Cleaning
  - (i) Clean as recommended by manufacturer. Do not use material or methods which may damage finish surface or surrounding construction
- (f) Protection
  - (i) Protect installed product and finished surfaces from damage during construction
  - (ii) Protect installed exhaust fan to ensure that, except for normal weathering, fan will be without damage or deterioration at time of substantial performance.

**END OF SECTION**

**PART 1-        General**

**1.1        REFERENCES**

- .1        American National Standards Institute (ANSI)/Air Conditioning and Refrigeration Institute (ARI)
  - .1        ANSI/ARI 210/240-03, Unitary Air-Conditioning and Air-Source Heat Pump Equipment.
  - .2        ARI 270-95, Sound Rating of Outdoor Unitary Equipment.
- .2        ANSI/UL 1995 B-1998, Standard for Heating and Cooling Equipment.
- .3        ANSI/ASHRAE 15 – Safety Code for Mechanical Refrigeration.
- .4        AHRI 340/360-2015- Commercial and Industrial Unitary Air Conditioning Equipment testing and rating standard.
- .5        AHRI 270 – Sound Rating of Outdoor Unitary Equipment.
- .6        Canadian Standards Association (CSA International)
  - .1        CSA B52-99, Mechanical Refrigeration Code.
  - .2        CSA C22.1 HB-02, Canadian Electrical Code Handbook.
- .7        Health Canada / Workplace Hazardous Materials Information System (WHMIS)
  - .1        Material Safety Data Sheets (MSDS).

**1.2        SUBMITTALS**

- .1        Product Data:
  - .1        Submit manufacturer's printed product literature, specifications and datasheet for packaged rooftop HVAC units.
- .2        Shop Drawings:
  - .1        Submit shop drawings to indicate project layout and dimensions; indicate:
    - .1        Equipment, piping, and connections, together with valves, strainers, control assemblies, thermostatic controls, auxiliaries and hardware, and recommended ancillaries which are mounted, wired and piped ready for final connection to building system, its size and recommended bypass connections.

- .2 Piping, valves, fitting shipped loose showing final location in assembly.
  - .3 Control equipment shipped loose, showing final location in assembly.
  - .4 Dimensions, internal and external construction details, recommended method of installation with proposed structural steel support, mounting curb details, sizes and location of mounting bolt holes; include mass distribution drawings showing point loads.
  - .5 Detailed composite wiring diagrams for control systems showing factory installed wiring and equipment on packaged equipment or required for controlling devices of ancillaries, accessories, controllers.
  - .6 Fan performance curves.
  - .7 Details of vibration isolation.
  - .8 Estimate of sound levels to be expected across individual octave bands in dB referred to A rating.
  - .9 Type of refrigerant used.
- 
- .3 Test Reports: Submit certified test reports from approved independent testing laboratories indicating compliance with specifications for specified performance characteristics and physical properties.
  - .4 Certificates: Submit certificates signed by manufacturer certifying that materials comply with specified performance characteristics and physical properties.

### 1.3 QUALITY ASSURANCE

- .1 Units shall meet ASHRAE 90.1 minimum efficiency requirements.
- .2 3-phase units shall be Energy Star certified.
- .3 Units shall be rated in accordance with AHRI Standards 340/360.
- .4 Units shall be UL-tested and certified in accordance with ANSI Z21.47 Standards and UL or ETL-listed and certified under Canadian standards as a total package for safety requirements.
- .5 Insulation and adhesive shall meet NFPA 90A requirements for flame spread and smoke generation.
- .6 Units shall be designed in accordance with ISO 9001, and shall be manufactured in a facility registered by ISO 9001.

- .7 Units shall be subjected to a completely automated run test on the assembly line. The data for each unit will be stored at the factory, and must be available upon request.
- .8 Units shall be designed in accordance with UL Standard 1995, including tested to withstand rain.
- .9 Units shall be constructed to prevent intrusion of snow and tested to prevent snow intrusion into the control box up to 40 mph.

#### **1.4 DELIVERY, STORAGE AND HANDLING**

- .1 Units shall be stored and handled per manufacturer's recommendations.
- .2 Lifted by crane requires either shipping top panel or spreader bars.
- .3 Units shall only be stored or positioned in the upright position.

## **2 Products**

### **2.1 Dehumidifier**

- .1 General:
  - .1 The Dehumidifier shall be suitable for indoor installation and shall be capable of automatic continuous operation. The unit shall be complete with hot gas reheat and shall be capable of the minimum moisture removal as specified.
  - .2 All access panels shall be weather tight and shall not allow temperature or moisture infiltration into the system.
  - .3 The dehumidifier shall be a tested factory assembled unit which includes gas heaters for reactivation heat, TEFC motors on both process and reactivation fans, replaceable high capacity pleated filters, direct drive fans, desiccant wheel chain drive system, high capacity desiccant wheel, rated electrical panel, internal safeties and automatic controls.
  - .4 The dehumidifier shall be Thermoplus Air, IRD series unit or equal approved.
- .2 Construction:
  - .1 Cabinet:
    - .1 The units shall be constructed with a combination of 16-gauge and 20-gauge, satin coated steel, reinforced for maximum rigidity with a 14-gauge base.

## DEHUMIDIFIERS

- .2 Removable service panels shall be furnished to provide access to all internal parts.
- .3 Each unit shall have a built-in electrical control panel in a separate compartment within the dehumidifier.
- .2 Condensation Prevention:
  - .1 Condensation on the outer surfaces of the unit during operation is not acceptable. Units must be designed to prevent water vapour from condensing on the outer surfaces of the unit enclosure.
  - .3 Compressor and Evaporator (Dehumidifier Coil): The refrigeration circuit shall operate on R448A.
- .3 Acceptable Manufacturers:
  - .1 Thermoplus Air or approved equal

### 3 Execution

#### 3.1 MANUFACTURER'S INSTRUCTIONS

- .1 Compliance: comply with manufacturer's written recommendations or specifications, including product technical bulletins, handling, storage and installation instructions, and datasheet.

#### 3.2 INSTALLATION

- .1 Install as per manufacturers' instructions on roof curb adaptors provided by manufacturer.
- .2 Manufacturer to certify installation, supervise start-up and commission units.
- .3 Provide an insulated drain pipe c/w pre-engineered p-trap from the cooling coil condensate drain pan to discharge into a nearest existing sanitary drain.
- .4 Contractor shall verify all existing site conditions prior to order any equipment.

#### 3.3 FIELD QUALITY CONTROL

- .1 Manufacturer's Field Services:
  - .1 Have manufacturer of products supplied under this Section review work involved in handling, installation/application, protection and cleaning of its product[s], and

submit written reports, in acceptable format, to verify compliance of work with Contract.

- .2 Provide manufacturer's field services, consisting of product use recommendations and periodic site visits for inspection of product installation, in accordance with manufacturer's instructions.
- .3 Schedule site visits to review work at stages list.

### **3.4 CLEANING**

- .1 Perform cleaning operations as specified and in accordance with manufacturer's recommendations.
- .2 On completion and verification of performance of installation, remove surplus materials, excess materials, rubbish, tools and equipment.

**END OF SECTION**

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### **PART 1 - General**

#### **1.1 GENERAL REQUIREMENTS**

- (a) Comply with the City of Brampton General Conditions, Supplementary Conditions, Invitation to Tender and Division 26.

#### **1.2 APPLICATION**

- (a) This Section applies to and is an integral part of all succeeding Sections of this Division of the specification.

#### **1.3 DEFINITIONS**

- (a) The following are definitions of words found in Sections of this Specification and on associated drawings:
- (b) "Concealed" - hidden from normal sight in furred spaces, shafts, crawl spaces, ceiling spaces, walls and partitions;
- (c) "Exposed" - all work normally visible to building occupants;
- (d) "Provide" (and tenses of "Provide") - supply, install and connect complete.
- (e) "Install" (and tenses of "install") - install, and connect complete;
- (f) "Supply" - Supply only.
- (g) "Work" - all equipment, permits, materials and labour to provide a complete electrical installation as required and detailed in Drawings and Specification.
- (h) "Authorities" or "Authorities Having Jurisdiction" - any and all current laws and/or by-laws of any federal, provincial or local authorized agencies having jurisdiction over the sum total or parts of the work including, but not restricted to the Municipal Planning and Building Department, Municipal Fire Department, Labour Canada, The Provincial Fire Marshall, The Local Hydro Supply Authority, The Ontario Building Code, The Construction Safety Act, Municipal Public Works Department, the Canadian Electrical Code with Ontario Supplement, hereinafter referred to as the "Code", the Electrical Safety Authority and all Inspection Bulletins.
- (i) "Drawings and Specifications" - "the Contract Drawings and Specifications".
- (j) "Consultant" shall mean the firm of Moon Matz Ltd., or other person authorized to act on their behalf.

#### **1.4 WORK INCLUDED**

- (a) Provide all labour, materials, equipment and services to complete the Work of the Electrical Division as further specified and as shown on the Contract Drawings.



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### 1.5 SCHEDULING OF PRODUCT DELIVERY

- (a) Every effort must be made to ensure delivery of all materials and products in the Contract Documents on time. At commencement of Contract, assist Contractor in preparation of schedule of order dates for items requiring long delivery periods.

### 1.6 EXAMINATION OF SITE

- (a) Prior to submitting a bid carefully examine conditions at the site, which may or will affect the work. Refer to and examine all Contract documents, including room finish schedules to determine finished, partially finished and unfinished areas of the building.
- (b) Ensure that materials and equipment are delivered to the site at the proper time and in such assemblies and sizes so as to enter into the building and to be moved into the spaces where they are to be located without difficulty. Be responsible for any cutting and patching involved in getting assemblies into place.

### 1.7 QUALITY ASSURANCE:

- (a) General Codes and Standards:
  - (i) Comply with the Ontario Building Code and Canada Labour Code, Part 4.
  - (ii) Where provisions of pertinent codes or local by-laws conflict with these Specifications and Drawings or each other, comply with the more stringent provisions.
  - (iii) Operating voltages shall comply with CAN3-C235-83 (R2015).
  - (iv) Ground system shall comply with CSA Standard C22.1.
  - (v) Abbreviations for electrical terms: to CSA Z85-1983
- (b) Provide new materials bearing certification marks or labels acceptable under Ontario Electrical Safety Code.
  - (i) Equipment must bear, on manufacturer's label, certification mark or label acceptable under Electrical Safety Authority.
- (c) Provide units of same manufacture where two or more units of same class or type of equipment are required.
- (d) Manufacturer's names are stated in this Specification to establish a definite basis for bid submission and to clearly describe the quality of product that is desired for the work.
- (e) Standard Specifications
  - (i) Ensure that the chemical and physical properties, design, performance characteristics and methods of construction of all products provided comply with latest issue of applicable Standard Specifications issued by authorities having jurisdiction, but such Standard

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Specifications shall not be applied to decrease the quality of workmanship, products and services required by the Contract Documents.

- (f) Electrical Codes and Permits:
  - (i) The work shall be bid on and shall be carried out in accordance with these Drawings and Specifications and shall comply with the essential requirements of the latest editions of the Canadian Electrical Code C. 22.1 and the Electrical Safety Code (together with applicable bulletins issued by the Inspection Department of Electrical Safety Authority). In no instance, however, shall the standards established by the Drawings and Specifications be reduced by any of the codes referred to above. In the event of conflicting requirements, the codes shall take precedence over these Contract Documents and the Engineer's decision shall be final.
  - (ii) Arrange for and obtain all necessary permits, inspection and approvals from authorities having jurisdiction, and also pay all applicable fees. The Contractor shall conform with all Municipal Codes and By-laws which affect the work.
  - (iii) Applicable Codes
    - (a) Ontario Electrical Safety Code
    - (b) Canadian Electrical Code with applicable regional amendments
    - (c) Ontario Building Code
    - (d) National Building Code
    - (e) Ontario Fire Code
    - (f) National Fire Code and Fire Commissioner Canada requirements
  - (iv) Before starting any work, submit the required number of copies of Drawings and Specifications to the Electrical Safety Authority and the local authority for approval and comments. Comply with any changes requested as part of the Tender, but notify the Engineer immediately of such changes for proper processing of these requirements. Prepare and furnish any additional Drawings, details or information as may be required by the Engineer.
  - (v) On or before the completion of this Contract, obtain at own expense, the necessary certificate of inspection from the Inspection Branch of the Electrical Safety Authority of Ontario and forward same to the Engineer.
  - (vi) Equipment and material must be acceptable to Electrical Safety Authority.
  - (vii) Where materials are specified which require special inspection and approval, obtain such approval for the particular installation with the co-operation of the material supplier.

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- (viii) Supply and install warning signs, nameplates and glass covered Single Line Diagrams as required by Electrical Safety Authority.
- (ix) Submit required Documents and shop drawings to authorities having jurisdiction in order to obtain approval for the Work. Copies of Contract Drawings and Specifications may be used for this purpose.

### 1.8 REQUIREMENTS OF DRAWINGS:

- (a) Contract:
  - (i) The Drawings for electrical work are essentially performance drawings, partly schematic, intended to convey the scope of work and extent of work. They only indicate general arrangement and approximate location of apparatus, fixtures and general typical sizes and locations of equipment and connections. The Drawings do not intend to show architectural, structural or mechanical details.
  - (ii) Do not scale Drawings, but obtain information involving accurate dimensions to structure from those shown on Architectural and Structural Drawings, or by site measurements of existing areas. Follow the Electrical Drawings in laying out the work but consult general Construction Drawings as well as detail Drawings to become familiar with all conditions affecting the work, and verify spaces in which the work will be installed and structures to which it will be attached.
  - (iii) Make, at no additional cost, any changes or additions to materials, and/or equipment necessary to accommodate structural conditions (runs around beams, columns, etc.). Alter, at no additional cost, the location of materials and/or equipment up to 3m, or as directed, provided that the changes are made before installation and do not necessitate additional material or labour.
  - (iv) Leave space clear and install work to accommodate future materials and/or equipment as indicated and to accommodate equipment and/or material supplied by other trades. Verify all equipment sizes in relation to space allowed and check all clearances.
  - (v) Confirm on the site, the exact location and mounting elevation of equipment and fixtures as related to Architectural or Structural details. Confirm location of outlets and/or connection points for equipment supplied by other trades.

### 1.9 SHOP DRAWINGS:

- (a) Pay careful attention to all shop drawings and review comments and ensure that all requirements are fully complied with.
- (b) Submit prior to commencement of work for review, manufacturer's or vendor's drawings for all products being furnished except cable (up to 1000V), wire and conduit. Include rating, performance, specification sheets, descriptive literature, schematic and wiring diagrams, dimensional layouts and weights of components as well as complete assembly .

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- (c) Carefully examine Work and Drawings of all related trades and thoroughly plan the Work so as to avoid interferences. Report defects which would adversely affect the Work. Do not commence installation until such defects have been corrected.
- (d) Submit prior to commencement of work for review, properly identified shop drawings showing in detail the design and construction of all equipment and materials as requested in sections of the specification governed by this Section.
- (e) Obtain and comply with the manufacturer's installation instructions.
- (f) Endorse each shop drawing copy "CERTIFIED TO BE IN ACCORDANCE WITH ALL REQUIREMENTS", stamp each copy with your company name, date each copy with the submittal date, and sign each copy. Shop drawings which are received and are not endorsed, dated and signed will be returned for re-submittal.
- (g) The Consultant will stamp shop drawings as follows:
  - (i) Drawing: Reviewed ( )
  - (ii) Reviewed as Modified ( )
  - (iii) Revise and Resubmit ( )
  - (iv) Not Reviewed ( )
- (h) If "REVIEWED" is checked-off, the shop drawing is satisfactory. If "REVIEWED AS MODIFIED" is checked-off, the shop drawing is satisfactory subject to requirements of remarks put on shop drawing copies. If "REVISE AND RE-SUBMIT" is checked-off, the shop drawing is entirely unsatisfactory and must be revised in accordance with comments written on shop drawing copies and resubmitted. If "NOT REVIEWED" is checked-off, the shop drawing is in error of submission, not applicable for this project.
- (i) This review by the Consultant/Engineer is for the sole purpose of ascertaining conformance with the general design concept. This review shall not mean that the Consultant/Engineer approved the detail design inherent in the shop drawings, responsibility for which shall remain with the Contractor and such review shall not relieve the Contractor of responsibility for errors or omissions in the shop drawings or of responsibility for meeting all requirements of the Contract documents. Be responsible for dimensions to be confirmed and correlated at the job site, for information that pertains solely to fabrication processes or to techniques of construction and installation, and for co-ordination of the work as well as compliance with codes and inspection authorities such as C.S.A., etc.
- (j) Coordinate Work of this Division such that items will properly interface with Work of other Divisions.
- (k) Architectural Drawings, or in the absence of Architectural Drawings, Mechanical Drawings govern all locations.

### **1.10 SUBSTITUTIONS**

- (a) When more than one manufacturer's trade name is specified for a material or product, the choice is the bidders.
- (b) No substitution is allowed upon award of Tender.

**1.11 DIMENSIONS AND QUANTITIES**

- (a) Dimensions shown on Drawings are approximate. Verify dimensions by reference to shop drawings and field measurement.
- (b) Quantities or lengths indicated in Contract Documents are approximate only and shall not be held to gauge or limit the Work.
- (c) Make necessary changes or additions to routing of conduit, cables, and the like to accommodate structural, mechanical and architectural conditions. Where raceways are shown diagrammatically run them parallel to building column lines.

**1.12 EQUIPMENT LOCATIONS**

- (a) Devices, fixtures and outlets may be relocated, prior to installation, from the location shown on the Contract Drawings, to a maximum distance of 3 m without adjustment to Tender price.
- (b) Switch, control device and outlet locations are shown diagrammatically.

**1.13 WORKING DRAWINGS AND DOCUMENTS**

- (a) Contractor may be required to prepare working detail drawings supplementary to the Contract drawings, when deemed necessary by the Consultant, for all areas where a multiplicity of materials and or apparatus occur, or where work due to architectural and structural considerations involves special study and treatment. Such drawings may be prepared jointly by all trades affected, or by the one (1) trade most affected with due regard for and approval of the other trades, all as the Consultant will direct in each instance. Such drawings must be reviewed by the Consultant before the affected work is installed.
- (b) Carry out all alterations in the arrangement of work which has been installed without proper study and approval, even if in accordance with the Contract documents, in order to make such work come within the finished lines of walls, floors and ceilings, or to allow the installation of other work, without additional cost. In addition, make any alterations necessary in other work required by such alterations, without additional cost.

**1.14 INSTALLATION DRAWINGS**

- (a) Prepare installation drawings for equipment, based upon approved Vendor drawings, to check required Code clearances, raceway, busway and cable entries, sizing of housekeeping pads and structure openings. Submit installation drawings to Consultant for review.

**1.15 "AS BUILT" RECORD DRAWINGS**

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- (a) Maintain a set of Contract Drawings on site and record all deviations from the Contract Documents. As a mandatory requirement, recording must be done on the same day deviation is made. Be responsible for full compliance with this requirement.
- (b) Mark locations of feeder conduits, junction and terminal boxes and ducts or conduits run underground either below the building or outside the building.
- (c) Where conduit and wiring are underground or underfloor, furnish field dimension with respect to building column lines and inverts with respect to finished floor levels or grades.
- (d) Record deviations from branch circuit numbers shown on Drawings.
- (e) Prepare diagrams of interconnecting wiring between items of equipment including equipment supplied by Owner and under other Specification Sections.

### **1.16 TEST REPORTS**

- (a) For each check and test performed prepare and submit a Test Report, signed by the Test engineer, and where witnessed, by the Consultant.
- (b) Include record of all tests performed, methods of calculation, date and time of test, ambient conditions, names of testing company, test engineer, witnesses, also calibration record of all test instruments used together with manufacturers name, serial number and model number.
- (c) Include calibration record, percentage error and applicable correction factors.
- (d) Submit a Certified Test Report from each manufacturer, signed by the certifying inspector, confirming correct installation and operation of each product and part of Work. Include name of certifying inspector, date and times of inspection, ambient conditions.

### **1.17 FACTORY WITNESS TESTS**

- (a) Prior to Consultant attendance at factory for witness testing, perform the following:
  - (i) Successfully pre-factory test.
- (b) Following successful testing, inform the Consultant, in writing, that tests to be witnessed have been successfully performed.

### **1.18 FIRE BARRIERS**

- (a) Where electrical material or devices pass through fire rated separations, make penetrations and provide fire barrier seals with a fire resistance rating equivalent to the rating of the separation.
- (b) Prior to installation, submit for review, proposed fire barrier seal materials, method of installation and ULC system number.
- (c) Acceptable Manufacturers:

- (i) A/D Fire Protection Systems
- (ii) Dow Corning
- (iii) Fire Stop Systems
- (iv) IPC Flamesafe Firestop
- (v) Nelson Electric
- (vi) 3M
- (vii) Tremco

**1.19 MISCELLANEOUS METAL FABRICATIONS**

- (a) Provide miscellaneous structural supports, platforms, braces, brackets and preformed channel struts necessary for suspension, attachment or support of electrical. All supports, platforms, brackets and channel struts shall be made of stainless steel material.

**1.20 SLEEVE AND FORMED OPENING LOCATION DRAWINGS**

- (a) Prepare and submit to the Consultant for review and forwarding to the appropriate Sub-trade, drawings indicating all required sleeves. Such drawings shall be completely and accurately dimensioned and shall relate sleeves, recesses, and formed openings to suitable grid lines and elevation datum. Begin to prepare such drawings immediately upon notification of acceptance of bid and award of Tender. Make all modifications to locations as directed by Structural Engineer at no extra cost to Tender price.

**1.21 SUPERINTENDENCE**

- (a) Maintain at the job site, at all times, competent personnel and supporting staff, experienced in erecting, supervising, testing and adjusting projects of comparable nature and complexity.

**1.22 PATENTS**

- (a) Pay all royalties and licence fees, and defend all suits or claims for infringement of any patent right, and save the Owner and Consultant harmless of loss or annoyance on account of suit, or claims of any kind for violation of infringement of any letters, patent or patent rights, by this Subcontractor or anyone directly or indirectly employed by him or by reason of the use by him or them of any part, machine, manufacture or composition of matter on the work, in violation or infringement or such letters, patent or rights.

**1.23 RIGHTS RESERVED**

- (a) Rights are reserved to furnish any additional detail drawings, which in the judgment of the Consultant may be necessary to clarify the work and such drawings shall form a part of this Tender.

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### 1.24 METALS

- (a) Steel construction required solely for the work of electrical trades and not shown on architectural or structural drawings shall be provided by this trade in accordance with applicable code requirements.

### 1.25 FLASHING

- (a) Flash electrical parts passing through or built into a roof, an outside wall, or a waterproof floor.
- (b) Provide sleeves passing through outside walls with lead or copper flashing as directed.

### 1.26 WORKMANSHIP

- (a) Install equipment, ductwork, conduit and cables in a workmanlike manner to best suit space, to present a neat appearance and to function properly to the satisfaction of the Consultant.
- (b) Install equipment and apparatus requiring maintenance, adjustment or eventual replacement with due allowance therefore.
- (c) Include in the work all requirements of manufacturers shown on the shop drawings or manufacturers installation instruction.
- (d) Replace work unsatisfactory to the Consultant without extra cost.
- (e) Make provision to accommodate future plant and equipment indicated on drawings.
- (f) Protect from damage all equipment delivered to the site and during installation. Any damage or marking of finished surfaces shall be made good to the satisfaction of the Consultant.

### 1.27 MOUNTING HEIGHTS

- (a) Mounting height of equipment is from finished floor to centreline of equipment unless specified or indicated otherwise.
- (b) If mounting height of equipment is not indicated verify before proceeding with installation.

### 1.28 OWNER RIGHT TO RELOCATE ELECTRICAL ITEMS

- (a) The Owner reserves the right to relocate electrical items (light fixtures, battery pack) during construction, but prior to installation, without cost, assuming that the relocation per item does not exceed 3 m (10'-0") from the original location. No credits shall be anticipated where relocation per item of up to and including 3m reduces materials, products and labour.
- (b) Should relocations per item exceed 3m from the original location the Tender price will be adjusted accordingly.
- (c) Necessary changes, due to lack of co-ordination, and as required and when approved, shall be made at no additional cost, to accommodate structural and building conditions. The location of



pipes and other equipment shall be altered without charge to the Owner, if approved, provided the change is made before installation.

**1.29 OPERATING AND MAINTENANCE INSTRUCTION MANUALS**

- (a) Each copy of the manual shall include:
  - (i) A set of as-built prints;
  - (ii) Letters of Owners Instructions;
  - (iii) Final Electrical Safety Authority Certificate of Inspection;
  - (iv) Verification Certificates for all systems as specified hereinafter;
  - (v) A copy of "reviewed" shop drawings;
  - (vi) Complete explanation of operation principles and sequences;
  - (vii) Complete part lists with numbers;
  - (viii) Recommended maintenance practices and precautions;
  - (ix) Parts manual and repair manuals
  - (x) Complete wiring and connections diagrams;
  - (xi) Certificates of guarantee;
  - (xii) Single Line Diagram
- (b) Ensure that operating and maintenance instructions are specific and apply to the models and types of equipment provided.

**1.30 TRIAL USAGE**

- (a) The Consultant/Engineer reserves the right to use any system, piece of equipment, device, or material for such reasonable lengths of time and at such times as may be required to make a complete and thorough test of the same, or for the purpose of learning operational procedures, before the final completion and acceptance of the work. Such tests shall not be construed as evidence of acceptance of the work, and it is agreed and understood that no claim for damage will be made for injury or breakage to any part or parts of the above due to the aforementioned tests, where such injuries or breakage are caused by a weakness or inaccuracy of parts, or by defective materials or workmanship of any kind. Supply all labour and equipment required for such tests.
- (b) Perform and pay for all costs associated with any testing required on the system components where, in the opinion of the Consultant/ Engineer the equipment manufacturer's ratings or specified performance is not being achieved.

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### 1.31 INSTRUCTION TO OWNERS

- (a) Instruct the Owner's designated representatives in all aspects of the operation and maintenance of all systems and equipment.
- (b) Arrange for, and pay for services of service engineers and other manufacturer's representatives required for instruction in the operation of systems and equipment.
- (c) Submit to the Consultant at the time of final inspection a complete list of systems stating for each system:
  - (i) Date instruction were given to the Owner's staff.
  - (ii) Duration of instruction.
  - (iii) Name of persons instructed.
  - (iv) Other parties present (manufacturer's representative, consultants, etc.)
- (d) Obtain the signature of the Owner's staff verifying that they properly understood the system installation, operation and maintenance requirements, and that they have received the specified manuals and "as-built" drawings.

### 1.32 SYSTEM ACCEPTANCE

- (a) Submit original copies of letters from the manufacturers of all systems indicating that their technical representatives have inspected and tested the respective systems and are satisfied with the method of installation, connection and operation.
- (b) These letters shall state the names of persons present at testing, the methods used, and a list of functions performed with location and room numbers where applicable.

### 1.33 CLEANING

- (a) Before energizing any systems, inspect and clean the inside of panel boards, switchgear, and cabinets to ensure that they are completely free from dust and debris.
- (b) Clean all polished, painted and plated work bright.
- (c) Remove all debris, surplus material and all tools
- (d) Carry out additional cleaning operating of systems as specified in other sections of this Division.

### 1.34 PAINTING WORK SUPPLIED UNDER DIVISION 26

- (a) Touch up minor chips or damage to electrical equipment, installed in this Division, with standard, factory supplied, enamel finish.

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- (b) Colour code, as specified herein, outlet boxes, pull boxes, junction boxes by applying a small dab of paint to inside of each item during installation.
- (c) Colour code, as specified herein, all exposed ducts, conduits, outlet boxes, and similar items by applying a 25 mm (1") wide band of paint around ducts and conduits adjacent to boxes described in above paragraph and on both sides of wall penetration.

### **1.35 REMOVALS**

- (a) Co-ordination between New and Existing Installations
  - (i) Provide interfacing components between new and existing systems as necessary for proper performance and operation.
- (b) Existing Services
  - (i) Ensure existing services remain undisturbed and energized except where indicated.
  - (ii) Disconnect and remove abandoned wiring materials and devices.
- (c) Modifications to Existing Structures
  - (i) Provide new electrical equipment to existing structures as detailed on drawings. Remove existing devices as shown and as required. Salvage existing circuits for reuse as noted.
- (d) Interruption of Services
  - (i) Maintain existing systems in existing school at all times during construction.
  - (ii) Obtain Consultant's written approval before interrupting any service. Long outages are not acceptable.
  - (iii) Provide temporary services (i.e. temporary generator) to maintain continuity in the event that services must be interrupted at contractors expense.
- (e) Premium Time
  - (i) Power shutdowns to the site will only be allowed on weekends between the hours of Friday 12.00 midnight to Sunday 12.00 midnight. Include all costs for this overtime work in the contractor's bid.
  - (ii) Include cost of premium time in bid price for work during nights, weekends or other time outside normal working hours necessary to do the work and maintain electrical services in operation.
  - (iii) Premium time is to include work by local hydro authority, ESA and any other authorities having jurisdiction as required.
- (f) Use of Existing Material And Equipment

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- (i) Unless noted otherwise, do not use any existing panels, boxes and wiring materials unless shown on drawings.
- (g) Demolition
  - (i) Demolish existing work, where indicated, and remove from site.
  - (ii) Execute all demolition work so as to create minimum vibration or dust within and outside the building. Obtain Consultant's approval of methods before proceeding.

### **PART 2 - Products**

#### **2.1 NOT USED**

- (a) Not Used

### **PART 3 - Execution**

#### **3.1 NOT USED**

- (a) Not Used

**END OF SECTION**

**PART 1 - General**

**1.1 GENERAL REQUIREMENTS**

- (a) Conform to all applicable Sections of Division 1.

**1.2 REFERENCES**

- (a) CSA C22.2 No.0.3-92, Test Methods for Electrical Wires and Cables
- (b) CSA C22.2 No.38-05, Thermoset-Insulated Wires and Cables
- (c) CSA C22.2 No.75-03, Thermoplastic-Insulated Wires and Cables
- (d) CSA-C22.2 No.51-95, Armoured Cables
- (e) ASTM B800 - Standard Specification for 8000 Series Aluminium Alloy Wire for Electrical Purposes – Annealed and Intermediate Tempers
- (f) CSA 2.2.1 – Canadian Electrical Code - Part 1
- (g) CAN/CSA C22.2 No.18 – Outlet Boxes, Conduit Boxes, and Fittings
- (h) CSA C22.2 No.45 – Rigid Metal Conduit
- (i) CSA C22.2 No.56 – Flexible Metal Conduit and Liquid-Tight Flexible Metal Conduit
- (j) CSA C22.2 No.83 – Electrical Metallic Tubing
- (k) CSA C22.2 No.211.2 – Rigid PVC (Unplasticized) Conduit
- (l) CAN/CSA C22.2 No.227.3 – Flexible Non-Metallic Tubing
- (m) CSA C22.2 No.227.1 – Electrical Non-Metallic Tubing
- (n) ANSI/NFPA 70 – National Electrical Code
- (o) CSA-C22.1 – Canadian Electrical Code
- (p) ASTM B 633 – Specification for Electrodeposited Coatings of Zinc on Iron and Steel
- (q) ASTM A 653 – Specification for Steel Sheet, Zinc-Coated (Galvanized) by the Hot Dip Process
- (r) ASTM A 123 – Specification for Zinc (Hot Galvanized) Coatings on Iron and Steel
- (s) ASTM A 510 – Specification for General Requirements for Wire Rods and Coarse Round Wire, Carbon Steel

- (t) ASTM A 641 – Standard Specification for Zinc-Coated (Galvanized) Carbon Steel Wire
- (u) ASTM A 580 – Standard Specification for Stainless Steel Wire
- (v) ASTM D 769 – Standard Specification for Black Oxide Coatings
- (w) CSA C22.2 No. 42, General-Use Receptacles, Attachment Plugs and Similar Wiring Devices.
- (x) UL498 Attachment Plugs and Receptacles.
- (y) UL943 Ground-Fault Circuit-Interruptioners.
- (z) NEMA WD 7-2011(R2016) Occupancy Motion Sensors Standard.

**1.3 SHOP DRAWINGS**

- (a) Unless otherwise noted, shop drawings need not be submitted for standard manufactured items and materials provided they are as specified.

**1.4 SUBMITTALS**

- (a) Submit the following to the Consultant for review:
  - (i) A sample of each proposed type of access door, as well as a Sepia print and three blue line prints of reflected ceiling plan drawings showing proposed ceiling access door locations.
  - (ii) Location drawings for all required sleeves and formed openings in poured concrete construction.
  - (iii) Location drawings for all required openings. These locations must be reviewed and accepted by the Consultant prior to the Contractor drilling or core drilling.
  - (iv) A sample of lamacoid nameplates and list of proposed nameplate legends.
  - (v) Samples of wiring devices and cover plates.
  - (vi) Submittals to also meet the requirements of Section 01 33 00 – Submittal Procedures.

**1.5 QUALITY ASSURANCE**

- (a) All components shall be CSA or ULC approved listed and labelled.

**PART 2 - Products**

**2.1 CONDUITS AND RACEWAYS**

- (a) Conduits and Fittings:

- (i) Rigid Galvanized Steel Conduit (RGS):
  - (a) CAN/CSA C22.2 Number 45-M.
  - (b) Rigid thickwall galvanized steel threaded conduit.
- (ii) EMT:
  - (a) CSA C22.2 Number 83-M.
  - (b) EMT galvanized cold rolled steel tubing.
- (iii) Liquid Tight Flexible Steel Conduit Fittings:
  - (a) CSA 22.2 Number 56.
  - (b) Liquid-tight flexible steel conduit with PVC cover.
  - (c) Watertight connectors with nylon insulated throat.
- (iv) Rigid PVC Conduit (RPVC):
  - (a) CSA C22.2 Number 211.2-M.
  - (b) Rigid PVC conduit.
- (v) Non-Metallic Flexible Conduit:
  - (a) Non-metallic extra flexible PVC conduit.
- (vi) Rigid Steel Conduit Fittings:
  - (a) CAN/CSA C22.2 Number 18.
  - (b) Galvanized or polymer coated cast steel fittings.
  - (c) Expansion fittings, watertight with integral bonding jumper suitable for linear expansion and 19mm deflection in all directions.
  - (d) Sealing condulets for hazardous areas.
  - (e) Corrosive resistant coated cast steel fittings for corrosive resistant conduit.
- (vii) Rigid PVC Conduit Fittings:
  - (a) CSA C22.2 Number 85-M.
  - (b) Rigid PVC fittings of same manufacture as rigid PVC conduit.
- (viii) Liquid Tight Flexible Steel Conduit Fittings:

- (a) Watertight connectors with nylon insulated throat.
- (ix) EMT Fittings:
  - (a) Compression type, steel.
  - (b) Gland compression connectors with insulated throats.
  - (c) Compression couplings.
- (x) Set Screw Type:
  - (a) Steel, concrete-tight:
  - (b) Connectors with insulated throats
  - (c) Couplings
- (xi) Minimum size conduit will be 21mm diameter.
- (xii) All conduit shall contain a ground conductor.
- (xiii) All conduit must have adequate support systems complete with approved fittings, outlet boxes, junction boxes, sealing fittings and drains as indicated or as required. Provide hot dipped galvanized steel beam clamps, hot dipped galvanized steel channel type supports where required. Provide 6mm threaded galvanized steel rods to support suspended channels and provide all necessary galvanized steel spring loaded bolts, nuts, washers and lock washers. Support systems shall be Thomas and Betts Superstrut or approved equal.
- (xiv) Provide all conduit, fittings and ducts necessary to complete the distribution of all power, lighting and control conductors to electrical equipment specified under the corresponding Section. Include that necessary for connecting to mechanical heating and ventilating equipment, also equipment specified under other Divisions.
- (xv) Fasten conduit with malleable PVC coated galvanized steel two-hole straps at intervals to suit code requirements and job conditions.

## **2.2 FASTENINGS, SUPPORTS AND SLEEVES**

- (a) Galvanized steel, size and load rating to suit application.
- (b) One hole steel straps to secure surface mounted conduits or surface mounted cables 50mm diameter and smaller. Two hole steel straps for conduits and cables larger than 50mm.
- (c) Beam clamps to secure conduits to exposed steel work.
- (d) Channel type supports for two or more conduits.



- (e) 6mm minimum diameter threaded rods to support suspended channels.
- (f) 6mm minimum diameter U-bolts.
- (g) Sleeves: Schedule-40 steel pipe minimum I.D. 13mm larger than O.D. of conduit or cable passing through.

### **2.3 JUNCTION BOXES**

- (a) Code gauge (galvanized) sheet steel EEMAC Type-3R, size as required by code for number and size of conduits, conductors and devices, complete with covers, corrosion resistant screws, terminals and mounting channels.
- (b) Explosion proof type in hazardous areas.
- (c) Screw-on sheet steel covers to match enclosure for surface mounting boxes.
- (d) Covers with 25mm minimum extension around for flush-mounted junction boxes.

### **2.4 CONDUIT BOXES – GENERAL**

- (a) Size boxes in accordance with latest edition of Electrical Safety Authority (ESA) Electrical Safety Code.
- (b) Code gauge, galvanized pressed steel for EMT.
- (c) Galvanized cast or pressed steel, for rigid thickwall threaded conduit.
- (d) Corrosive resistant coated: Cast boxes for corrosive resistant coated rigid steel conduit with same finish as conduit.
- (e) 200mm square or larger outlet boxes as required for special devices.
- (f) Gang boxes where wiring devices are grouped except in classified hazardous areas.
- (g) Blank cover plates for boxes without wiring devices.
- (h) 50mm x 100mm outlet boxes for devices, ganged for grouped devices, barriers where required by code.
- (i) Rigid PVC boxes for rigid PVC conduit.

### **2.5 SPLITTER BOXES**

- (a) Code gauge (galvanized) sheet steel enclosure EEMAC Type-3R welded corners and formed hinged cover suitable for locking in closed position.
- (b) Copper main and branch lugs to match required size and number of incoming and outgoing conductors.

- (c) At least three spare terminals on each set of lugs in splitters less than 400A.

**2.6 PULL BOXES**

- (a) Code gauge galvanized sheet steel welded construction, EEMAC Type-3R.
- (b) Screw-on galvanized sheet steel covers for surface mounting boxes.
- (c) Covers with 25mm minimum extension around, for flush mounted pull boxes.

**2.7 OUTLET BOXES – SHEET STEEL**

- (a) Pressed steel single and multi-gang flush device boxes for flush installation, minimum size 100mm x 50mm x 38mm. 100mm square outlet boxes where more than one conduit enters one side, with extension rings as required.
- (b) 100mm square or octagonal outlet boxes for lighting fixture outlets.
- (c) 119mm square outlet boxes with extension and plaster rings as necessary for flush mounting devices in gypsum board, plaster or panelled walls.

**2.8 MASONRY BOXES**

- (a) Pressed steel masonry single and multi-gang boxes for devices flush mounted in exposed masonry walls.

**2.9 CONCRETE BOXES**

- (a) Pressed steel concrete type boxes for flush mount in concrete with matching extension and plaster rings as required.

**2.10 RIGID CONDUIT BOXES**

- (a) Zinc electroplate and polymer enamelled cast, single cast-iron, ferroloy shallow (FS) boxes with factory-threaded hubs and mounting feet for surface mounted switches and receptacles, with gasketed coverplate for exterior work and wet areas.

**2.11 OUTLET BOXES – FITTINGS**

- (a) Bushings and connectors with nylon insulated throats.
- (b) Knock-out fillers to prevent entry of foreign materials.
- (c) Conduit outlet bodies for conduit to maximum 32mm and pull boxes for larger conduits.
- (d) Double locknuts and insulated bushings for sheet steel metal boxes.

**2.12 BRANCH CIRCUIT CONDUCTORS**

- (a) Conductors:
  - (i) ASTM Class-B, soft drawn, electrolytic copper.
  - (ii) Stranded.
- (b) Insulation:
  - (i) CSA Type RW90 XLPE (-40°C):
    - (a) Heat and moisture resistant.
    - (b) Low temperature, chemically cross-linked thermosetting polyethylene material.
    - (c) 600V rated.
    - (d) For maximum 90°C conductor temperature.
    - (e) For installation at minimum -40°C temperature.
    - (f) CSA C22.2 Number 38.
  - (ii) CSA Type RWU90 XLPE (-40°C):
    - (a) Heat and moisture resistant.
    - (b) Low temperature, chemically cross-linked thermosetting polyethylene material.
    - (c) 1000V rated.
    - (d) For maximum 90°C conductor temperature.
    - (e) For installation at minimum -40°C.
    - (f) CSA C22.2 Number 38.
  - (iii) CSA Type T90 NYLON (-10°C):
    - (a) Heat resistant.
    - (b) Flame retardant.
    - (c) Thermoplastic PVC material with extruded nylon cover.
    - (d) 600V rated.
    - (e) For maximum 90°C conductor temperature dry and 75°C in wet locations.
    - (f) For installation at minimum -10°C.

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- (g) SA C22.2 Number 75-M.
- (c) CSA Type AC90 XLPE (-40°C):
  - (i) Conductors:
    - (a) ASTM Class-B, soft drawn, electrolytic copper.
    - (b) Solid for sizes number 5.26mm<sup>2</sup> (10AWG) and smaller.
    - (c) Stranded for sizes number 8.37mm<sup>2</sup> (8AWG) and larger.
  - (ii) Insulation:
    - (a) Heat and moisture resistant.
    - (b) Low temperature, chemically cross-linked thermosetting polyethylene material.
    - (c) 600V rated for sizes number 5.26mm<sup>2</sup> (10AWG) and smaller.
    - (d) 1000V rated for sizes number 8.37mm<sup>2</sup> (8AWG) and larger.
    - (e) For maximum 90°C conductor temperature.
    - (f) For installation at minimum -40°C temperature.
    - (g) CSA C22.2 Number 38.
  - (iii) Construction:
    - (a) Two, three or four insulated conductors.
    - (b) Bare ground conductor.
    - (c) Overall interlocking aluminum armour.
    - (d) CSA C22.2 Number 51.
- (d) Branch circuit conductors to maximum and including number 3.31mm<sup>2</sup> (12AWG) shall be solid. Branch circuit conductors in sizes larger than number 3.31mm<sup>2</sup> (12AWG) shall be stranded. All branch circuit conductors shall be constructed of 90 per cent conductive copper, unless otherwise noted, and shall be approved for 600V.
- (e) Electric service, distribution and special conductors are specified in this Section or on the Contract Drawings.
- (f) Aluminum conductors shall not be used for any services on this Project. All cables/wiring shall be of copper only throughout this Project. No exceptions will be permitted.

**2.13 WIRE AND CABLE CONNECTORS**

- (a) Copper compression type wire and cable terminations for number 3.31mm<sup>2</sup> (12AWG) and larger conductors, colour keyed, sized to suit. Long barrel NEMA two hole lugs for sizes number 53.48mm<sup>2</sup> (1/0 AWG) and larger.
- (b) Twist type splicing connectors shall not be used on this Project.
- (c) Conductor compression splice for number 5.26mm<sup>2</sup> (10AWG) or smaller.

**2.14 HEAT SHRINKABLE TUBING INSULATION, HEAVY WALL**

- (a) Acceptable Manufacturers: Thomas and Betts, Shrink-Kon series, Ideal Thermo-Shrink, TS-46, Raychem tubing WCSM, 3M cable sleeve ITCSN.

**2.15 ESCUTCHEON PLATES**

- (a) One-piece chrome plated steel sized to completely cover sleeves and complete with set screws to secure the plates to the conduit. Split plates will not be acceptable.

**2.16 INSERTS, BEAM CLAMPS FASTENERS, EQUIPMENT HANGERS AND SUPPORTS**

- (a) Inserts for concrete formwork shall be Crane Canada type, number 4-M Unistrut, or approved equal cast iron inserts, multiple type where required.
- (b) Beam clamps for hanging and support to structural steel shall be Crane Canada or equal.

**PART 3 - Execution**

**3.1 GENERAL CONDUIT AND CONDUCTOR INSTALLATION REQUIREMENTS**

- (a) Install conduit and conductors concealed in all finished areas (no exceptions), and concealed to the degree made possible by finishes in partially finished and unfinished areas. All conduits must be concealed in walls (no exceptions) in all areas; conduit may be exposed where run on unfinished ceilings (unless concealment is possible). Refer to and examine the Contract Drawings and room finish schedules to determine finished, partially finished and unfinished areas of the building.
- (b) Where conduits are exposed, arrange same to avoid interference with other work and parallel to the building lines, horizontal conduits can only be exposed where run on exposed ceilings and shall be installed as high as possible. Do not install conduit or conductors within 150mm of flue or heating pipes or equipment.
- (c) Install conduits to conserve headroom in exposed locations and cause minimum interference in spaces through which they pass.
- (d) All conduits must be concealed no exceptions. Conduits to have own support system and are to be supported independently of the ceiling grid or ceiling support system.

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- (e) Where vertically run conduit passes through a slab, Contractor to provide a 100mm high concrete pad with the pad extending 100mm on all sides of the conduit.
- (f) Use rigid steel threaded conduit (RGS) in hazardous areas.
- (g) Use rigid galvanized steel threaded conduit (RGS) where conduit is subject to mechanical injury.
- (h) Use rigid PVC conduit underground.
- (i) Use flexible metal conduit for connection to motors in dry areas, connection to recessed fixtures without a prewired outlet box, connection to surface or recessed fixtures and work in movable metal partitions.
- (j) Use liquid tight flexible metal conduit for connection to motors or vibrating equipment in damp, wet or corrosive locations. Use only liquid tight fittings when using liquid tight flexible metal conduit. Liquid tight flexible metal conduit to have a jacket with an FT-6 rating when used in plenums, otherwise provide an FT-4 rating inside the conduit.
- (k) Use explosion proof flexible connection for connection to explosion proof motors.
- (l) Install conduit sealing fittings in hazardous areas. Fill with compound.
- (m) Minimum conduit size for lighting and power circuits: 27mm.
- (n) Bend conduit cold. Replace conduit if kinked or flattened more than 1/10th of its original diameter.
- (o) Mechanically bend steel conduit over 21mm diameter.
- (p) Field threads on rigid conduit must be of sufficient length to draw conduits up tight.
- (q) Install fish cord in empty conduits.
- (r) Run 2-NPS 1 spare conduits up to ceiling space from each flush panel. Terminate these conduits in 152mm x 152mm x 102mm junction boxes or in case of an exposed concrete slab, terminate each conduit in flush concrete or surface type box.
- (s) Remove and replace blocked conduit sections. Do not use liquids to clean out conduits.
- (t) Dry conduits out before installing wire.
- (u) All cutting and patching of masonry/concrete floors, walls, and roof for electrical services shall be by this Division. Obtain approval from the Consultant/Agency before cutting any structural walls or floors. Cutting and drilling shall only be at times allowed by the Consultant/Agency. Check and verify the location of mechanical and electrical services in walls and below the floor slab in all areas requiring core drilling and cutting. Protect all areas where core drilling occurs. Carefully chip top and bottom of slab to expose rebars to minimize cutting of rebars when core drilling. Provide x-ray study before drilling or cutting where required by the Consultant/Agency.

- (v) Provide sleeves for all conduit passing through floor and roof slabs, beams, concrete walls and slab to slab partitions, etc.
- (w) Where cables and conduits pass through partitions and through floors that are not fire rated, provide an air-tight seal around the cables and conduits.
- (x) Where cables and conduits pass through floors and fire rated walls, pack space between conduit (or cable) and sleeve with an approved fire stop as specified in Section 16010 – General Electrical Requirements.

### **3.2 CONDUIT – GENERAL**

- (a) Run parallel or perpendicular to building lines.
- (b) Group raceways wherever possible. Support on channels.
- (c) Install expansion joints as required.
- (d) Run raceways in web portion of structural steel columns and beams.
- (e) Do not drill structural members to pass through.
- (f) Locate raceways not less than 125mm clear where parallel to steam or hot water lines with a minimum of 75mm at crossovers.
- (g) Use metallic raceway where temperatures exceed 75°C or where enclosed in thermal insulation.
- (h) EMT and non-metallic conduits to contain insulated green ground wire.
- (i) Install 6mm diameter nylon pull cord in empty raceways.
- (j) All undimensioned conduits on the Contract Drawings are 21mm (3/4") minimum.

### **3.3 CONDUIT AND FITTINGS**

- (a) Minimum Conduit Sizes:
  - (i) Surface installation and concealed behind walls 21mm trade size conduit.
  - (ii) Embedded in concrete 27mm trade size conduit.
  - (iii) Directly buried 53mm trade size conduit.
- (b) Conduit Application and Type:
  - (i) Hazardous Areas: Rigid galvanized steel (RGS).
  - (ii) Outdoor Areas: Rigid steel conduit.

- (iii) Concealed above suspended ceilings and inside walls, use EMT.
- (iv) Embedded in Concrete:
  - (a) Other than grade slab: Rigid (PVC).
  - (b) In or below grade slab: Rigid (PVC).
- (c) Exposed in unfinished areas to maximum 3 metres above finished floor; use rigid galvanized steel, above 3 metres use EMT.
- (d) Connection to motors and equipment subject to vibration use; liquid tight flexible steel conduit.
- (e) Use field threads on rigid conduit of sufficient length to draw conduits up tight.
- (f) Do not bend coated steel conduit. Use elbows for deflections.
- (g) Use factory "ells" where 90 degree bends are required for 27mm trade size and larger conduits.
- (h) Bend conduit offsets cold. Do not install crushed or deformed conduits and avoid trapped runs in damp or wet locations. Prevent the entrance of water and lodging of concrete, plaster, dirt, or trash in conduit, boxes, fittings and equipment during course of construction.
- (i) Where conduit joints occur in damp or wet locations, make joints watertight by applying an approved compound on the entire thread area before assembling. Draw up all conduit joints as tightly as possible.
- (j) Cap empty conduits which do not terminate in outlets, panels, cabinets and suchlike, with standard galvanized plumber's pipe caps.
- (k) Plug empty conduits which terminate flush with floors or walls with flush coupling and brass plug.
- (l) Install conduit sleeves for all conduits and cables passing through walls, ceilings or floors, and fill void between sleeve and conduit with caulking. If fire-rated caulking is required by code, use same class as walls, ceilings or floors.
- (m) Terminate conduit stubbed up through concrete floor for connection to free standing equipment with a coupling flush with finish floor, and extend rigid conduit to equipment, except where required, use flexible conduit from a point 150mm above floor.
- (n) Install double locknuts and bushings on all rigid conduit terminations into threadless openings. Increase length of conduit threads at terminations sufficiently to permit bushing to be fully seated against end of conduit.
- (o) Mechanically bend steel conduit.
- (p) Install sealing condulets in conduits at hazardous area boundaries.

### 3.4 EMT AND FITTINGS



- (a) Minimum EMT Size: 21mm (3/4") trade size conduit.
- (b) EMT Application:
  - (i) Exposed in unfinished areas, above truss level and for drops in column web to 3 metres above finished floor. Use rigid steel conduit below 3 metres.
  - (ii) In block walls and stud partitions.

### 3.5 **SPLITTER BOXES**

- (a) Install splitters as indicated and mount plumb, true and square to the building lines.
- (b) Extend splitters full length of equipment arrangement.

### 3.6 **JUNCTION BOXES**

- (a) Install junction boxes in inconspicuous but accessible locations. Secure to structure.
- (b) Install terminal blocks on mounting rails, for termination of each wire and cable regardless of size.
- (c) Only one voltage source is permitted in a junction box.
- (d) Install barriers to separate different auxiliary systems.

### 3.7 **PULL BOXES**

- (a) Install pull boxes in inconspicuous but accessible locations. Secure to structure.
- (b) Install pull boxes so as not to exceed 30 metres of conduit run between pull boxes.
- (c) Only one voltage source is permitted in a pull box.
- (d) Install barriers to separate different auxiliary systems.

### 3.8 **OUTLET AND CONDUIT BOXES**

- (a) Install conduit outlet boxes for conduit to maximum 32mm and pull boxes for larger conduits.
- (b) Support boxes independently of connecting conduits.
- (c) Seal boxes during construction to prevent entry of debris, dust and dirt.
- (d) For flush installations mount plaster rings to box, flush with wall surface to permit wall finish to come within 6mm of opening.
- (e) Provide correct size of openings in boxes for conduit, armoured cable connections. Reducing washers will not be acceptable.

- (f) Install switches and other controls close to door lock or latch jambs and other openings, maintaining a minimum of 100mm from trims of doors (except where installed in door frames of metal partitions) check door swings.
- (g) Install 100mm square or octagonal outlet boxes for lighting fixture outlets.

### 3.9 MASONRY BOXES

- (a) In block walls use deep boxes to provide clear space around knockout for AC90 cable entry.

### 3.10 INSTALLATION OF BRANCH CIRCUIT CONDUCTORS

- (a) Install wiring in raceways unless noted otherwise. All wiring to be copper, no exceptions.
- (b) Minimum Wire Sizes:
  - (i) Power and Lighting                      Number 3.3mm<sup>2</sup> (12AWG)
  - (ii) Control                                      Number 2.1mm<sup>2</sup> (14AWG)
  - (iii) Fire Alarm                                  Number 0.82mm<sup>2</sup> (18AWG)
- (c) Wire and Cable Application and Type:
  - (i) Lighting branch circuit where connection to luminaire is RW90 wiring in conduit.
  - (ii) Use 90° rated cable when splicing existing wiring from junction box to luminaire.
  - (iii) Receptacle branch circuits use RW90 wiring in conduit.
  - (iv) Ceiling boxes to luminaires in suspended ceiling use AC90 cable.
  - (v) Branch circuits other than those covered above use RW90.
  - (vi) Equipment feeders and circuits use RW90.
  - (vii) Underground and under slab raceways, duct banks, direct burial use RWU90.
  - (viii) Type AC90 Cable Length Limitations:
    - (a) Ceiling box to luminaire: 1m maximum in non-accessible ceilings; 1m in accessible ceilings.
    - (b) Junction box to outlet: 3 metres maximum.
- (d) Use lubricant when pulling wires into conduit. Ensure that wires are kept straight and are not twisted or abraded.
- (e) Neatly secure exposed wire in apparatus enclosures with approved supports or ties.

- (f) Provide a minimum of one grounding wire for each three ungrounded conductors on all cable runs. Size grounding to Table 16 of the Ontario Electrical Code. Provide separate ground conductors for ground fault circuit interrupter circuits. All ground conductors to be copper and insulated with a green coloured insulation.
- (g) All equipment to be grounded through ground wires.
- (h) Provide separate neutral conductor for each 120V circuit for all circuits feeding receptacles and power outlets.
- (i) All cable terminations to be compression type fittings for wire sizes greater than 8.36mm<sup>2</sup> (8AWG). All compression type fittings to be two-hole long barrel type. Where mechanical screw type lugs are allowed by the Consultant, they will be suitable for quantity of parallel runs of wire that are to be terminated under.
- (j) Armoured Cable Type AC90 (BX) may only be used for individual drops from slab mounted junction box to surface or recessed mounted light fixtures or where noted on the Contract Drawings where wiring is required to be installed within an existing wall. The maximum allowable distance of armoured cable is 10 metres. Contractor to receive written approval from the Consultant to run armoured cable further than 10 metres. Wiring in conduit is to be brought to a junction box to allow for the transition to armoured cable. Armoured cable is not to be installed directly into electrical panels.
- (k) Branch circuit wiring to be upsized as follows to address voltage drop when:
  - (i) The entire length of the circuit wiring exceeds 25m – branch wiring to be a minimum of 5.26mm<sup>2</sup> (10AWG).
  - (ii) The entire length of the circuit wiring exceeds 40m – branch wiring to be a minimum of 8.36mm<sup>2</sup> (8AWG).
  - (iii) The entire length of the circuit wiring exceeds 60m – branch wiring to be a minimum of 13.29mm<sup>2</sup> (6AWG).
- (l) Wire Splicing:
  - (i) Splice up to and including 13.29mm<sup>2</sup> (6AWG) with nylon insulated expandable spring type connectors.
  - (ii) Splice larger conductors using compression type connectors wrapped in PVC insulation rated at the respective voltage.
- (m) Maximum voltage drop for 12VDC wiring to remote lighting heads shall be five per cent max at the farthest remote head. Size conductors accordingly.

### 3.11 CONNECTORS

- (a) Install compression terminations and splices in accordance with manufacturer's written instructions.

- (b) Make splices in junction boxes.
- (c) Make connections in lighting circuits with twist type splicing connectors.
- (d) Terminate and splice conductors Number-8 and larger at terminal blocks in junction boxes.
- (e) Seal terminations and splices exposed to moisture, corrosive conditions or mechanical abrasions with heavy wall heat shrinkable insulation.
- (f) Install fixture type connectors and tighten. Replace insulating cap.

**3.12 INSTALLATION OF CONTROL CABLES**

- (a) Install all control cables recessed in conduit.
- (b) Ground control cable shield.

**3.13 INSTALLATION OF ESCUTCHEON PLATES**

- (a) Provide escutcheon plates over all exposed conduit passing through walls, floors, ceilings, partitions, furrings and suchlike in finished areas.

**3.14 INSTALLATION OF INSERTS, BEAM CLAMPS, FASTENERS, HANGERS AND SUPPORTS**

- (a) Install all inserts, beam clamps, fasteners, and similar hardware required for conduit, duct, raceway, conductor and suchlike and equipment hanger or support materials to best suit structural details.
- (b) Accurately and properly set concrete inserts in the concrete framework.
- (c) For runs of three or more conduits, raceways, or conductors in concrete formwork, use multiple type inserts used for the smallest conduit in the group.
- (d) Where inserts are required in concrete work where concrete inserts have not been installed, drill a neat hole of the proper diameter and depth in the concrete and insert an anchor to accept the hanger rod, bolt and suchlike or where concrete mass permits, use self-drilling concrete anchors.
- (e) Fasten hangers and support provisions to brick or masonry with expansion shields and machine bolts, or for light loads, use plugs and screws.
- (f) In cavity walls and ceilings use two wing toggles and for heavy loads, provide steel anchor plates with two or more toggles to spread the load.
- (g) Provide beam clamps for attaching, hanging or support provisions to the Consultant, weld the hanging and support provisions to the structural steel.
- (h) Explosive power actuated fasteners will not be permitted unless specific approval for their use has been obtained from the Consultant.

- (i) Securely mount plywood backboards to structure or use independent mounting channels, secured to floor.

**3.15 PAINTING AND FINISHES**

- (a) Provide all painting and patching as required.
- (b) All exposed electrical fittings, supports, hangers, frames conduit, racks, boxes, raceways and similar material and apparatus shall be galvanized or finished with corrosion resistant primer ready to accept paint. Take special care when priming work exposed to the elements or in wet areas to prevent rust or corrosion from damaging adjacent surfaces.
- (c) Touch up and repaint any factory finished equipment that has been scratched or otherwise damaged during installations.
- (d) Provide for all patching and painting for all removals and as required. Painting shall be completed to the approval of the Consultant and the Agency. Paint shall match adjacent surfaces. Include all costs.
- (e) Where cutting, patching, fire stopping and construction involves painted surfaces these must be painted to match the surrounding surfaces or as directed by Consultant.

**3.16 STANDARD IDENTIFICATION**

- (a) Identify electrical work as specified below:
- (b) For each piece of electrical equipment from the panelboard to maximum and including battery packs and for any other piece of equipment where specified in this Section, provide engraved lamaroid identification nameplates. Nameplates shall be lamaroid black with white letters and with bevelled edges, secured to apparatus with stainless steel screws. Warning signs, if and when required, shall be red with white lettering.
- (c) Exact nameplate wording and sizes must be approved by and confirmed by the Consultant prior to manufacture.
- (d) Clearly identify main pull or junction boxes (excluding obvious outlet boxes) by painting the outside of the covers. Paint colours shall be in accordance with the following schedule:
  - (i) Fire Alarm: Red
  - (ii) Colour code conductors, throughout to identify phases, neutrals and grounds by means of self-laminating coloured tape, coloured conductor insulation, or properly secured coloured plastic discs. Colours shall be as follows:
    - (a) Phase A: Red
    - (b) Phase B: Black
    - (c) Phase C: Blue

- |     |          |       |
|-----|----------|-------|
| (d) | Ground:  | Green |
| (e) | Neutral: | White |

**3.17 FIELD FABRICATED METAL WORK**

- (a) Clean and prime paint field fabricated metal work.
- (b) After fabrication deburr, scrape, grind smooth, wire brush with power brush and degrease metal work.
- (c) Prime paint steel with one (1) coat of CISC/CPMA 2.75 oil alkyd primer.
- (d) Prime paint aluminum as follows: Wash with detergent solution and wipe down with SSPC-SP1 solvent. Apply Glidden number Y-5229 primer to 1.5 mils DFT.
- (e) For brass and bronze alloy materials, prepare as for aluminum but apply one (1) coat of CAN/CGSB-1.40-M zinc chromate primer.

**3.18 TESTS**

- (a) Branch circuit balancing: Connect all branch power circuits to panel boards so as to balance the actual loads (wattage) within five (5) per cent. Connect loads to circuits as indicated on the Contract Drawings.
- (b) Carry out insulation resistance (Megger) tests, ground continuity and resistance tests, satisfactory to the Consultant.

**END OF SECTION**

## ELECTRICAL DISTRIBUTION

CITY OF BRAMPTON  
JIM ARCHDEKIN RECREATION CENTRE  
MECHANICAL AND ELECTRICAL UPGRADES

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NOVEMBER 2024

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### **PART 1 - General**

#### **1.1 GENERAL REQUIREMENTS**

- (a) Comply with the City of Brampton General Conditions, Supplementary Conditions, Invitation to Tender and Division 26.

#### **1.2 REFERENCES**

- (a) Section 26 05 00 General Instruction for Electrical also applies to and is a part of this Section of the Specification.
- (b) Conform to latest issues, amendments and supplements of following standards:
  - (i) CSA C22.2 Number 5.1 – Moulded Case Circuit Breakers
  - (ii) CSA C22.2 Number 39 – Fuseholder Assemblies
  - (iii) CSA C22.2 Number 106-M – HRC Fuses
  - (iv) UL 60950 – Standard for Information Technology Equipment
  - (v) NFPA 75 – Standard for the Protection of Information Technology Equipment
  - (vi) NFPA 70E – Electrical Safety in the Workplace
  - (vii) ANSI Z535.4 – Product Safety Signs and Labels
  - (viii) IEEE 1584 – Guide for Performing Arc Flash Hazard Calculation
  - (ix) IEEE 141 – Recommended Practice for Electric Power Distribution in Industrial Plants
  - (x) CSA Z462 – Workplace Electrical Safety
  - (xi) CSA C22.2 No. 31-M - Switchgear Assemblies
  - (xii) CAN/CSA-C22.2 No.29, Panelboards and Enclosed Panelboards.
  - (xiii) CAN/CSA C22.2 NO.0.4 - Bonding and Grounding of Electrical Equipment
  - (xiv) CAN/CSA C22.3 NO.2 - General Grounding Requirements and Grounding Requirements for Electrical Supply Stations

#### **1.3 SCOPE OF WORK**

- (a) Supply all labour, tools, services and equipment and provide all materials and equipment required to complete service and distribution work in accordance with this section of the specification and the drawings.

**1.4 QUALITY ASSURANCE**

- (a) All low voltage distribution work shall be executed by skilled tradesperson fully experienced in the installation of electrical power systems.
- (b) All equipment shall be constructed to EEMAC standard and shall carry the CSA label or the contractor shall obtain Electrical Safety Authority approval.
- (c) All equipment shall be suitably noted for the system available fault and HRC fuses shall comply with CSA C22.2 No. 106.

**1.5 SUBMITTALS**

- (a) Refer to Division 1 General Requirements and submit shop drawings for the following:
  - (i) Panelboards
  - (ii) Breakers
  - (iii) Transformers
  - (iv) Disconnect switches
  - (v) Motor starters

**PART 2 - Products**

**2.1 REFERENCES**

- (a) Refer to Section 26 05 10 Electrical Basic Materials. This Section also applies to and is part of this section of the specifications.

**2.2 PANELBOARDS**

- (a) Panelboards: Product of one Supplier.
- (b) Install circuit breakers in panelboards before shipment.
- (c) 250V panelboards: bus and breakers rated for 22KA (symmetrical) interrupting capacity or as indicated.
- (d) 600V panelboards: bus and breakers rated for 35KA (symmetrical) interrupting capacity or as indicated.
- (e) Sequence phase bussing with odd numbered breakers on left and even on right, with each breaker identified by permanent number identification as to circuit number and phase.
- (f) Panelboards: mains, number of circuits, and number and size of branch circuit breakers as indicated.



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- (g) Two keys for each panelboard and key panelboards alike.
- (h) Solid copper bus for panelboard with neutral of same ampere rating as mains.
- (i) Mains: copper bus, suitable for bolt-on breakers.
- (j) Trim with concealed front bolts and hinges.
- (k) Trim and door finish: baked grey enamel.
- (l) All circuit carrying parts shall be insulated from ground and phase-to-phase by high dielectric strength barrier or equivalent.
- (m) The panelboard shall have a meter that will connect to the remote supervisory system.
- (n) All unused space provided, unless otherwise specified, shall be fully equipped for future devices, including all appropriate connectors and mounting hardware.
- (o) Interior trim shall be dead-front construction to shield user from energized parts. Empty spaces shall be provided with blanking plates.
- (p) Connections with solderless lugs on main and neutral busbars and at circuit breaker load terminals.
- (q) Constructed from galvanized steel sheet, of thickness equal to code gauge for similar steel cabinets, fabricated by "forming up" and having spot welded seams. Panelboard cabinet assembly to comply with CSA enclosure type 3R.
- (r) Panelboards shall not be of the door-in-door type (interior swing door).
- (s) Provide panels that will allow the monitoring and control of each circuit. The CT/PT, transducers, relaying, shall be able to send information by means of a network connection and address system to both a local and remote communication to power monitoring system.
- (t) Manufacturers:
  - (i) Schneider Electric
  - (ii) Eaton Cutler-Hammer
  - (iii) Siemens
  - (iv) Or approved equal

### 2.3 BREAKERS GENERAL

- (a) Bolt-on moulded case circuit breaker, quick-make, quick-break type, for manual and automatic operation with temperature compensation for 40°C ambient.

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- (b) Common trip breakers with single handle for multipole applications.
- (c) Magnetic instantaneous trip elements in circuit breakers, to operate only when the value of current reaches setting. Trip settings on breakers with adjustable trips to range from 3 -10 times current rating.
- (d) Circuit breakers with interchangeable trips as indicated.
- (e) Short circuit rating of 120V breakers to be 22kA rms. sym.
- (f) Manufacturers:
  - (i) Schneider Electric
  - (ii) Eaton Cutler-Hammer
  - (iii) Siemens
  - (iv) Or approved equal

### 2.4 MOULDED CASE CIRCUIT BREAKERS

- (a) Bolt-on moulded case circuit breaker: quick-make, quick-break type, for manual and automatic operation with temperature compensation for 40°C ambient.
- (b) Common-trip breakers with single handle for multi-pole applications.
- (c) Magnetic instantaneous trip elements in circuit breakers to operate only when value of current reaches setting. Trip settings on breakers with adjustable trips to range from 3 to 8 times current rating.
- (d) Circuit breakers with interchangeable trips as indicated in the Contract Documents.
- (e) Thermal Magnetic Breakers: Moulded case circuit breaker to operate automatically by means of thermal and magnetic tripping devices to provide inverse time current tripping and instantaneous tripping for short circuit protection.
- (f) Magnetic Breakers: Moulded case circuit breakers to operate automatically by means of magnetic tripping devices to provide instantaneous tripping for short circuit protection.
- (g) Manufacturers:
  - (i) Schneider Electric
  - (ii) Eaton Cutler-Hammer
  - (iii) Siemens
  - (iv) Or approved equal

**2.5     TRANSFORMERS**

- (a) Dry type transformers shall be manufactured and tested in accordance with CSA, ANSI C57.12.91 standard, CSA C22.2 -47-M90, CSA C9-02 standards, CSA-C22.2-0-M91, NEMA TP-1 and TP-2.
- (b) Transformers shall be: air cooled EEMAC-3R sprinkler proof enclosure, with ventilation openings, mounting brackets and lifting devices;
- (c) Dry type transformers single-phase or three phase shall meet minimum efficiency values as per CSA 802.2 -2006 Energy efficiency standard, and bear an approved label with the verification agency logo or mark near the nameplate.
- (d) Design criteria
  - (i) Type : Natural Convection Cooling (ANN) natural ventilation;
  - (ii) Nominal Kilo Volt-Amps (KVA) continuous rating as per drawings;
  - (iii) Voltage class: 1.2KV, impulse level 10KV Basic Impulse Level (BIL), dielectric tested 4KV;
  - (iv) Voltage taps:5% full capacity taps, 1 below and 1 above nominal voltage;
  - (v) All materials used in the insulation system: 22°C class (H), and max 150°C temperature rise at continuous full load, maximum 40°C ambient temperature;
  - (vi) All windings conductors shall be copper, K13 rated.
  - (vii) Phase shift secondary to primary -30 deg electrical, standard for three phase transformers unless different demand;
  - (viii) Separate primary and secondary copper windings only with soldered terminals, aluminum windings not accepted;
  - (ix) Electrostatic shield between primary and secondary for transient attenuation for transformers that supply drives;
  - (x) All cores manufactured with wound high-grade steel to minimize no load losses;
  - (xi) Entire core-and coil assembly shall be double dipped with non-water base varnish only, for increased humidity resistance;
  - (xii) Connectors: primary and secondary solder less connector for copper or aluminum conductors;
  - (xiii) Enclosure shall be provided with separated grounding connector as per standard;
  - (xiv) Neutral terminal X0 provided with double connector;
  - (xv) Efficiency level: minimal values as per CSA 802.2-2006 standard;

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- (xvi) Max impedance levels at 170 C: above 30 kva impedance should not exceed 5.5%;
- (xvii) All transformers shall incorporate vibration pads between magnetic circuit and enclosure for noise reduction;
- (xviii) Average sound level:
  - (a) 45dB max up to 45 kva
  - (b) 50dB max up to 150 kva
  - (c) 55dB max up to 300 kva
  - (d) 60dB max up to 500 kva
- (e) Mounting: wall mount or floor mount suitable up to 75 kva and floor mount above 75 kva unless otherwise indicated on Drawings; Provide structural steel wall mount shelf for mounting transformers on wall. Provide structural details for review during shop drawing review.
- (f) Painting: transformer enclosures shall be treated with phosphate conversion coating; Final coating shall be epoxy powder type ASA 61 (electric grey) to prevent rust and corrosion;
- (g) Marking: transformer nameplate should indicate clear winding diagram, KVA, frequency, model number, nominal voltage, insulation class, temperature rise and impedance %;
- (h) Acceptable Manufacturers:
  - (i) Marcus Transformers
  - (ii) Delta Transformers
  - (iii) Hammond
  - (iv) Rex
- (i) Vibration Dampening System
  - (i) Transformer shall incorporate vibration isolators between the element and enclosure to minimize and isolate sound transmission.

### 2.6 **FUSIBLE AND NON-FUSIBLE SAFETY SWITCHES (DISCONNECTS)**

- (a) Safety switches shall be heavy duty series safety switches.
- (b) Each safety switch shall be front operated with red handle suitable for padlocking in the "OFF" position and arranged so that the enclosure cover cannot be opened with the handle in the "ON" position. Operating mechanisms shall be quick-make, quick-break, positive acting with visible blades, and a line terminal shield. Fusible units shall be complete with fuse clips suitable for

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H.R.C., Class "J" fuses unless otherwise noted. Each unit shall also be equipped with solderless lugs and a front cover nameplate identifying the catalogue number and electrical characteristics.

- (c) Enclosures for safety switches shall be, unless otherwise noted, EEMAC 3R enclosures or EEMAC 4X for outdoor weatherproof installations.
- (d) The ampere rating, number of poles, and fuse requirements for safety switches shall be as specified on the drawings.
- (e) The disconnect switches shall be selected so that they will fit into the space available in the electrical room and meet the requirements of the Ontario Electrical Safety Code.
- (f) Electrical Interlock: Mechanically operated from switch mechanism, rated 120 VAC, 15A, 1 NO and 1 NC contact.
- (g) Manufacturers:
  - (i) Schneider Electric
  - (ii) Eaton Cutler-Hammer
  - (iii) Siemens
  - (iv) Or approved equal

### 2.7 **MOTOR STARTERS**

- (a) Motor starter units: Combination magnetic type.
- (b) EEMAC (IEC) type combination magnetic motor starters, HMCP magnetic trip circuit breaker type with overload relay and heater element in each phase.
- (c) Overload relays: Solid State, manually resettable type. Reset pushbutton on starter door.
- (d) Starter contactor: Minimum two spare normally open and two spare normally closed, separate, 120 V auxiliary contacts, wired to terminal blocks. Supply additional contacts where indicated.
- (e) Auxiliary Contacts: Minimum 1 spare NC, 1 spare N.O.
- (f) For control voltage from an external source:
  - (i) Provide terminals, covered with hard insulating guard.
- (g) External circuit breaker operating handle: Interlocked with unit door, to be in OFF position before door can be opened. Allow padlocking of handle in ON or OFF position with three padlocks minimum.
- (h) Enclosure: Steel, EEMAC 3R.

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- (i) Door mounted accessories:
  - (i) Pushbuttons or 3-position H/O/A (hand-off-auto) selector switches, heavy duty (oil tight) type.
  - (ii) Pilot lights: heavy duty, transformer, press to test, red.
- (j) Apply a lamacoid warning plate on the outside of the starter cover describing the source of outside control power.
- (k) Spare starters: Sizes and quantities indicated, requirements as specified for similar designated starters.
- (l) Starter size: EEMAC sizes as indicated. Minimum starter size EEMAC size 1. Intermediate size (non-EEMAC) starters will not be accepted.
- (m) Acceptable manufacturers are:
  - (i) Schneider Electric
  - (ii) Eaton Cutler-Hammer
  - (iii) Siemens
  - (iv) Or approved equal

### 2.8 GROUNDING EQUIPMENT

- (a) Meet standard of CSA C22.2 No.41-M1987.
- (b) Conductors
  - (i) Bare or insulated, stranded, soft drawn annealed copper wire, for:
    - (a) One Coat – Regal First Coat Interior Latex Primer and Underbody #216 (MPI Listed Product, Category-50).
    - (b) Ground connections;
- (c) Clamps for grounding of conductor: size as required to electrically conductive underground water pipe.
- (d) Grounding conductors: bare stranded copper, soft annealed, size as indicated.
- (e) Insulated grounding conductors: green, type RWU.
- (f) Ground bus: copper, size as indicated, complete with insulated supports, fastenings, connectors.

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- (g) Non-corroding accessories necessary for grounding system, type, size, material as indicated, including but not necessarily limited to:
  - (i) Grounding and bonding bushings.
  - (ii) Protective type clamps.
  - (iii) Bolted type conductor connectors.
  - (iv) Thermit welded type conductor connectors.
  - (v) Bonding jumpers, straps.
  - (vi) Pressure wire connectors.

### **PART 3 - Execution**

#### **3.1 GENERAL**

- (a) Protect equipment from dust, debris, moisture, and physical damage, with sealed envelope of plastic or other impervious material until building is enclosed and cleaned and equipment is energized.
- (b) Protect from condensation by maintaining at suitable temperature above 0°C.
- (c) Finish equipment enclosures to ANSI 49 or ANSI 61, baked grey enamel.

#### **3.2 PANELBOARD INSTALLATION**

- (a) Locate panelboards as indicated and mount securely, plumb, true and square, to adjoining surfaces as detailed.
- (b) Mount panelboards on galvanized steel unistrut channels at height as indicated or as per code requirements.
- (c) Connect loads to circuits.
- (d) Connect neutral conductors to common neutral bus with respective neutral identified.
- (e) Connect all ground wires to ground bus and ground panel as per code.
- (f) Plug all unused holes with metallic pennies.
- (g) Remove all debris, insulation, wire clippings, etc. and the end of all connections.
- (h) Spare wires, double up and ensure there is sufficient length to reach any spare breaker. Do not impede future entry into panel. Clearly mark wires as spare and destination. Cover of panel must make contact with tub all round.

- (i) Install spare breakers, must be four (4) spare breakers in each panel.

### **3.3 INSTALLATION OF TRANSFORMERS**

- (a) Mounting
  - (i) Mount dry type transformers up to 75 kVA on wall or floor as indicated.
  - (ii) Mount dry type transformers above 75 kVA from roof structure as indicated on drawings, coordinate with structural drawings. If mounted on wall the wall shall be structurally supported to handle the weight of the transformer.
  - (iii) Ensure adequate clearance, minimum 150mm, around transformer for ventilation.
  - (iv) Install transformers in level upright position.
  - (v) Remove shipping supports only after transformer is installed and just before putting into service.
  - (vi) Mount floor mounted distribution transformers on isolation pads to minimize noise and vibration transmission, and provide flexible connections on line and load sides to prevent vibration transmission to other equipment.
  - (vii) Loosen isolation pad bolts until no compression is visible.
- (b) Connections
  - (i) Make primary and secondary connections as shown on wiring diagram.
  - (ii) Energize transformers immediately after installation is completed, where practicable.

### **3.4 INSTALLATION OF BREAKERS**

- (a) Install breakers per the manufacturer's recommendations and the Contract Drawings.

### **3.5 DISCONNECT SWITCHES**

- (a) Install disconnect switches complete with fuses as indicated.
- (b) Install local to equipment on adjacent wall, column, or other suitable mounting surface. Where necessary provide free standing rigid continuous slotted channel strut frame.
- (c) Where mounted on masonry walls, allow minimum of 6 mm clear space between enclosure and masonry wall.

### **3.6 MOTOR STARTERS AND MOTORS**



## ELECTRICAL DISTRIBUTION

- (a) All motor starters for mechanical equipment shall be supplied, installed and connected under this Division except where starters are included as part of a mechanical "package" and which will be provided under mechanical trade but wired and connected under this Division.
- (b) Provide line voltage disconnect switches at each piece of electrically operated mechanical equipment to meet Code Requirements.
- (c) All motors shall be wired and connected under this Division. The drawings do not necessarily show the exact location of wiring to motors and it shall be the responsibility of this Division to fully coordinate this work with the mechanical drawings.

### 3.7 ELECTRICAL CONNECTIONS FOR MECHANICAL EQUIPMENT

- (a) Provide all required electrical connections to apparatus provided and/or supplied by mechanical trade, or by the Owner.

### 3.8 MECHANICAL CONTROLS

- (a) Be responsible for the provision of 120 volt line side power connections to all control apparatus where detailed or required to make the system operational.

### 3.9 GROUNDING INSTALLATION

- (a) Install complete permanent, continuous grounding system including, conductors, connectors, accessories and connect to the existing building ground system. Where EMT is used, run ground wire in conduit.
- (b) Install connectors in accordance with manufacturer's instructions.
- (c) Protect exposed grounding conductors from mechanical injury.
- (d) Make buried connections, and connections to conductive water main, electrodes, using copper welding by thermit process.
- (e) Use mechanical connectors for grounding connections to equipment provided with lugs.
- (f) Soldered joints not permitted.
- (g) Install bonding wire for flexible conduit, connected at one end to grounding bushing, solderless lug, clamp or cup washer and screw. Neatly cleat bonding wire to exterior of flexible conduit.
- (h) Make grounding connections in radial configuration only, with connections terminating at single grounding point. Avoid loop connections.
- (i) Bond single conductor, metallic armoured cables to cabinet at supply end, and provide non-metallic entry plate at load end.
- (j) System And Circuit Grounding

## ELECTRICAL DISTRIBUTION

- (i) Install system and circuit grounding connections to neutral of secondary 347/600V system.
- (k) Grounding Field Quality Control
  - (i) Perform tests in accordance with Section 26 05 00 – General Instruction for Electrical.
  - (ii) Perform ground continuity and resistance tests using method appropriate to site conditions and to approval of local authority having jurisdiction over installation.
  - (iii) Perform tests before energizing electrical system.
- (l) Building Grounding
  - (i) Install rods to meet code and design requirements.
  - (ii) Connect all steel or metal structures, equipment enclosures and equipment ground buses to the substation ground grid.
  - (iii) Connect neutral point of transformers to Building ground grid.
- (m) Cables
  - (i) Bond single conductor cable armour to equipment enclosure at (supply end) and (load end).
  - (ii) Bond multiconductor cable armour to equipment enclosures.
  - (iii) Bond grounding conductor of multiconductor armoured and non-armoured cable to ground bus or lug in equipment enclosures.
- (n) Structural Steel And Building Grounding
  - (i) Ground building structural steel columns to buried perimeter grounding conductor. Ensure perimeter cable is slack to avoid stressing the connections.
  - (ii) Install grounding jumpers across building expansion joints.
  - (iii) Install ground rods close to column foundations and drive top of rod 150 mm below grade or finished floor level of slab on grade.
  - (iv) Install inspection boxes.
- (o) Raceways
  - (i) On raceways, lock-up tight all couplers and connections to boxes and enclosures. Install bonding jumpers at expansion joints, and where necessary. Maintain ground continuity throughout run of raceway.

## ELECTRICAL DISTRIBUTION

- (ii) Install bonding jumpers on both ends of flexible conduit. Use grounding bushing, solderless lug, clamp or cup washer and screw connection. Install grounding conductor inside flexible conduit.
- (iii) Non-metallic raceways: install insulated grounding conductor in raceway.
- (iv) Branch and feeder circuits in rigid conduit: use raceway as bonding conductor.
- (v) Cable trays: provide a bare No. 2/0 AWG ground conductor along inside of tray run bonded to tray at 15 m intervals. Where multiple cable trays are supported on a common structure bond all trays to one common grounding conductor at 15 m intervals.
- (p) Equipment Grounding
  - (i) Install grounding connections to typical equipment included in, but not necessarily limited to following list: Service equipment, duct systems, building steel Work, switchgear, cable trays, distribution panels, outdoor lighting equipment.

### 3.10 TESTING AND INSPECTION OF POWER DISTRIBUTION SYSTEM

- (a) Include in the Tender price the cost of on-site inspection and testing of the following main distribution equipment.
  - (i) Distribution Equipment
  - (ii) Grounding System
- (b) This engineering inspection and testing shall be done prior to the system being energized and shall include the following items where applicable:
  - (i) Testing, cleaning and where necessary, calibrating all relays and circuit breaker trip devices.
  - (ii) Function test of protection and control devices.
  - (iii) Megger test interconnecting cables.
  - (iv) Replacement of fuses destroyed or damaged during the start- up or testing;
- (c) Acceptance tests shall be conducted in the presence of and to the satisfaction of the Consultant.
- (d) Make good any defects indicated in the equipment and in the installation by the tests.

**END OF SECTION**



	MECHANICAL DRAWINGS LIST
DRAWING. NO.	DRAWING TITLE
M-1	MECHANICAL GENERAL
M-2	WATER METER ROOM AND REFRIGERATION ROOM – DEMOLITION AND PROPOSED
M-3	PART PLAN ARENA – DEMOLITION AND PROPOSED
M-4	PART PLAN ARENA – DEMOLITION AND PROPOSED

## DEHUMIDIFIER

EQUIP. NO.	MAKE/ MODEL	AIRFLOW (CFM)	MOISTURE REMOVAL (Lbs/hr)	E.S.P. INCH W.C.	POWER SUPPLY V/PH/HZ	MOTOR (HP), PROCESS/REACT	APPROX. WEIGHT LBS (OLD/NEW)	STARTER				CONTROLS	OTHER REQ.	REMARKS	
								SUPPLIED BY		INSTALLED BY					
								MECH	ELECT	MECH	ELECT	AUTO	DISC. SWITCH BY ELECT	F.A. SHUT DOWN BY ELECT	
DH-1	IRD-050F	3400	22.2	0.75	575/3/60	1.5/3	870/1000	X	-	X	-	X	X	-	
DH-2	IRD-075F	4000	27.2	0.75	575/3/60	2/3	920/1080	X	-	X	-	X	X	-	

NOTES:

1. MOISTURE REMOVAL RATES ARE AT 60°F INSIDE & 60% RH.

PUMPS: MAKE: ARMSTRONG.

EQUIP. NO.	TYPE	FLUID	PUMP		MOTOR			STARTER & DISC SW.				CONTROLS			OTHER REQ.		REMARKS
			FLOW GPM	HEAD FT	RPM	HP	POWER SUPPLY V/PH/HZ	SUPPLIED BY		INSTALLED BY		AUTO	INTERLOCK BY				
								MECH	ELECT	MECH	ELECT			MECH			
JCP-1	CENTRIFUGAL	WATER	20	50	1800	1.5	575/3/60	-	X	-	X	X	X	-			ARMSTRONG OR APPROVED EQUAL
CP-1	CENTRIFUGAL	WATER	100	30	3600	1.5	575/3/60	-	X	-	X	X	X	-			ARMSTRONG OR APPROVED EQUAL
FP-1	INLINE	WATER (FIRE)	70	115	1800	10	575/3/60	-	X	-	X	X	X	-			ARMSTRONG, DARLING DURO OR APPROVED EQUAL

NOTES:

1. FIRE PUMP SHALL BE LISTED AND IT SHALL BE SUPPLIED WITH ONE APPROVED TORNATECH GPX SERIES FIRE PUMP CONTROLLER IN A NEMA 2 ENCLOSURE. PROVIDE ALL NECESSARY POWER WIRING TO THE PUMP IN CONDUITS AND ALL NECESSARY CONTROL WIRING IN CONDUITS.

## EXHAUST FAN SCHEDULE

EQUIP. NO.	TYPE	MAKE	MODEL	CAPACITY CFM (MAX/MIN)	E.S.P INCH.	FAN MOTOR (HP)	POWER SUPPLY (V/PH/HZ)	WEIGHT (LBS)	STARTER				CONTROLS		OTHER REQ.		REMARKS	
									SUPPLIED BY		INSTALLED BY		AUTO	INTERLOCK BY		DISC. SWITCH BY ELECT		F.A. SHUT DOWN BY ELECT
									MECH.	ELECT.	MECH.	ELECT.		MECH.	ELECT.			
EF-15	INLINE	GREENHECK	SE1-20-428-A15	5500	0.125	1.5	575/3/60	150		X		X	X	X	X	X	C/W WALL HOUSING, BACKDRAFT DAMPER AND INLET GUARD.	
EF-17	INLINE	GREENHECK	SE1-20-428-A15	5500	0.125	1.5	575/3/60	150		X		X	X	X	X	X	C/W WALL HOUSING, BACKDRAFT DAMPER AND INLET GUARD.	

NOTE:

CONSTRUCTION/PHASING NOTES:

1. INCLUDE ALL COSTS TO PROVIDE NECESSARY HOARDING & SAFETY SIGNAGE FOR THE ENTIRE DURATION OF THE CONSTRUCTION RELATED TO REPLACEMENT OF THE FANS, DEHUMIDIFIERS AND REFRIGERATION SYSTEM PUMPS AND ASSOCIATED PIPING.
2. INCLUDE ALL COSTS TO PROVIDE NECESSARY SAFETY SIGNAGE AND FIRE WATCH FOR THE ENTIRE DURATION OF THE CONSTRUCTION RELATED TO REPLACEMENT OF THE FIRE PUMP AND ASSOCIATED PIPING. MINIMIZE THE SHUTDOWN PERIOD OF THE FIRE WATER SUPPLY SYSTEM AND PROVIDE ALL LABOUR FOR ADEQUATE FIRE WATCH OF THE ENTIRE BUILDING DURING THE PERIOD OF CONSTRUCTION WHEN THE FIRE WATER SUPPLIES ARE SHUT DOWN. COORDINATE THE SCHEDULE OF WORK WITH THE CITY AT LEAST 72 HOURS IN ADVANCE AND COMPLETE THE WORK SUBJECT TO APPROVAL OF THE PLAN BY THE CITY

LEGEND:

Symbol	EXISTING TO BE REMOVED
T/A	TO ABOVE
F/B	FROM BELOW
H/L	HIGH LEVEL
L/L	LOW LEVEL
EX	EXISTING
CTE	CONNECT TO EXISTING
DCV BFP	DOUBLE CHECK VALVE ASSEMBLY BACKFLOW PREVENTER
EF	EXHAUST FAN
DH	DEHUMIDIFIER
JCP	JACKET COOLING PUMP
CP	COMPRESSOR PUMP
FP	FIRE PUMP
FFD	FUNNEL FLOOR DRAIN
	ISOLATION VALVE
	CHECK VALVE
	Y—STRAINER
	PRESSURE GAUGE

GENERAL NOTES:

1. THE DESIGN DOCUMENTS HAVE BEEN PREPARED ON THE BASIS OF INFORMATION OBTAINED FROM THE GENERAL SITE REVIEW AND FROM THE EXISTING DOCUMENTS. MAKE NECESSARY ADJUSTMENTS TO LOCATIONS OF EQUIPMENT, DUCTWORK, PIPING ETC. TO SUIT EXISTING SITE CONDITIONS. MAKE ALLOWANCES FOR ADDITIONAL ELBOWS, FITTINGS, SUPPORTS, ETC. REQUIRED TO PROVIDE OFFSETS IN THE PIPING, ETC. TO SUIT EXISTING SITE CONDITIONS. NO EXTRAS WILL BE ALLOWED FOR THE INTENDED SCOPE OF WORK SHOWN IN THE TENDER DOCUMENTS.
2. THE BUILDING WILL BE OCCUPIED DURING CONSTRUCTION. COORDINATE ALL CONSTRUCTION ACTIVITIES RELATED TO REPLACEMENT OF EACH OF THE ROOFTOP UNITS AND FOR REPLACEMENT OF BAS WITH FACILITIES GROUP PRIOR TO COMMENCING ANY CONSTRUCTION ACTIVITY.
3. WORK SHALL BE CARRIED OUT IN PHASES TO MINIMIZE DISRUPTION AND TO FACILITATE ONGOING OPERATIONS INSIDE THE BUILDING.
4. TO INSTALL DUCT CONNECTIONS FOR NEW UNITS REMOVAL AND RE-INSTALLMENT OF CEILING AREAS IS REQUIRED. INCLUDE ALL ASSOCIATED COSTS FOR REMOVAL AND RE-INSTALLATION OF EXISTING CEILINGS AND CEILING COMPONENTS.
5. DEMOLITION OF EXISTING AND INSTALLATION OF NEW EQUIPMENT C/W ALL ACCESSORIES AS REQUIRED SHALL FOLLOW THE CONSTRUCTION PHASING PLAN AS SHOWN AND INDICATED ON DRAWING M-2, M-3, M-4 AND SPECIFICATIONS.



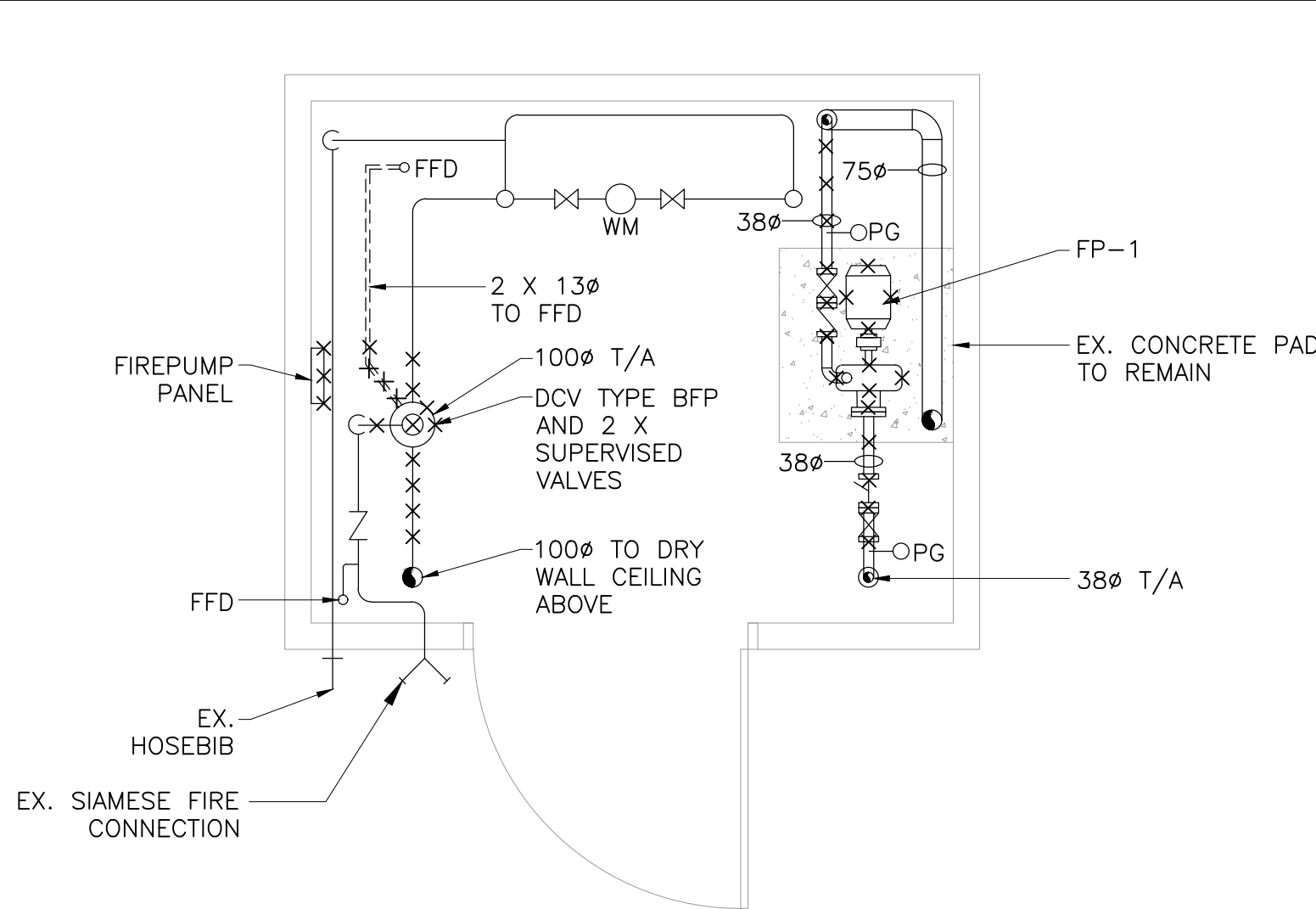
NORTH ARROW

REGISTERED PROFESSIONAL ENGINEER  
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Province of Ontario  
18/02/2014

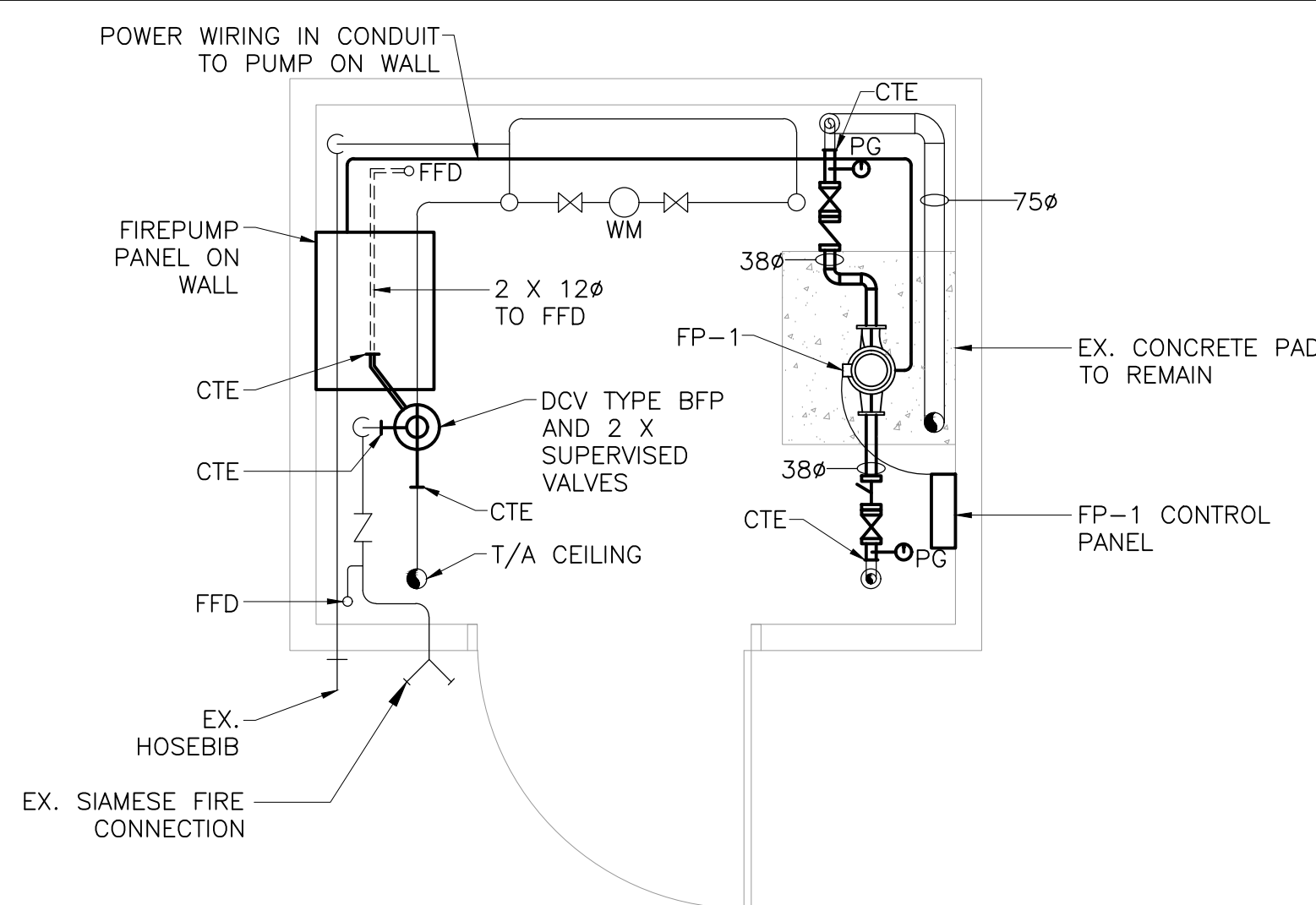
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2	10/01/24	ISSUED FOR PERMIT	V.L.
1	07/22/24	ISSUED FOR CLIENT REVIEW	V.L.
REV	DATE	DESCRIPTION	BY

MECHANICAL GENERAL			
TITLE JIM ARCHDEKIN REC. CENTRE MECHANICAL EQUIPMENT REPLACEMENT			
292 Conestoga Dr, Brampton, ON L6Z 3M1			
SCALE: NONE	DRAWING V.I. DATE: 06/15/24	CHWD M.I.L. DATE: 06/15/24	APPROV. M.I.L. DATE: 06/15/24
CONTRACT No.		DWG No.	M - 1





- NOTES:
1. DEMOLISH EXISTING PUMP C/W POWER WIRING, PANEL, VALVES AND ACCESSORIES. THE DECOMMISSIONED PUMP AND THE PANEL SHALL BE HANDED OVER TO THE CLIENT.
  2. DRAIN THE SYSTEM AS REQUIRED TO FACILITATE CONSTRUCTION.
  3. REPLACE EXISTING BFP WITH NEW AS SPECIFIED.
  4. REPLACE EXISTING BACKFLOW PREVENTER WITH AN APPROVED DOUBLE CHECK VALVE ASSEMBLY AS PER SPECIFICATIONS



## WATER METER ROOM - DEMOLITION

SCALE: 1:25

1

M-2

## WATER METER ROOM - PROPOSED

SCALE: 1:50

2

M-2

### NOTES:

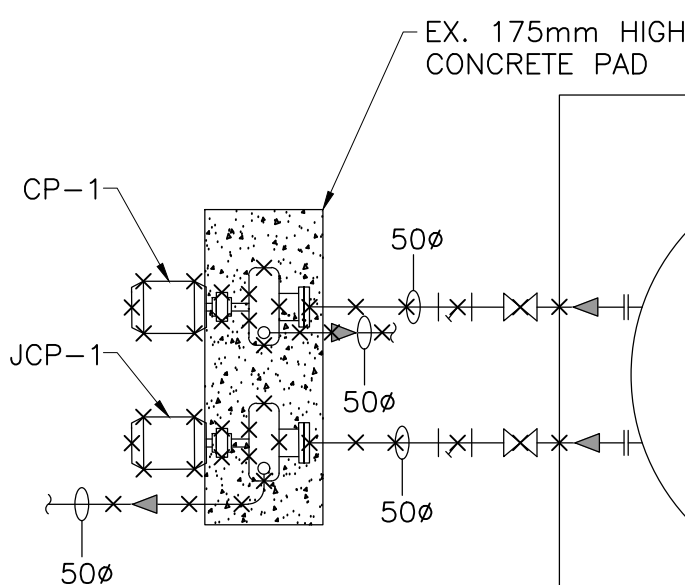
1. DEMOLISH EXISTING PUMP C/W POWER WIRING, PANEL, VALVES AND ACCESSORIES. THE DECOMMISSIONED PUMP SHALL BE HANDED OVER TO THE CLIENT
2. DRAIN THE SYSTEM AS REQUIRED TO FACILITATE CONSTRUCTION.

EX. BRINE PUMP TO REMAIN

EX. C-1 TO REMAIN

EX. C-2 TO REMAIN

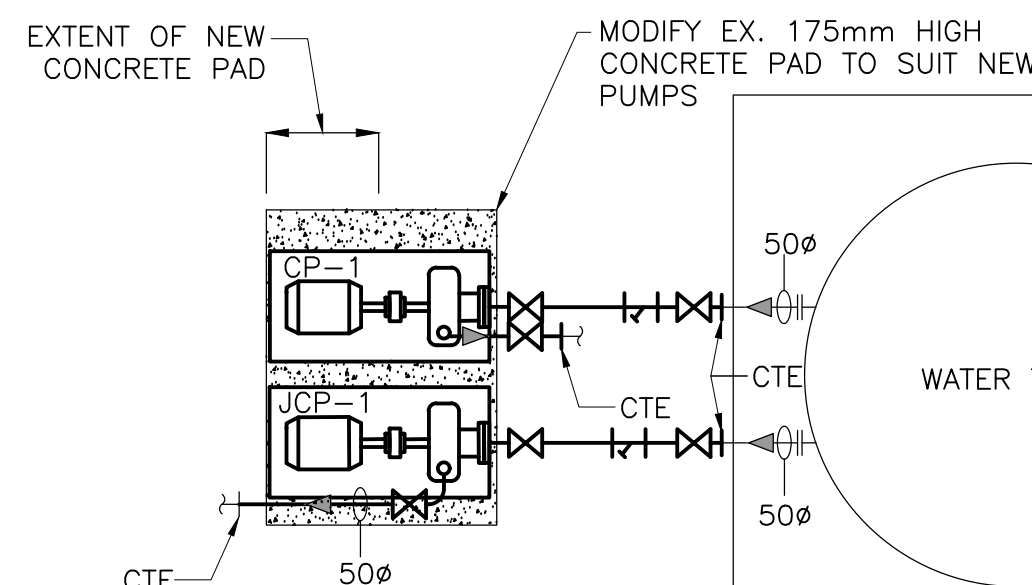
EX. SHELL AND TUBE CHILLER TO REMAIN



EX. SHELL AND TUBE CHILLER TO REMAIN

EX. C-1 TO REMAIN

EX. C-2 TO REMAIN



## REFRIGERATION ROOM - DEMOLITION

SCALE: 1:50

3

M-2

## REFRIGERATION ROOM - PROPOSED

SCALE: 1:50

4

M-2

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2	10/01/24	ISSUED FOR PERMIT	V.L.	M.L.
1	07/22/24	ISSUED FOR CLIENT REVIEW	V.L.	M.L.
REV	DATE	DESCRIPTION	BY	CHKD

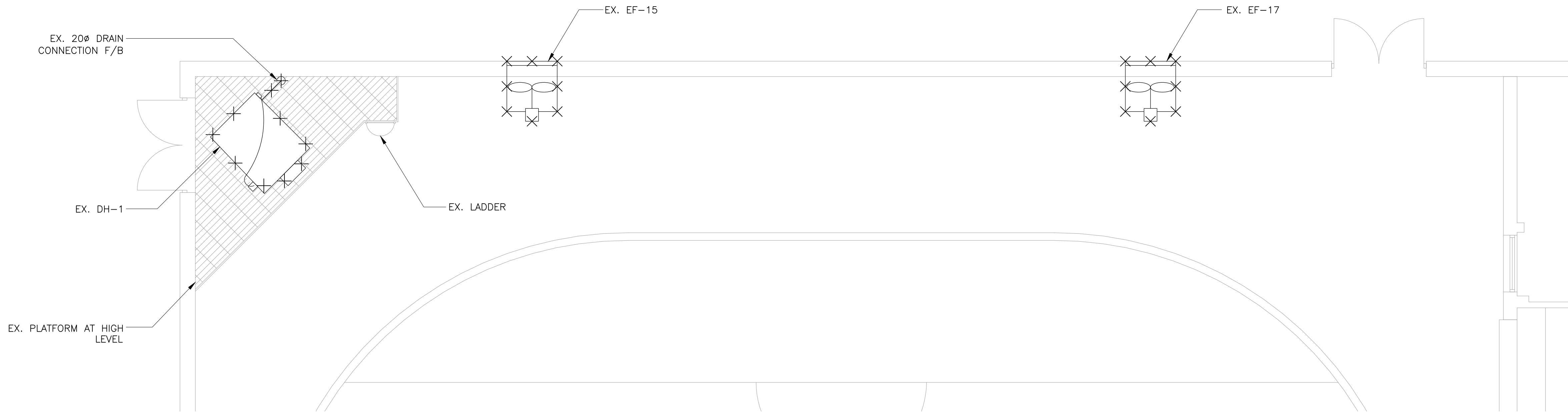
WATER METER ROOM AND REFRIGERATION ROOM DEMOLITION AND PROPOSED

TITLE: JIM ARCHDEKIN REC. CENTRE MECHANICAL EQUIPMENT REPLACEMENT

292 Conestoga Dr., Brampton, ON L6Z 3M1

SCALE: 1:50 DRAWN: V.L. DATE: 06/15/24 CHKD: M.L. DATE: 06/15/24 APPR: M.L. DATE: 06/15/24

CONTRACT No. DWG No. M-2 REV 1



PART PLAN ARENA - DEMOLITION

SCALE: 1:50

1  
M-3



PART PLAN ARENA - PROPOSED

SCALE: 1:50

2  
M-3

- GENERAL NOTES:
1. DEMOLISH EXISTING DEHUMIDIFIER C/W PIPING AS SHOWN. DISCONNECT FROM ELECTRICAL AND MAKE SAFE.
  2. DEMOLISH EXISTING EXHAUST FANS AND RELATED BACK DRAFT DAMPER. DISCONNECT FROM ELECTRICAL AND MAKE SAFE.
  3. PATCH/ PAINT ALL WALL OPENINGS TO MATCH EXISTING CONSTRUCTION.
  4. VERIFY SIZE OF WALL OPENINGS PRIOR TO ORDERING THE NEW BACK DRAFT DAMPERS.
  5. PROVIDE NEW STRUCTURAL STEEL MEMBERS AND GALVANIZED STEEL BACK PLATE/FLASHING TO ACCOMMODATE THE NEW FANS.
  6. NEW FAN INSTALLATION SHALL BE SIMILAR TO EXISTING. MODIFY WALL OPENING TO SUIT PROPOSED FANS.

DRAWING NOTE:

① STRUCTURAL STEEL SUPPORTS AS REQUIRED BY THE FAN MANUFACTURER. ALLOW FOR A MINIMUM OF WELDED CONSTRUCTION. 100MM X 50MM STRUCTURAL STEEL CHANNEL FRAME AROUND THE FAN HOUSING BOLTED WITH STAINLESS STEEL HARDWARE TO THE EXISTING WALL.

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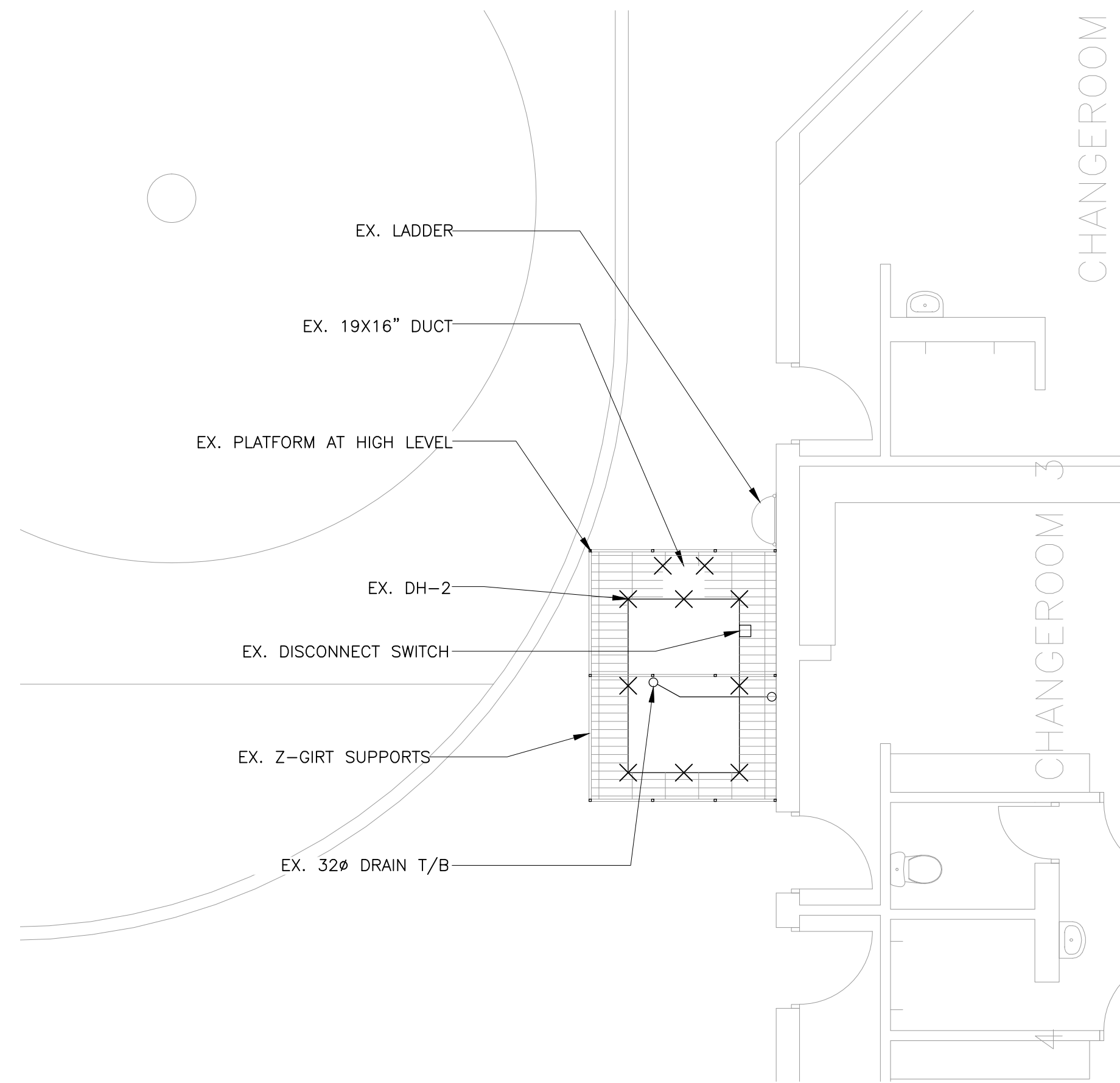
2902 SOUTH SHERIDAN WAY  
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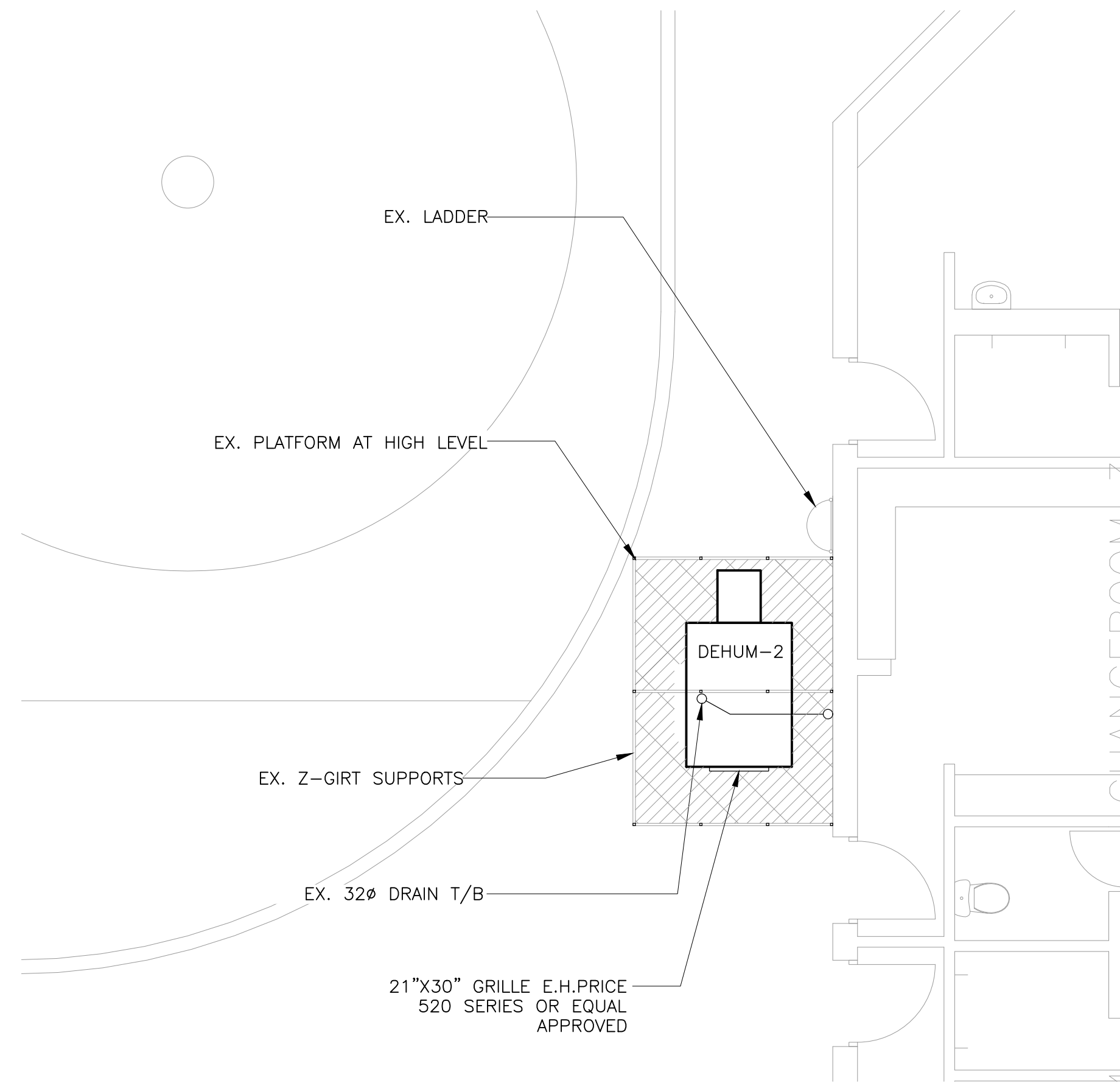
REGISTERED PROFESSIONAL ENGINEER  
6950  
M. LIKHITE  
PROVINCE OF ONTARIO

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2	10/01/24	ISSUED FOR PERMIT	V.L.	M.L.
1	01/22/24	ISSUED FOR CLIENT REVIEW	V.L.	M.L.
REV	DATE	DESCRIPTION	BY	CHKD
PART PLAN ARENA DEMOLITION AND PROPOSED				
TITLE JIM ARCHDEKIN REC. CENTRE MECHANICAL EQUIPMENT REPLACEMENT				
292 Conestoga Dr, Brampton, ON L6Z 3M1				
SCALE:	NONE	DRAWN: V.L. DATE: 06/15/24	CHKD: M.L. DATE: 06/15/24	APPROV: M.L. DATE: 06/15/24
CONTRACT No.		DWG No.	M-3	REV 1



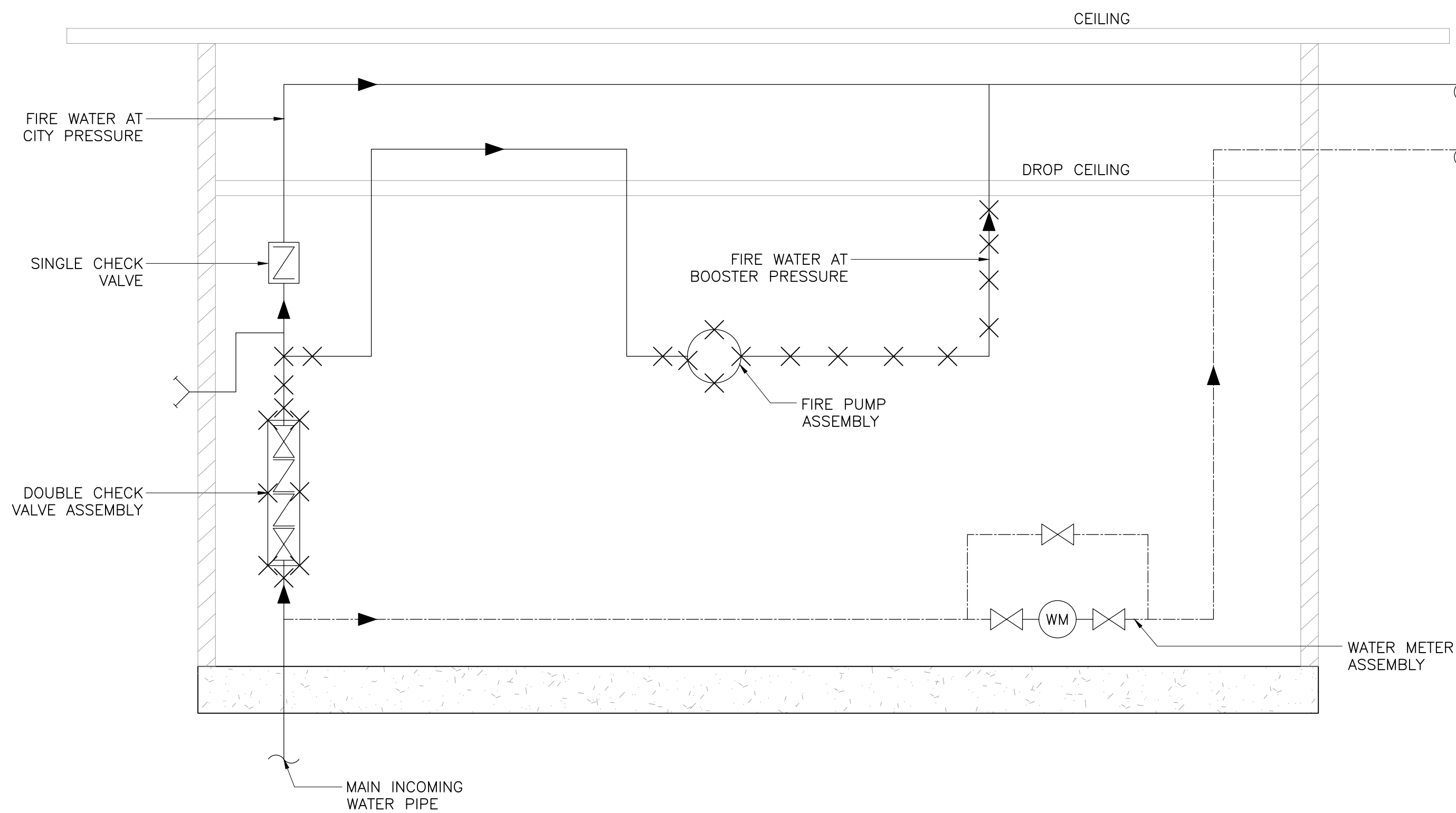
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SCALE: 1:50

1  
M-4



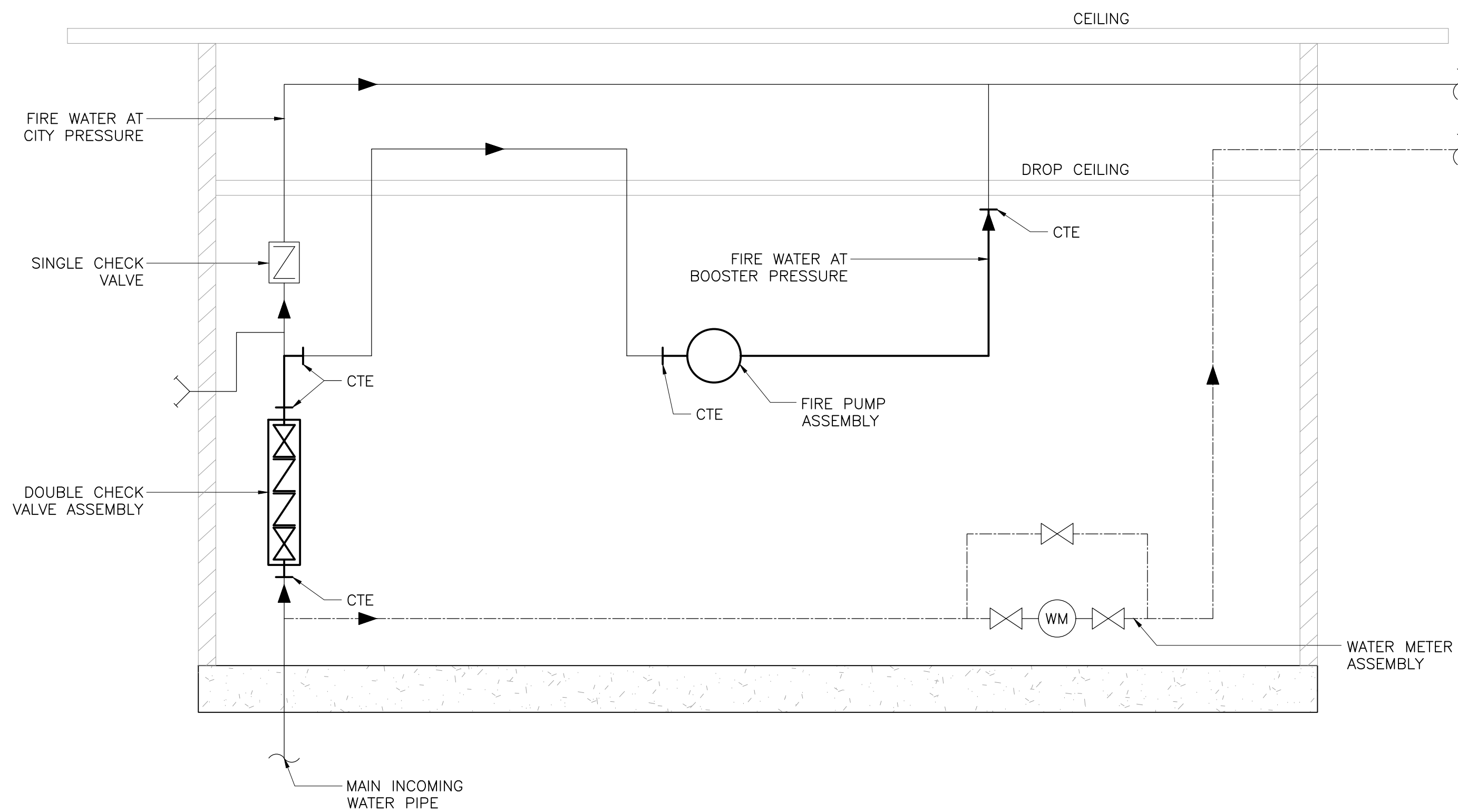
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SCALE: 1:50

2  
M-4



**INCOMING WATER MAIN DISTRIBUTION SCHEMATIC DEMOLITION**  
SCALE: NTS

3  
M-4



**INCOMING WATER MAIN DISTRIBUTION SCHEMATIC PROPOSED**  
SCALE: NTS

4  
M-4

- GENERAL NOTES:
1. DEMOLISH EXISTING DEHUMIDIFIER C/W PIPING AS SHOWN. DISCONNECT FROM ELECTRICAL AND MAKE SAFE.

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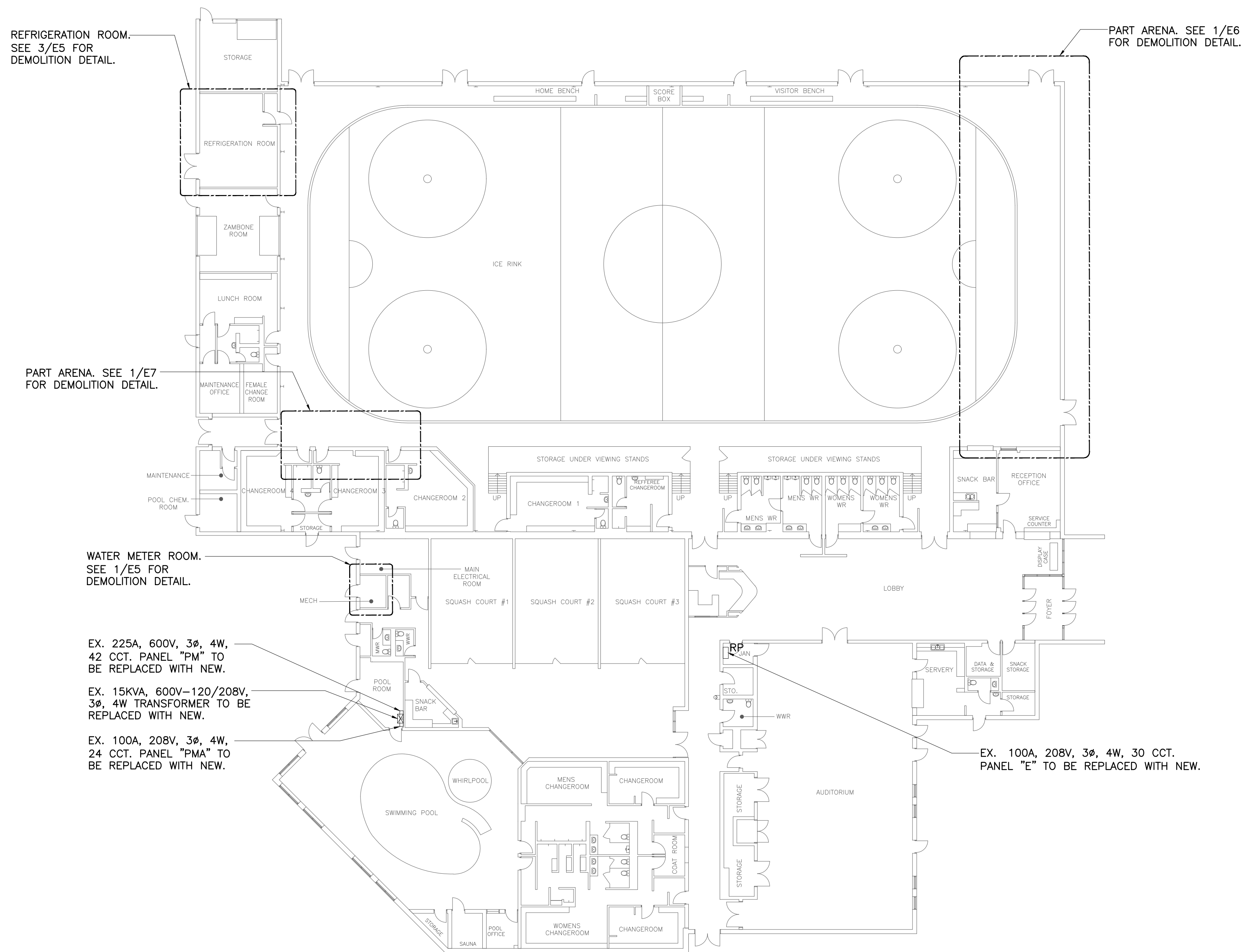
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1	01/22/24	ISSUED FOR CLIENT REVIEW	V.L.	M.L.
REV	DATE	DESCRIPTION	BY	CHKD
PART PLAN ARENA DEMOLITION AND PROPOSED				
TITLE: JIM ARCHDEKIN REC. CENTRE MECHANICAL EQUIPMENT REPLACEMENT				
292 Conestoga Dr., Brampton, ON L6Z 3M1				
SCALE:	NONE	DRAWN: V.L. DATE: 06/15/24	CHKD: M.L. DATE: 06/15/24	APPROV: M.L. DATE: 06/15/24
CONTRACT No.		DWG No.	M-4	REV 1



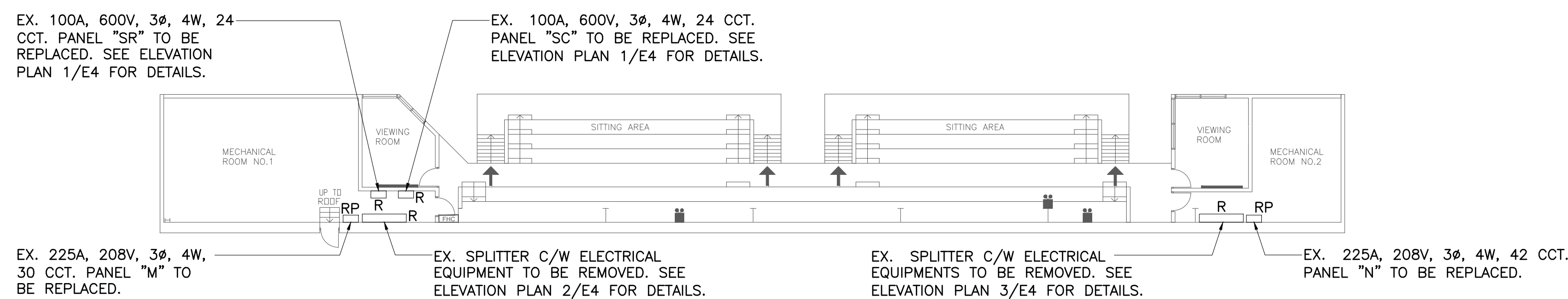






**1**  
**E2** GROUND FLOOR PLAN - DEMOLITION  
SCALE: 1:200

2m 0 4m 8m #M200

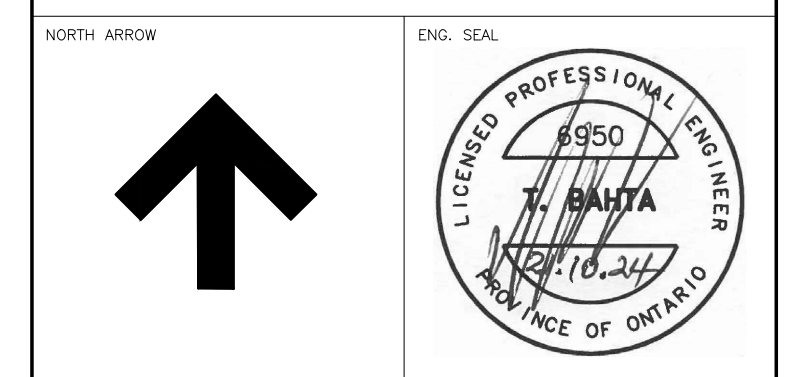


**2**  
**E2** MEZZANINE PLAN - DEMOLITION  
SCALE: 1:200

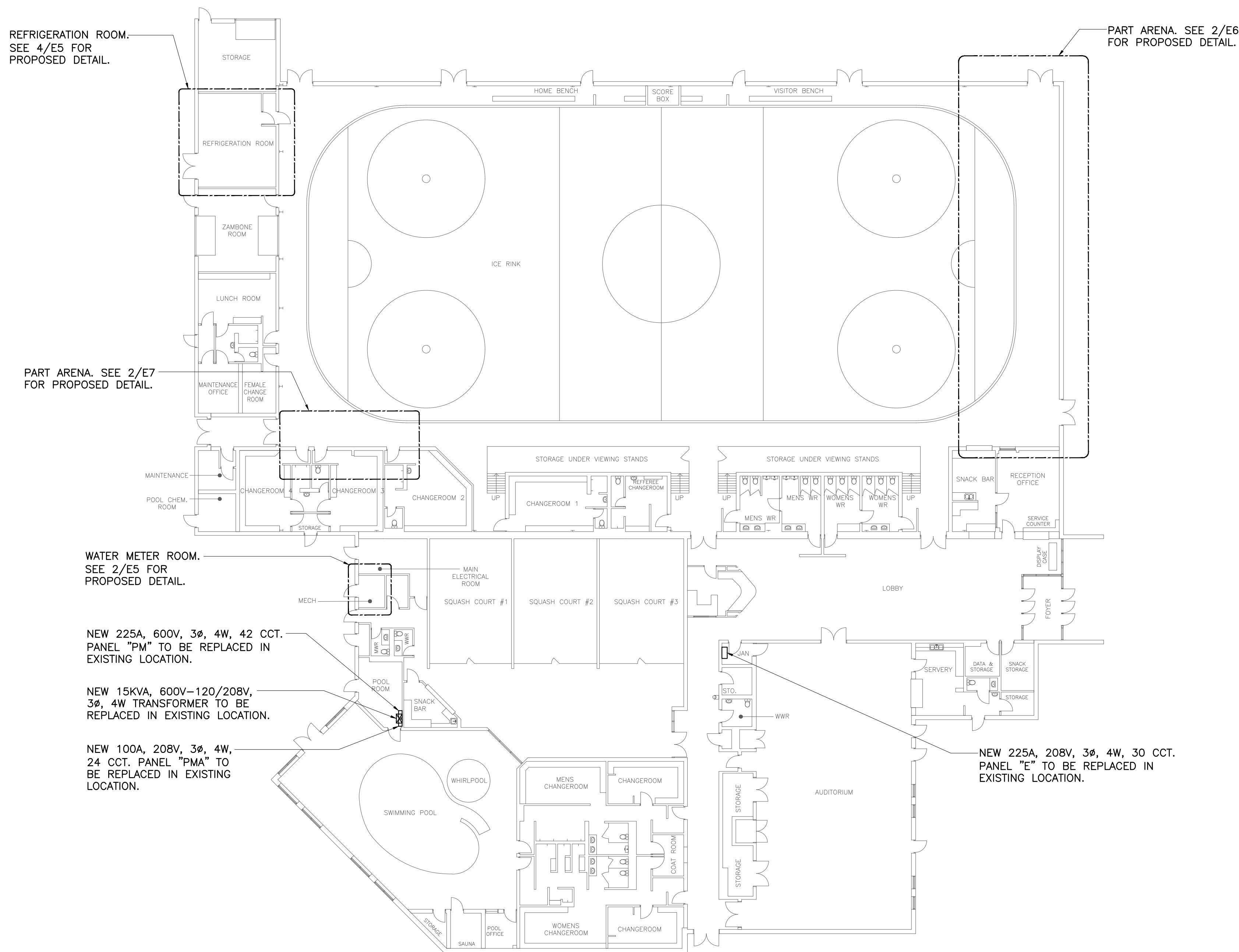
2m 0 4m 8m #M200

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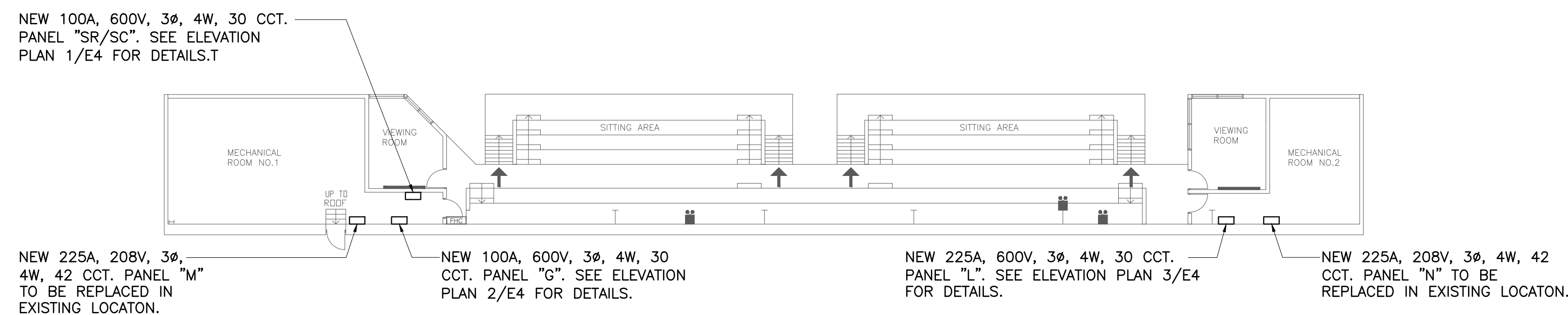


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1	10/01/24	ISSUED FOR PERMIT	N.V. C.M.
REV	DATE	DESCRIPTION	BY
ELECTRICAL DEMOLITION PLANS			
TITLE: JIM ARCHDEKIN RECREATION CENTRE MECHANICAL AND ELECTRICAL UPGRADES			
292 Conestoga Dr., Brampton, ON L6Z 3M1			
SCALE: NONE	DRAWN BY: DATE: 09/20/24	CHECKED BY: DATE: 09/20/24	APPROVED BY: DATE: 09/20/24
CONTRACT No.	DWG No.	E2	REV 1



**1**  
**E3** GROUND FLOOR PLAN - PROPOSED  
SCALE: 1:200

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#M200

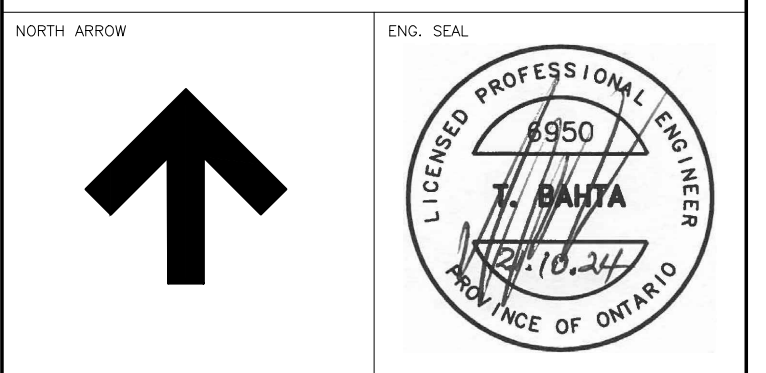


**2**  
**E3** MEZZANINE PLAN - PROPOSED  
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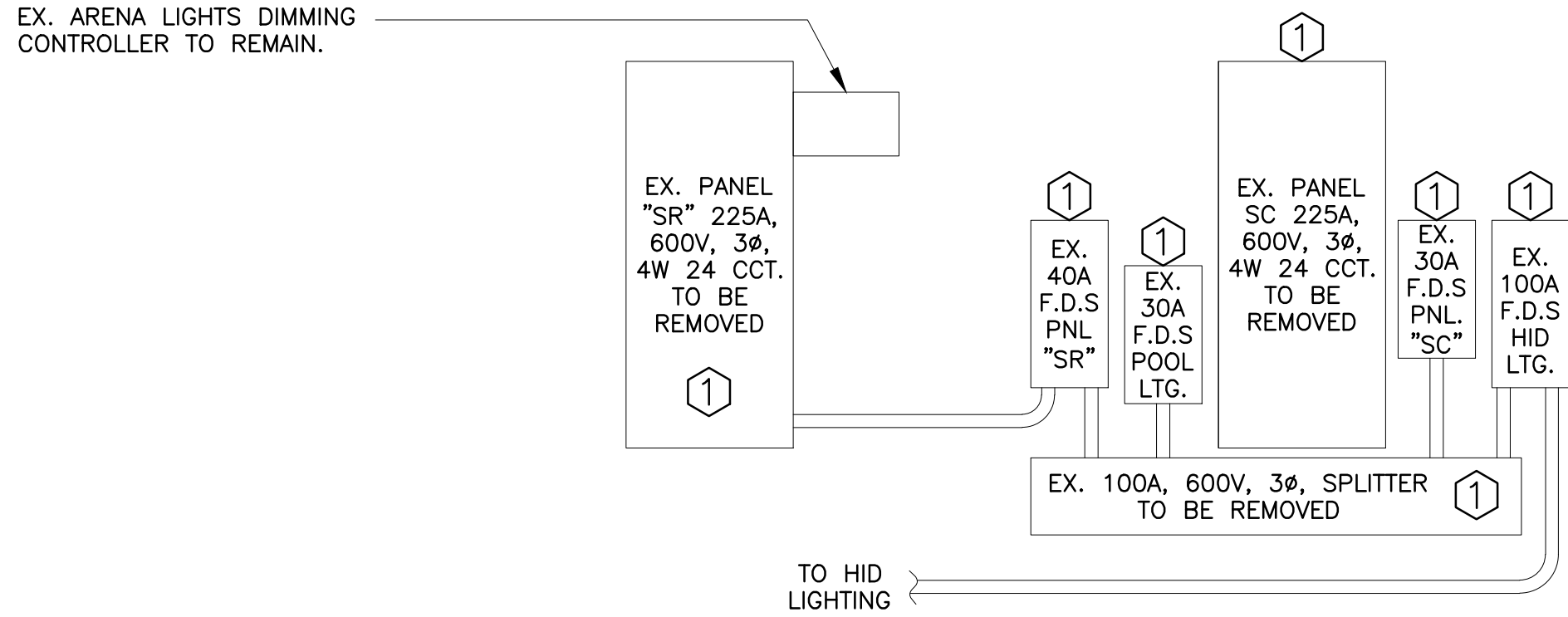
2m 0 4m 8m  
#M200

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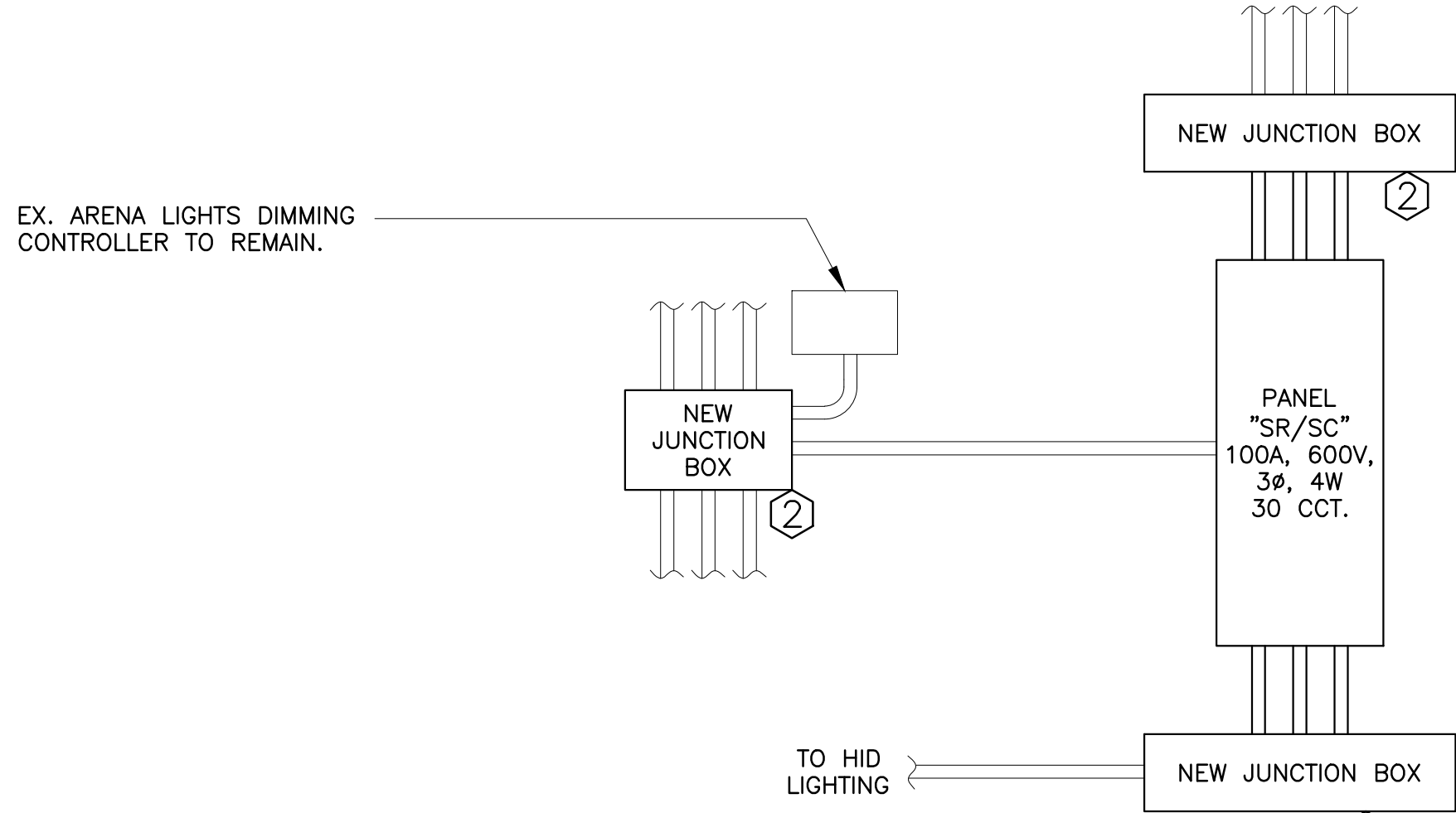
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2	03/31/24	ISSUED FOR TENDER		V.L. C.M.	
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REV	DATE	DESCRIPTION		BY	CHKD
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SCALE:	NONE	DRAWN BY: DATE: 09/20/24	CHKD BY: DATE: 09/20/24	APPROV. BY: DATE: 09/20/24	
CONTRACT No.	DWG No.		E3	REV 1	

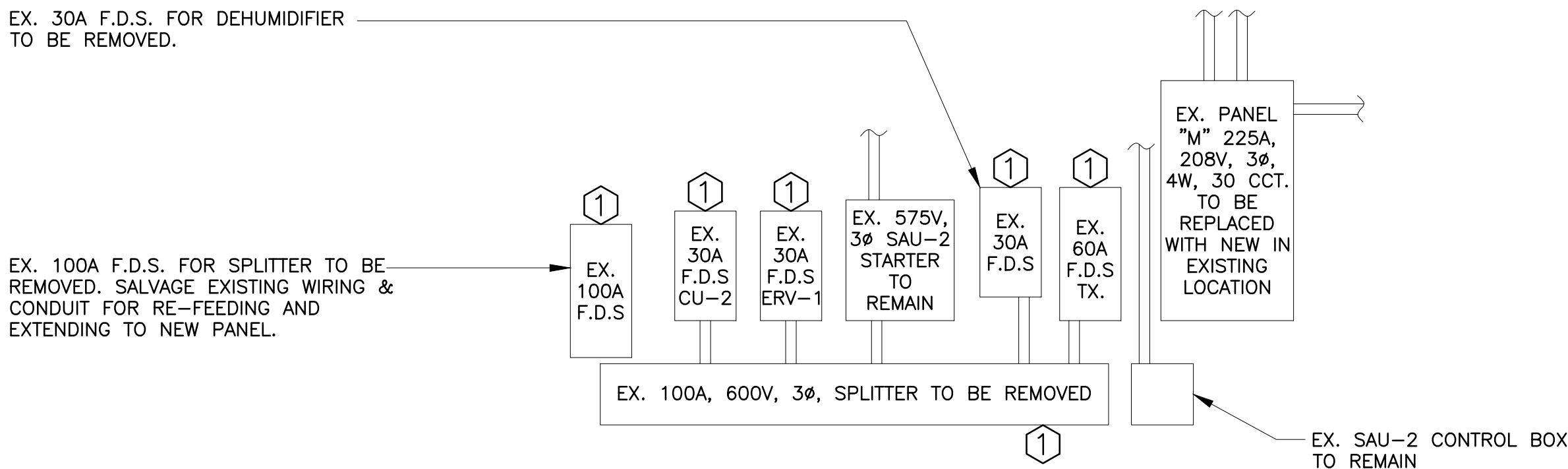


DEMOLITION PLAN

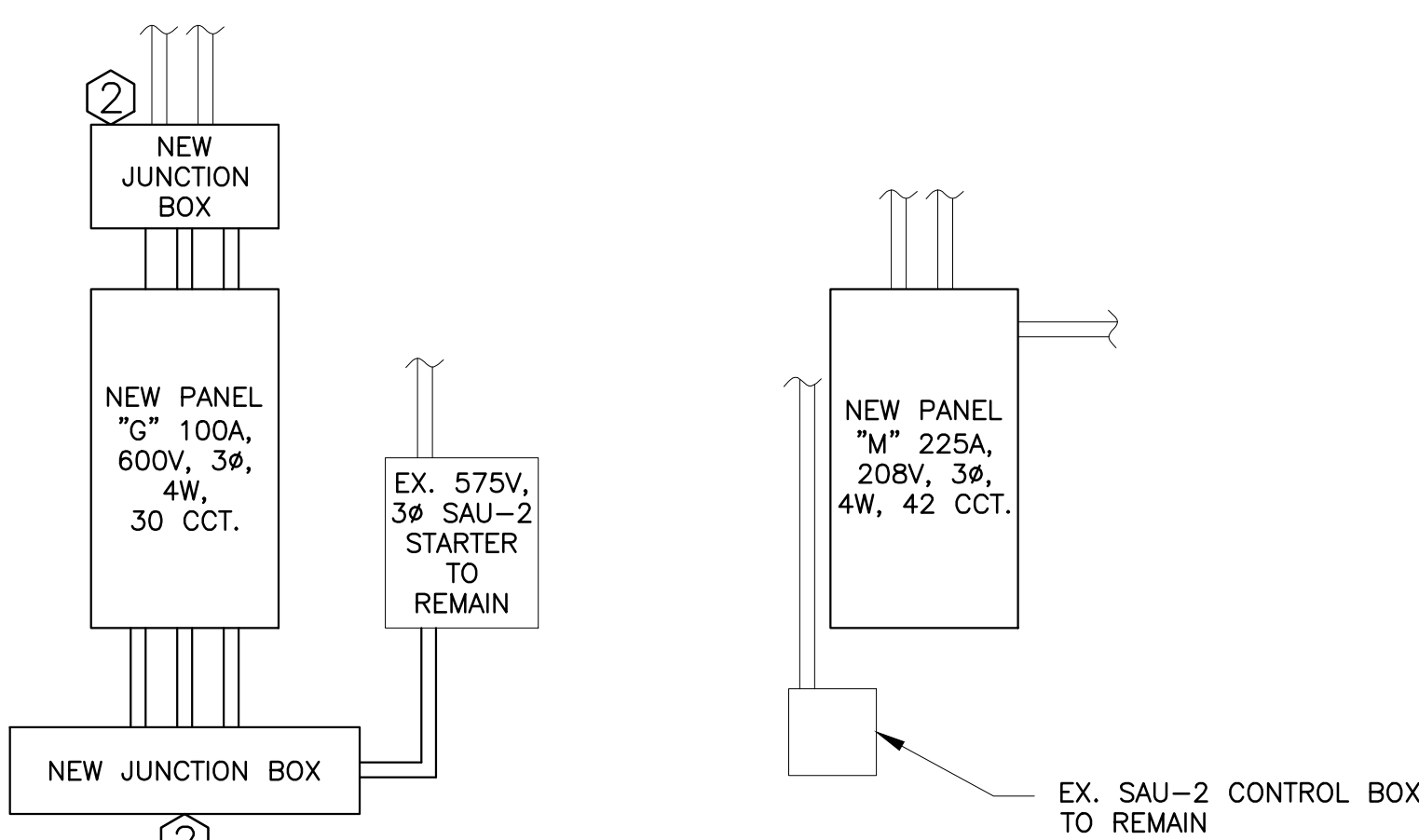


PROPOSED PLAN

**1**  
**E4** **ELEVATION PLAN - MECHANICAL ROOM NO.1**  
SCALE: N.T.S

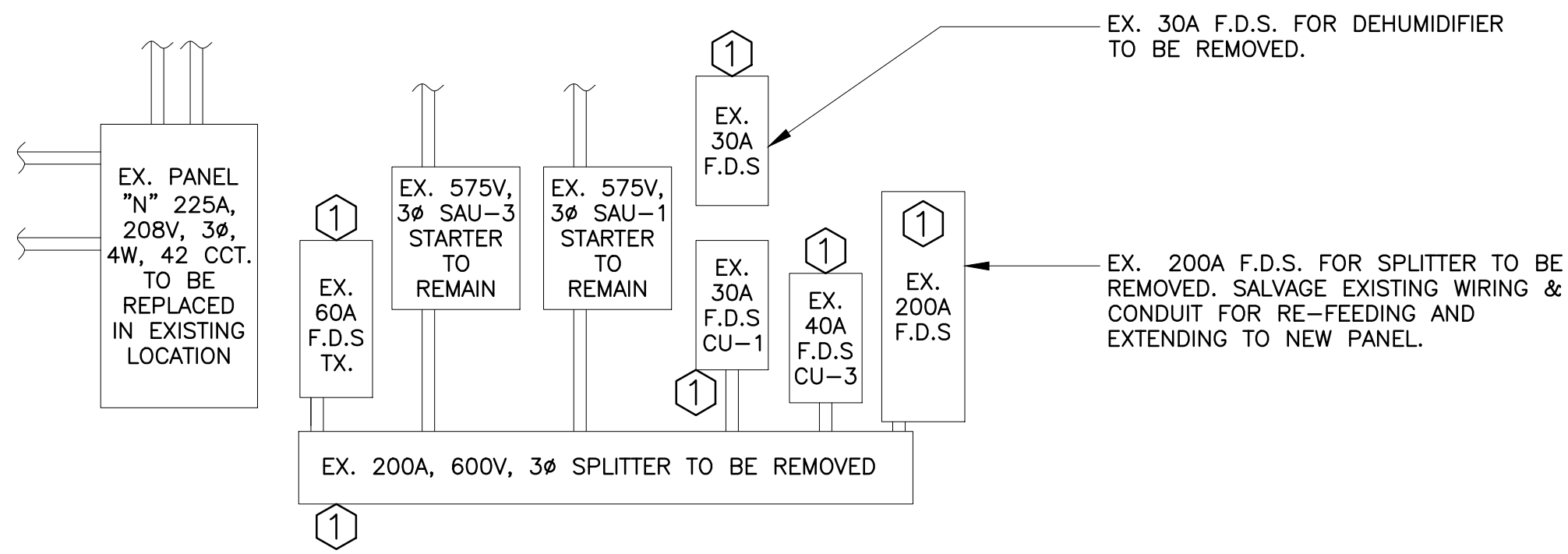


DEMOLITION PLAN

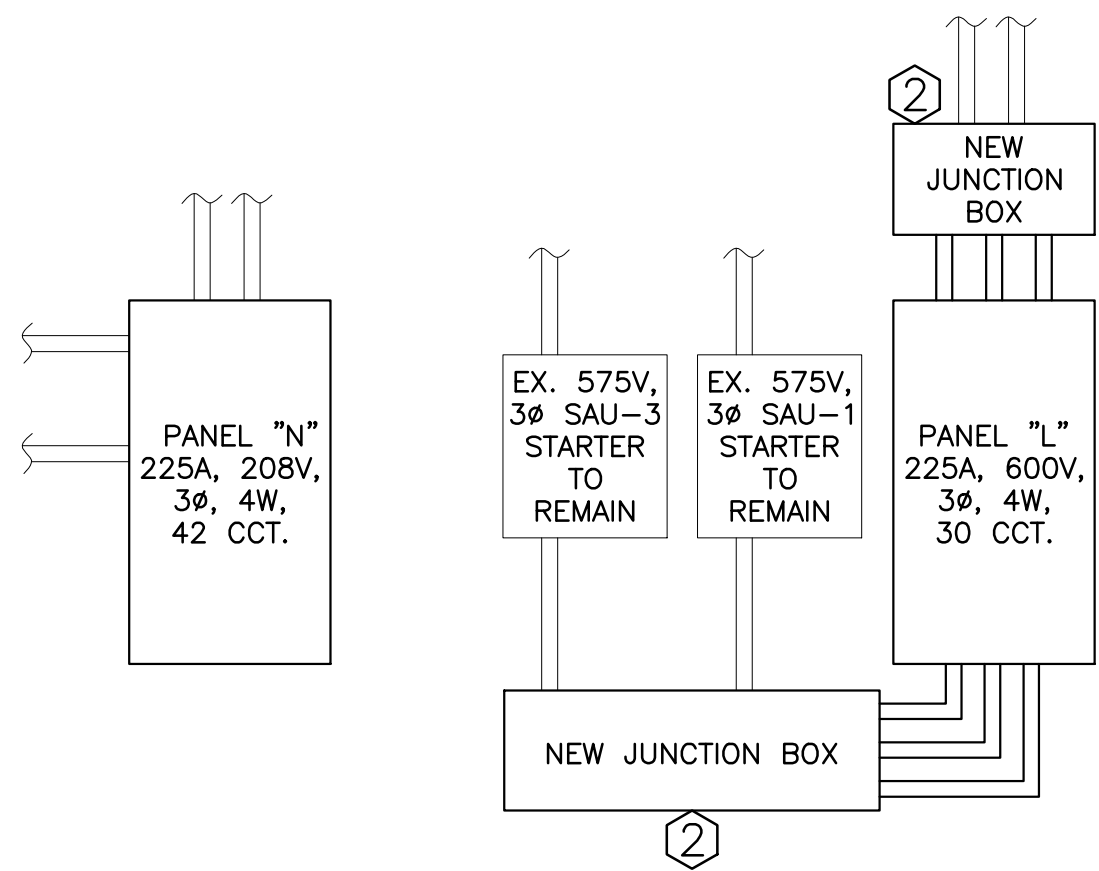


PROPOSED PLAN

**2**  
**E4** **ELEVATION PLAN - MECHANICAL ROOM NO.1**  
SCALE: N.T.S



DEMOLITION PLAN



PROPOSED PLAN

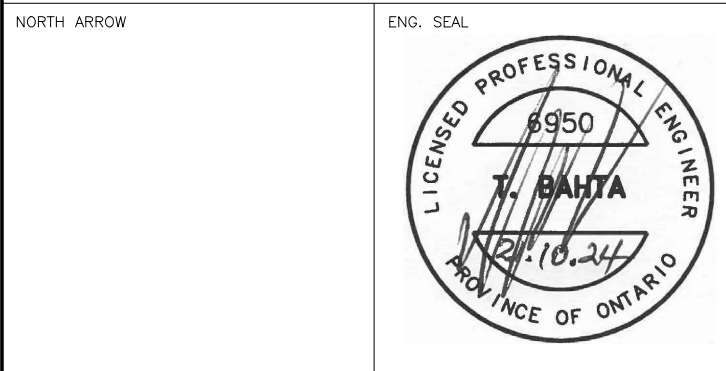
**3**  
**E4** **ELEVATION PLAN - MECHANICAL ROOM NO.2**  
SCALE: N.T.S

NOTES:

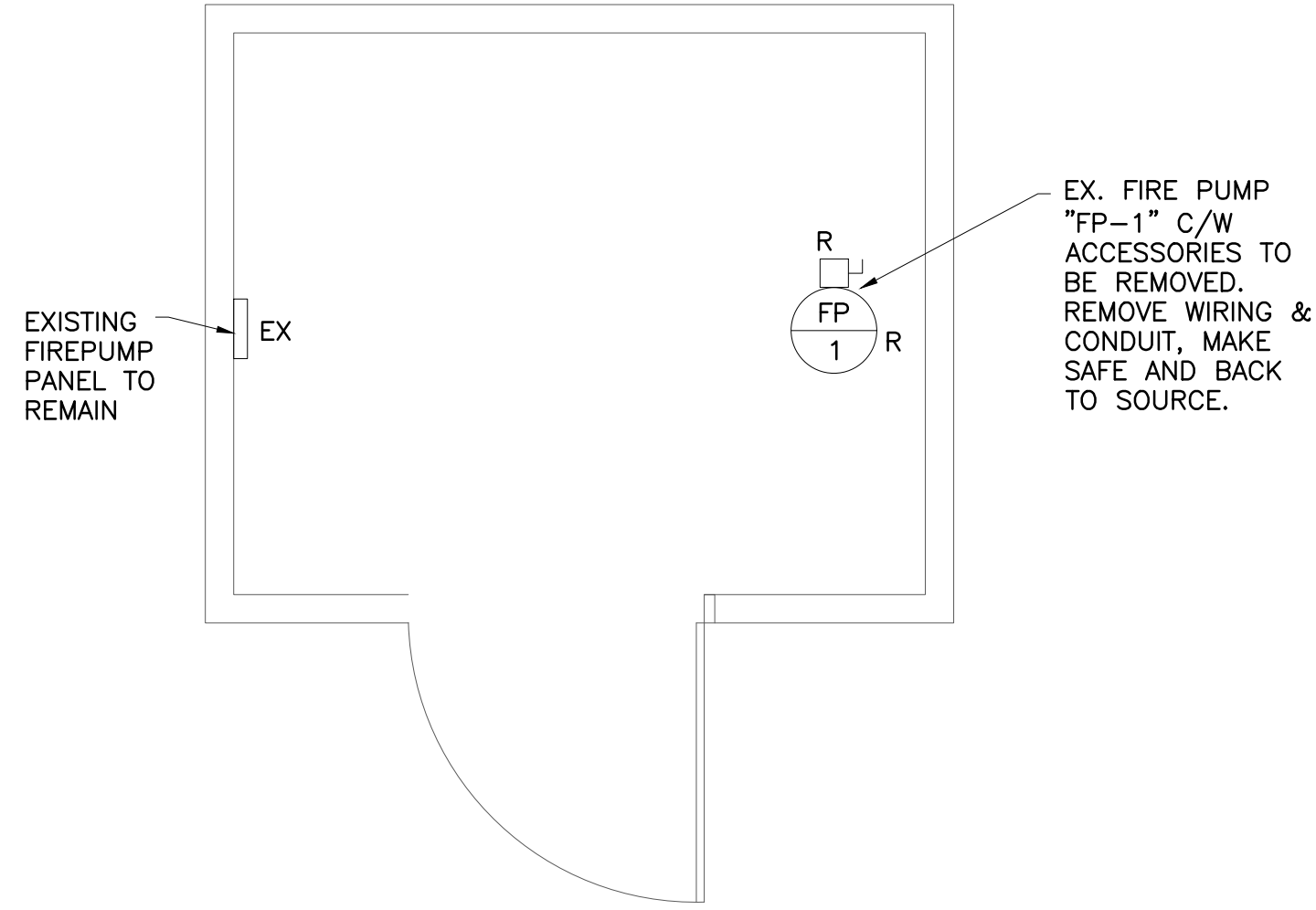
1. EXISTING ITEMS TO BE REMOVED AND TRANSFERRED TO NEW DISTRIBUTION PANEL
2. INTERCEPT EXISTING FEEDER CONDUITS AND WIRING. SPLICE/EXTEND TO NEW PANEL (TYP.)

**Moon-Matz Ltd.**  
Consulting Engineers  
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SUITE 300  
OAKVILLE ON L6J 7L6  
T: (905) 274-7556  
F: (905) 274-5382  
E: info@moon-matz.com  
W: www.moon-matz.com

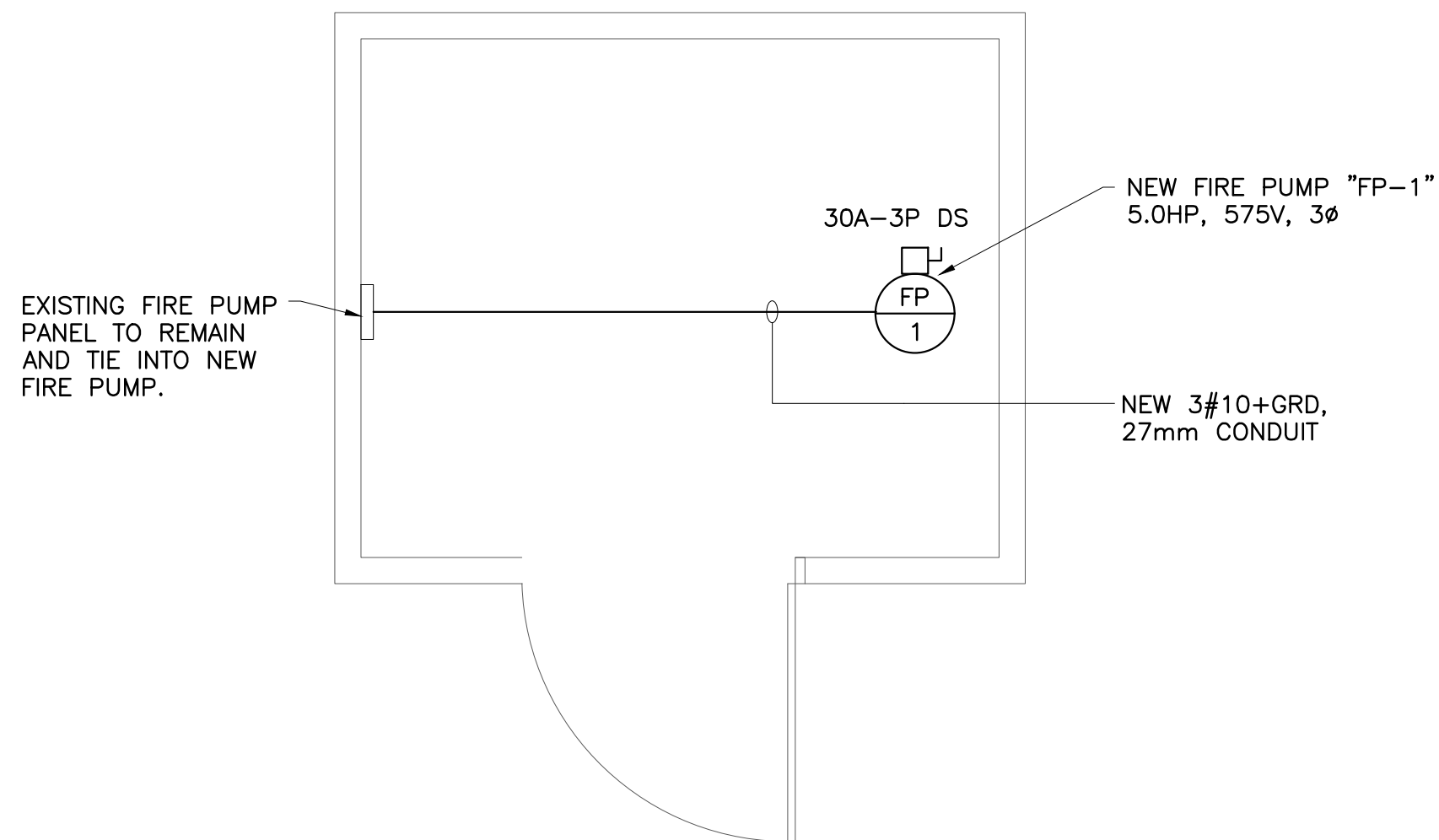
**BRAMPTON**  
FlowerCity  
brampton.ca



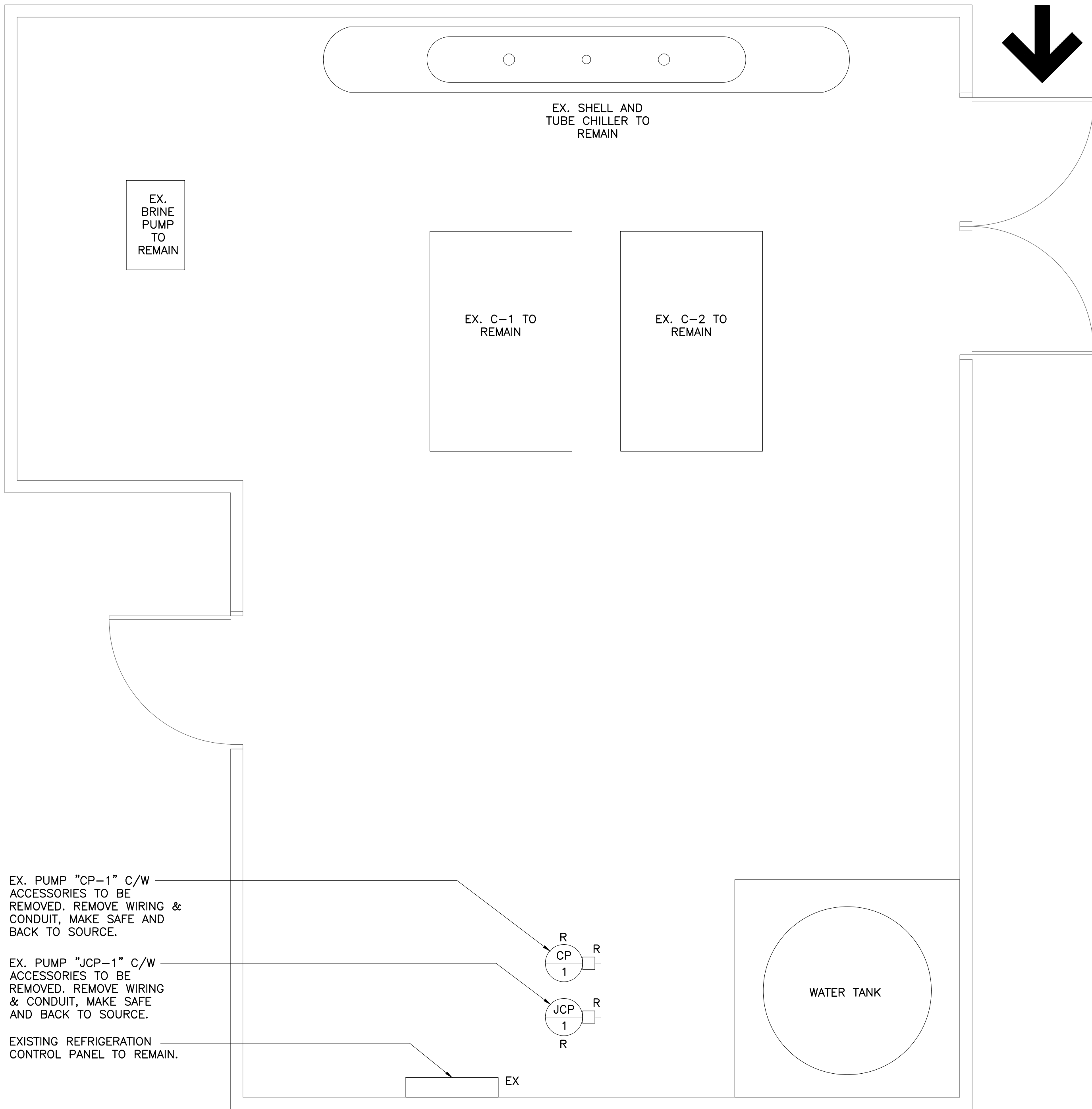
2	03/31/20	ISSUED FOR TENDER	V.L. C.M.
1	10/01/24	ISSUED FOR PERMIT	N.V. C.M.
REV	DATE	DESCRIPTION	BY
ELECTRICAL ELEVATION PLANS			
TITLE: JIM ARCHDEKIN RECREATION CENTRE MECHANICAL AND ELECTRICAL UPGRADES			
292 Conestoga Dr., Brampton, ON L6Z 3M1			
SCALE: NONE	DRAWN BY: N.V.	CHECKED BY: T.B.	APPROVED BY: T.B.
	DATE: 09/20/24	DATE: 09/20/24	DATE: 09/20/24
CONTRACT No.	DWG No.	E4	REV 1



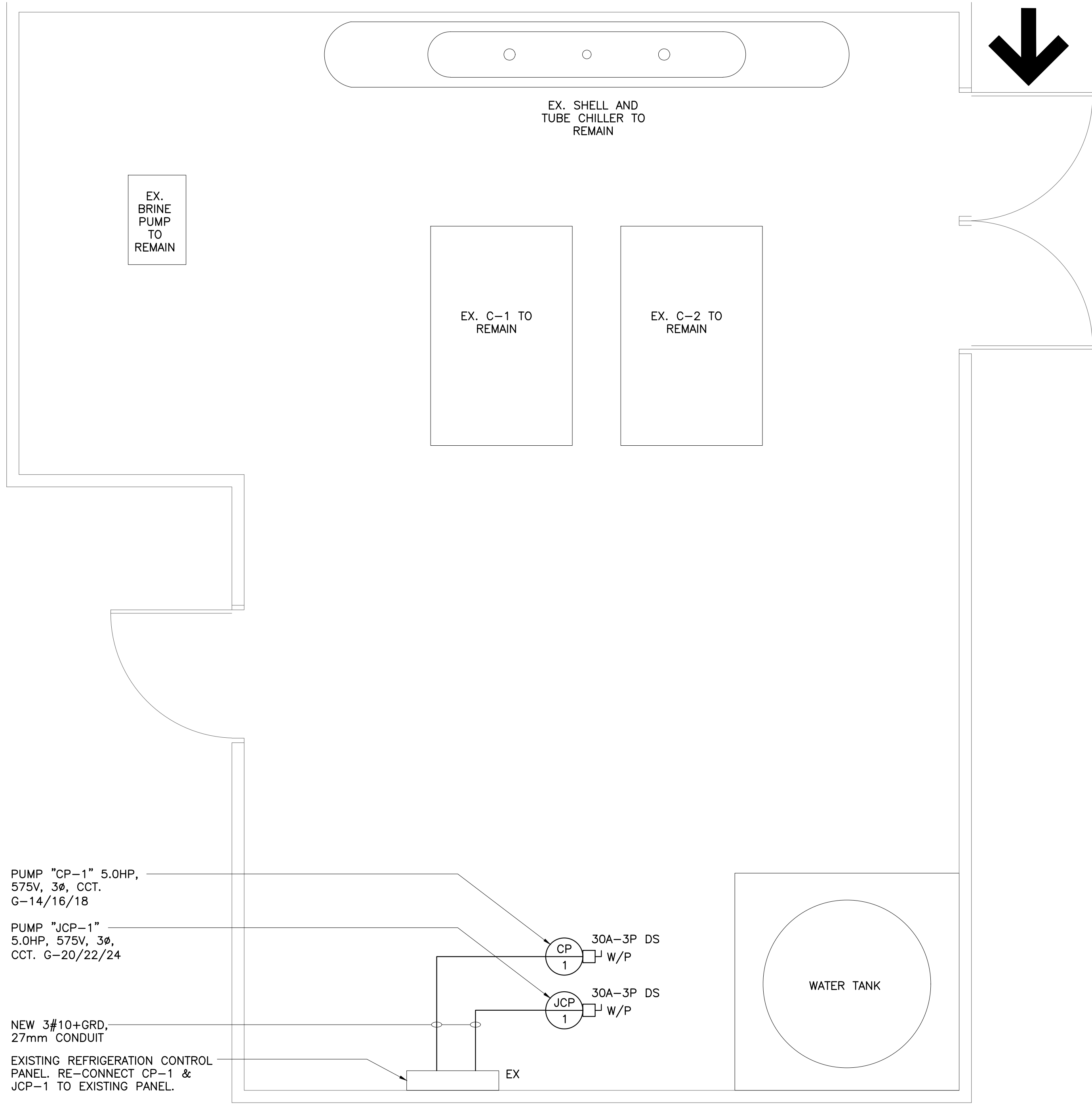
1 WATER METER ROOM - DEMOLITION  
E5 SCALE: 1:25



2 WATER METER ROOM - PROPOSED  
E5 SCALE: 1:25



3 REFRIGERATION ROOM - DEMOLITION  
E5 SCALE: 1:25

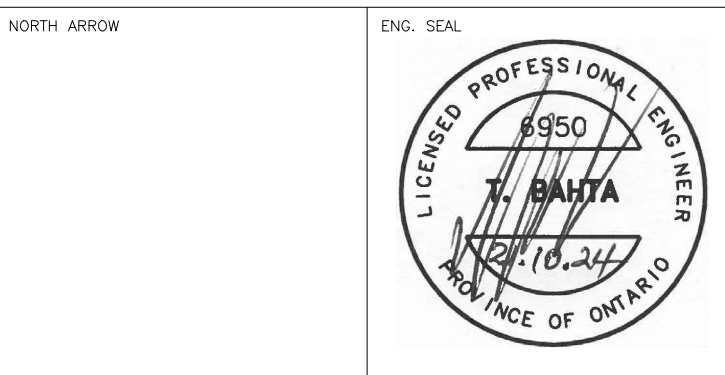


4 REFRIGERATION ROOM - PROPOSED  
E5 SCALE: 1:25



**Moon-Matz Ltd.**  
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2	03/31/20	ISSUED FOR TENDER	V.L. C.M.
1	10/01/24	ISSUED FOR PERMIT	N.V. C.M.
REV	DATE	DESCRIPTION	BY
ELECTRICAL WATER METER ROOM AND REFRIGERATION ROOM DEMOLITION AND PROPOSED			
TITLE: JIM ARCHDEKIN RECREATION CENTRE MECHANICAL AND ELECTRICAL UPGRADES			
292 Conestoga Dr., Brampton, ON L6Z 3M1			
SCALE: 1:25	DRAWN BY: DATE: 09/20/24	CHECKED BY: DATE: 09/20/24	APPROVED BY: DATE: 09/20/24
CONTRACT No.	DWG No.	E5	REV 1

EX. DH-1 C/W ACCESSORIES  
TO BE REMOVED & DISPOSED  
OF. REMOVE WIRING &  
CONDUIT, MAKE SAFE AND  
BACK TO SOURCE.

EX. EF-15 C/W ACCESSORIES TO  
BE REMOVED. REMOVE WIRING &  
CONDUIT, MAKE SAFE AND BACK TO  
SOURCE.

EX. EF-17 C/W ACCESSORIES TO  
BE REMOVED. REMOVE WIRING &  
CONDUIT, MAKE SAFE AND BACK TO  
SOURCE.

1 PART PLAN ARENA - DEMOLITION  
E6 SCALE: 1:50

1m 0 1m 2m  
#M50

NEW DEHUMIDIFIER DH-1  
3.0HP, 575V, 3Ø, CCT.  
L-13/15/17  
NEW 30A-3P DS  
W/P

NEW EF-15 1.5HP, 575V, 3Ø,  
CCT. L-20/22/24

NEW EF-15 COMBINATION MOTOR  
STARTER CCT. L-20/22/24  
3#10+GRD, 27mm CONDUIT

NEW EF-17 COMBINATION MOTOR  
STARTER CCT. L-20/22/24  
3#10+GRD, 27mm CONDUIT

NEW EF-17 1.5HP, 575V, 3Ø,  
CCT. L-26/28/30

NEW 3#10+GRD,  
27mm CONDUIT

2 PART PLAN ARENA - PROPOSED  
E6 SCALE: 1:50

1m 0 1m 2m  
#M50

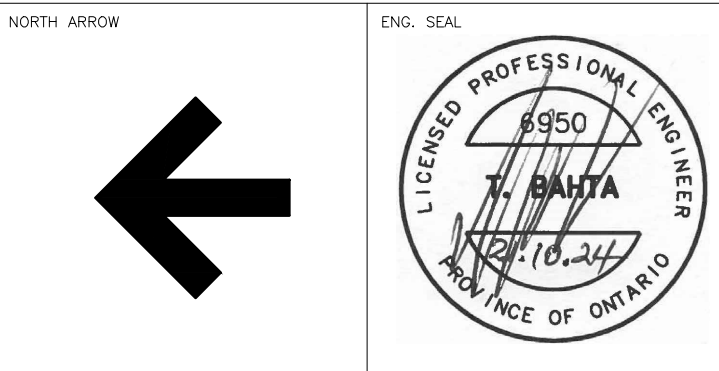
NOTES:

1. DEMOLISH EXISTING DEHUMIDIFIER  
C/W WRING/CONDUIT AS SHOWN.  
DISCONNECT AND REMOVE FROM  
ELECTRICAL AND MAKE SAFE.
2. DEMOLISH EXISTING EXHAUST FANS  
AND RELATED EQUIPMENT.  
DISCONNECT AND REMOVE FROM  
ELECTRICAL AND MAKE SAFE.

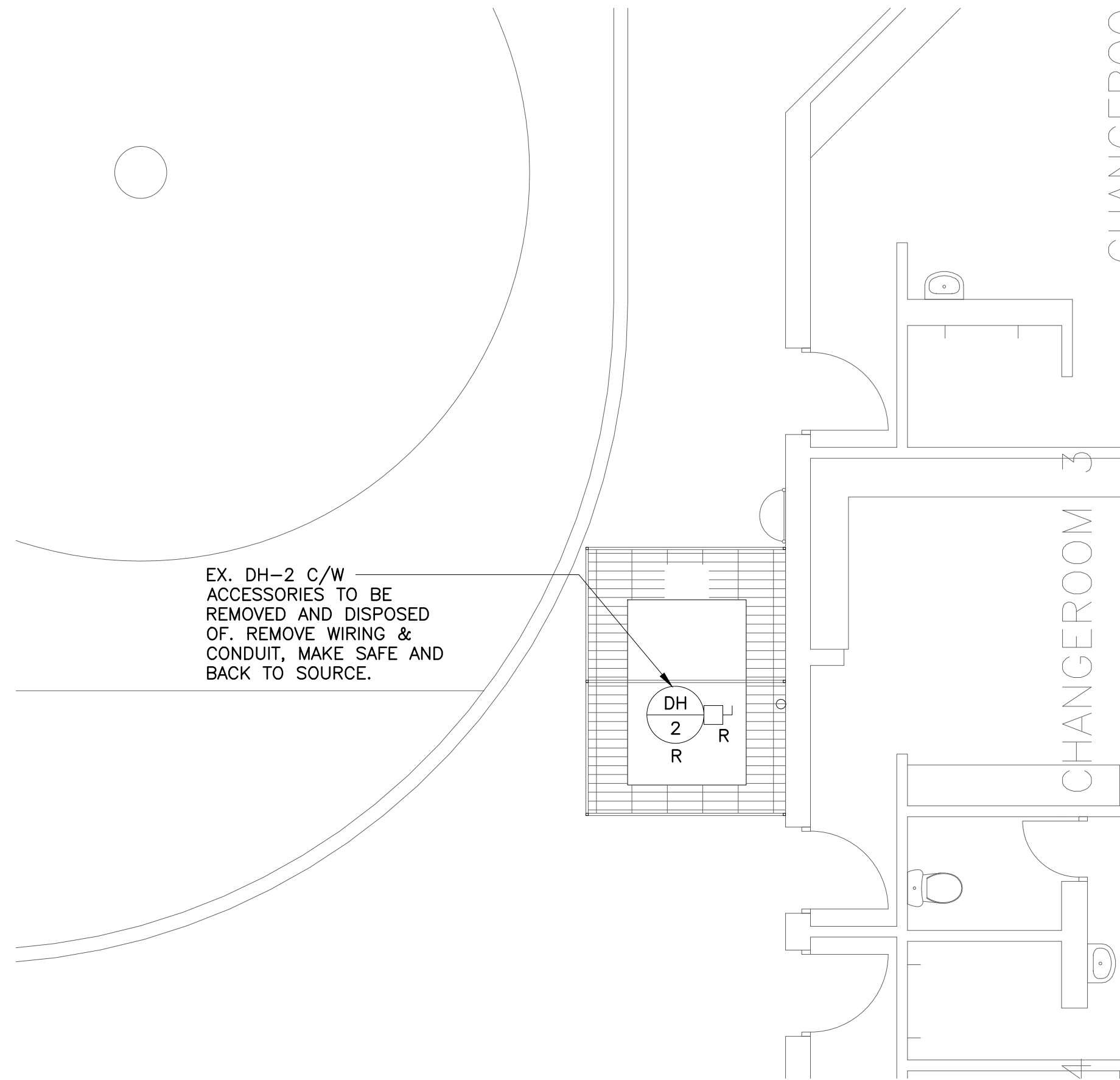
**Moon-Matz Ltd.**  
Consulting Engineers

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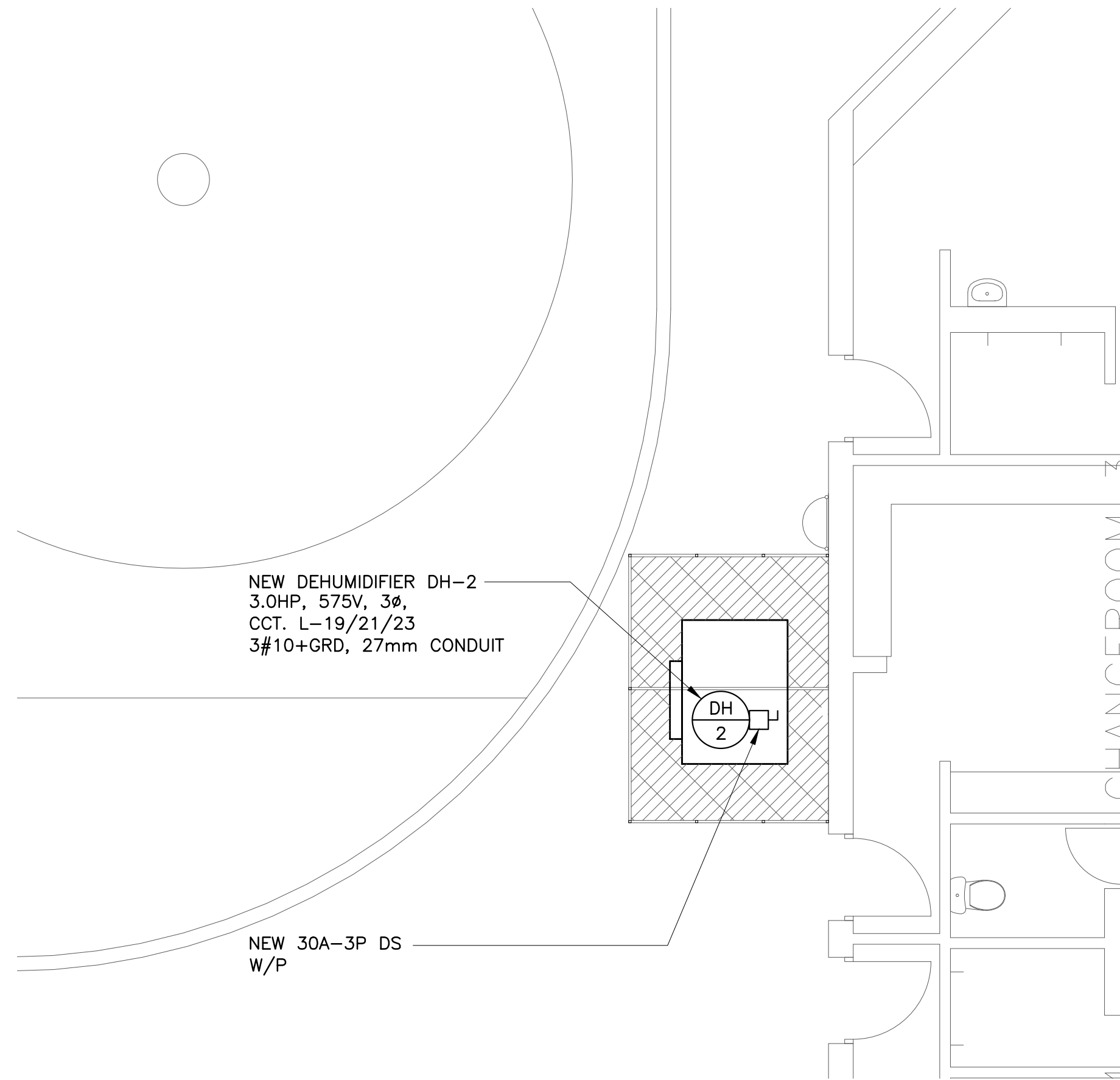
**BRAMPTON**  
FlowerCity  
brampton.ca



2	03/31/25	ISSUED FOR TENDER				V.L.	C.M.
1	10/01/24	ISSUED FOR PERMIT				N.V.	C.M.
REV	DATE	DESCRIPTION				BY	CHK
ELECTRICAL PART PLAN ARENA DEMOLITION AND PROPOSED							
TITLE							
JIM ARCHDEKIN RECREATION CENTRE MECHANICAL AND ELECTRICAL UPGRADES							
292 Conestoga Dr, Brampton, ON L6Z 3M1							
SCALE:	1:50	DRAWN BY: DATE:	N.V. 09/20/24	CHKD. C.M. DATE:	09/20/24	APPROV. C.M. DATE:	09/20/24
CONTRACT NO.				DWG NO.	E6		REV
						1	



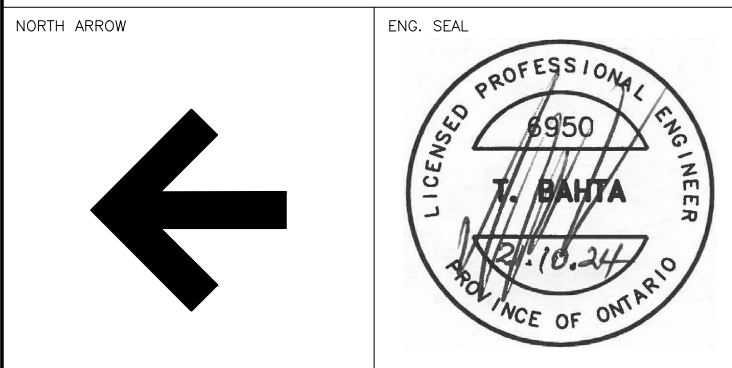
1 PART PLAN ARENA - DEMOLITION  
E7 SCALE: 1:50



2 PART PLAN ARENA - PROPOSED  
E7 SCALE: 1:50

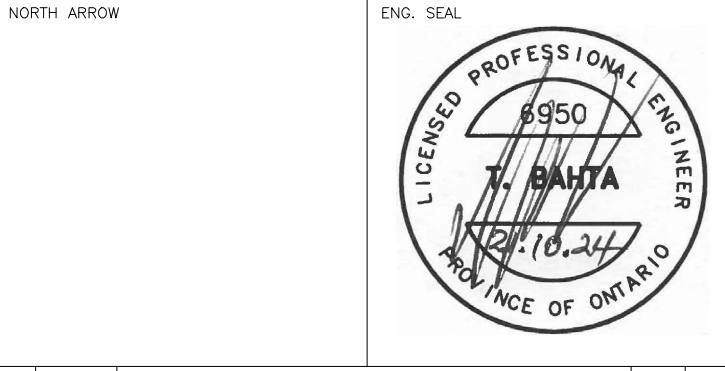
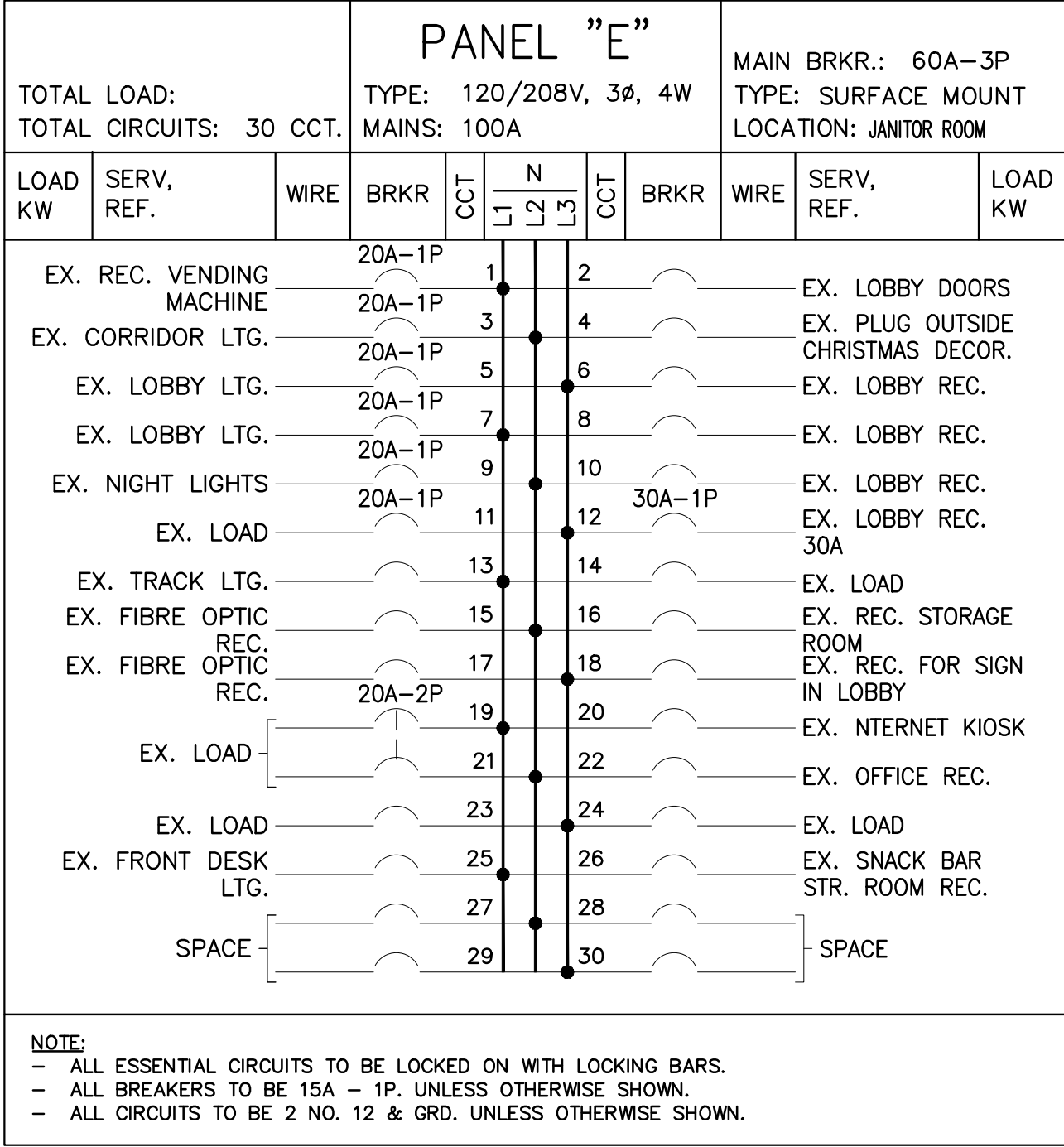
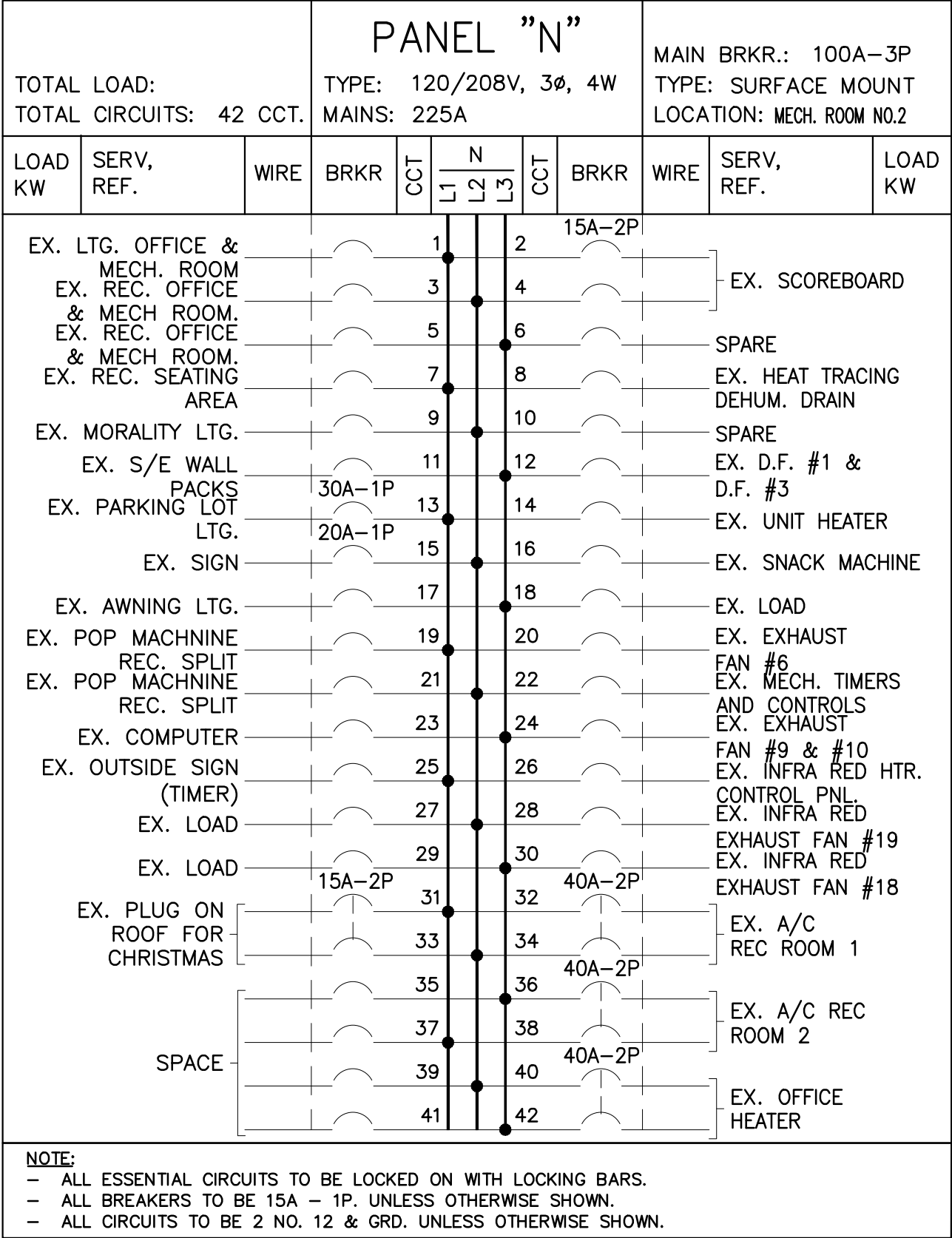
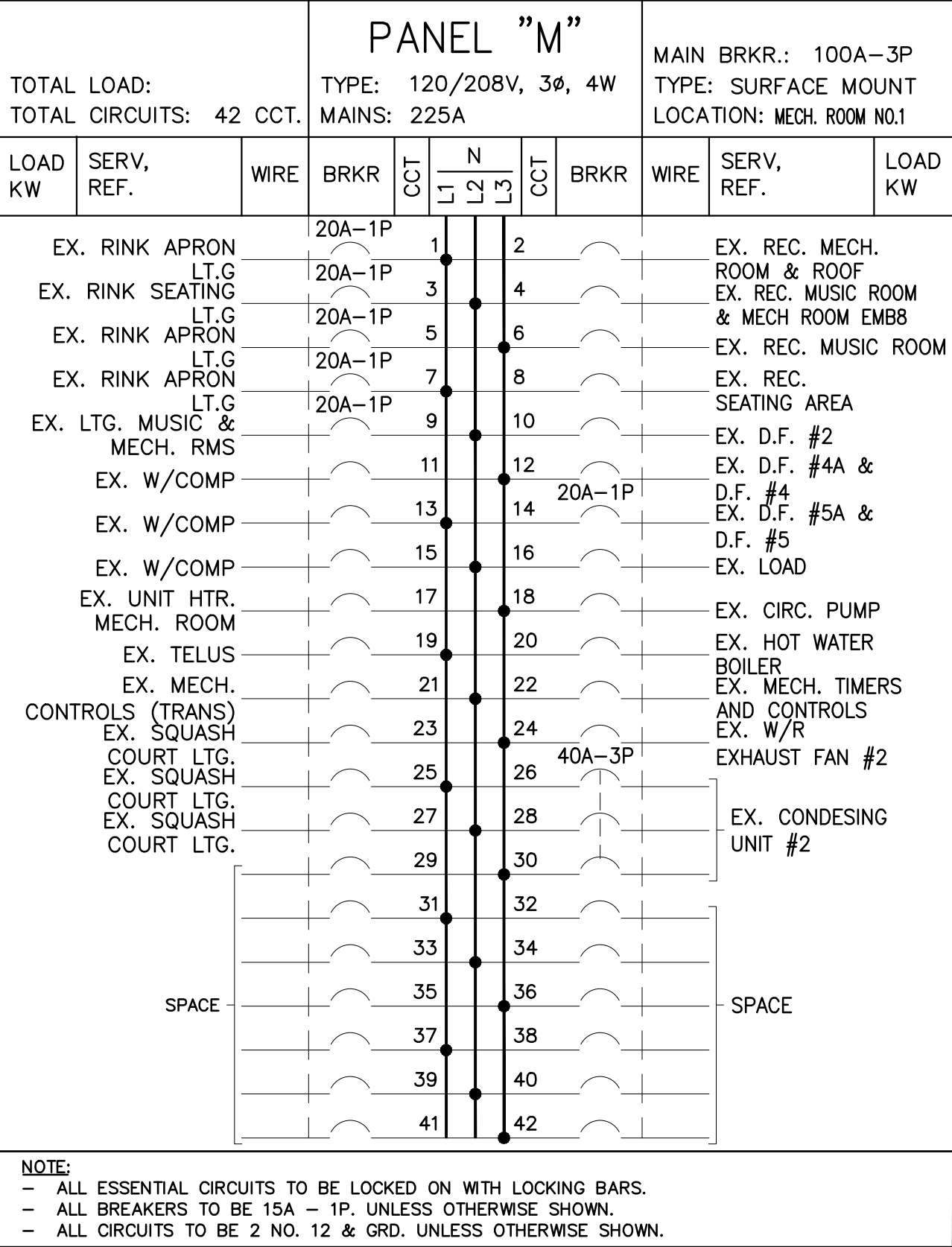
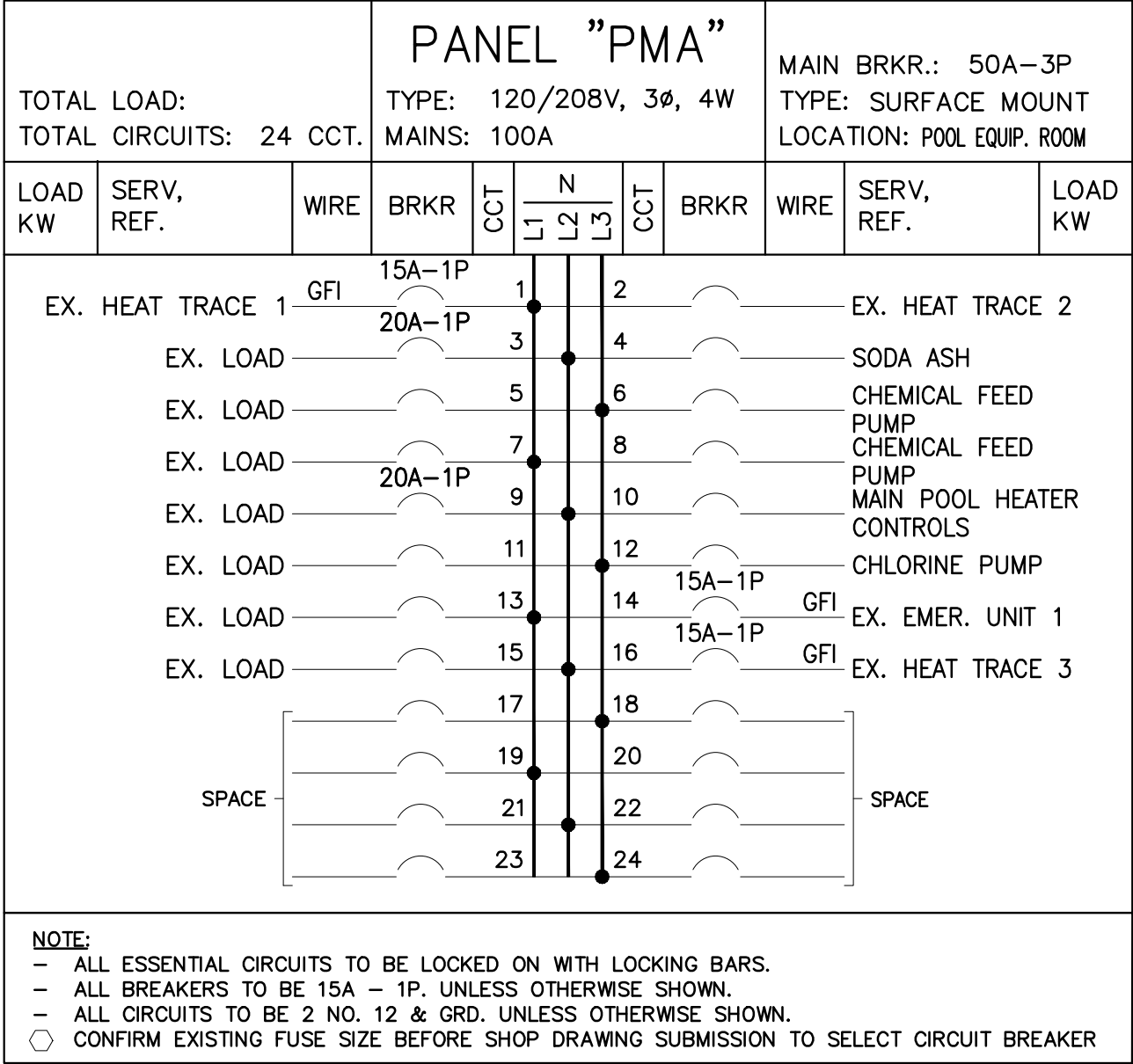
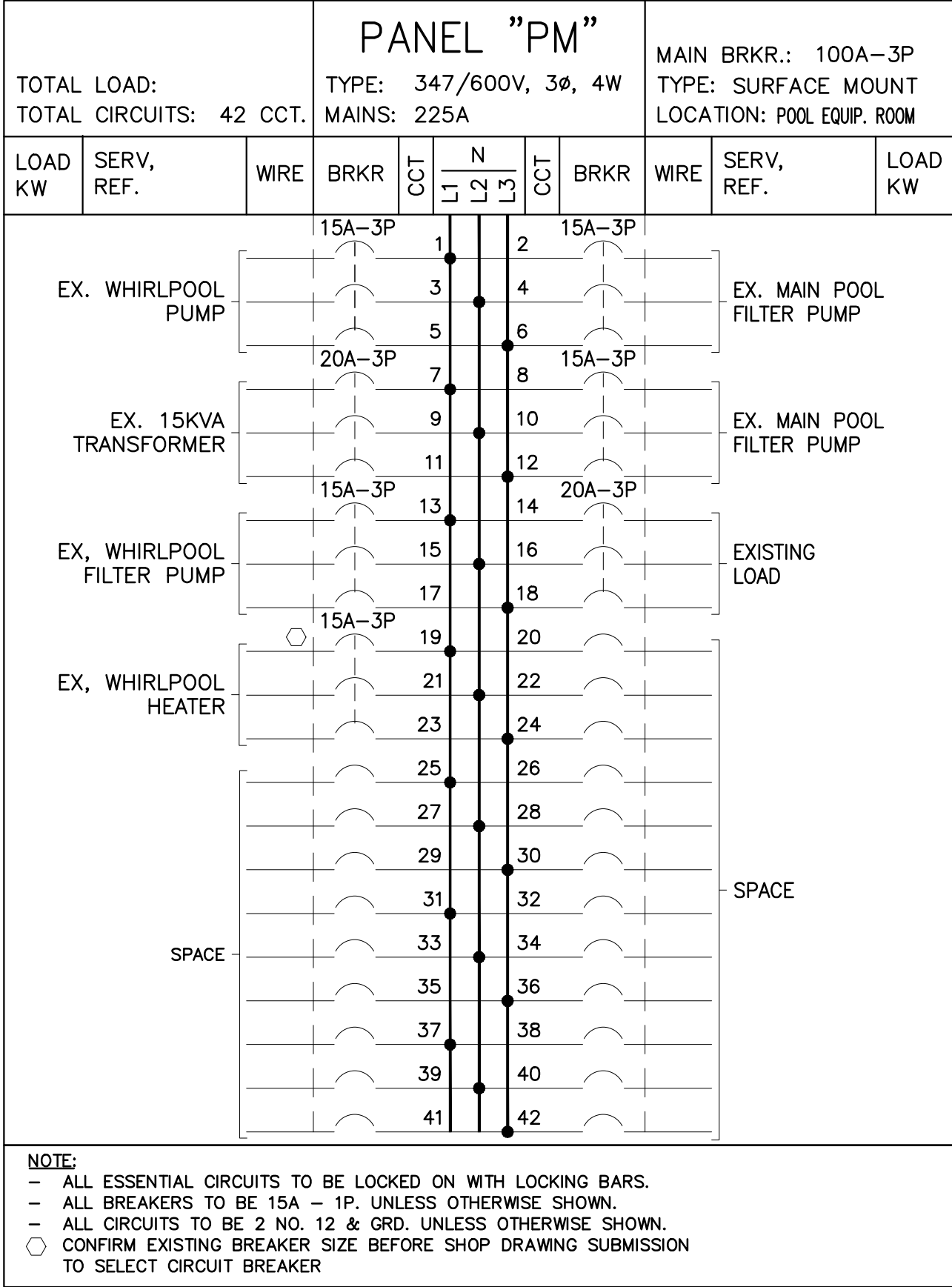
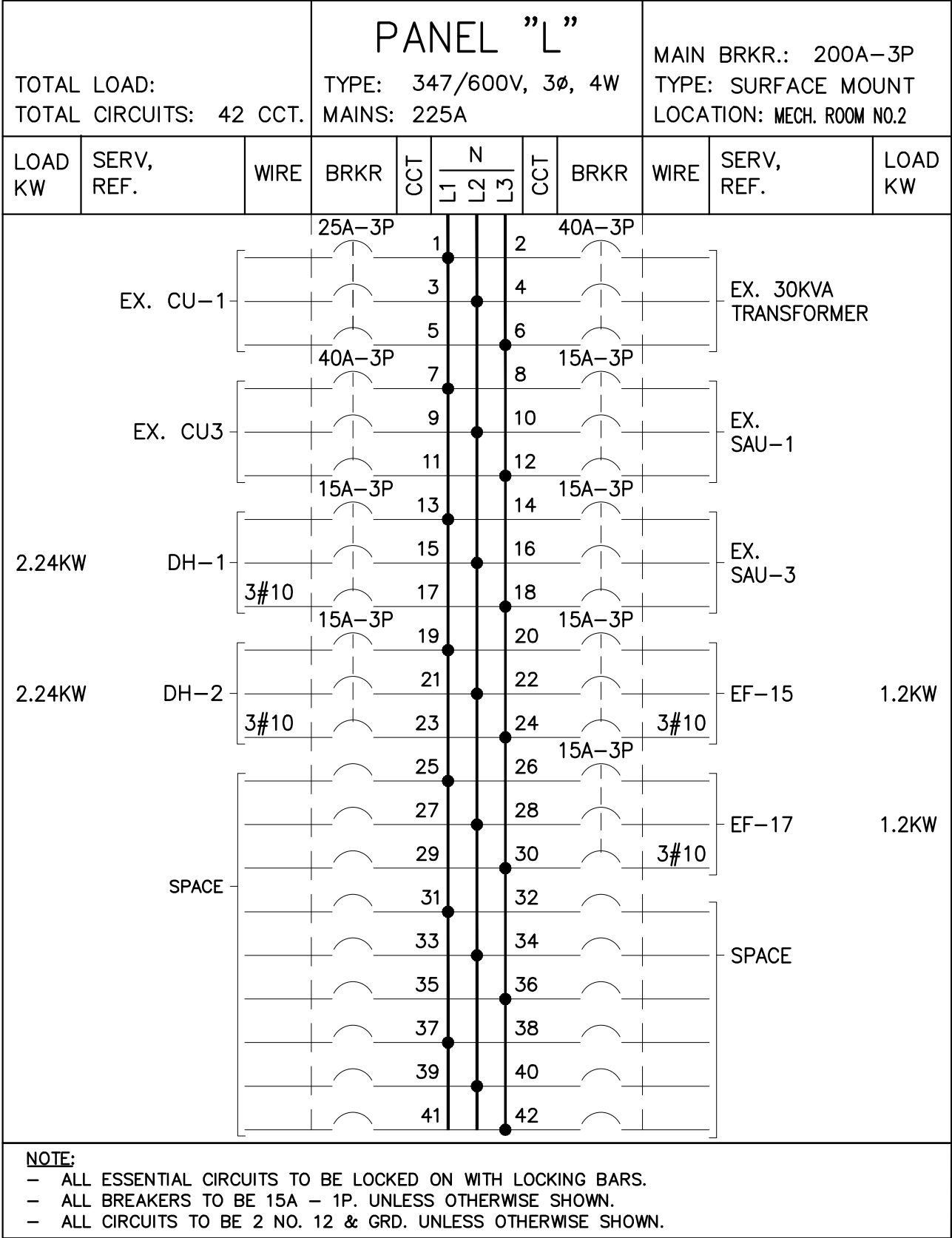
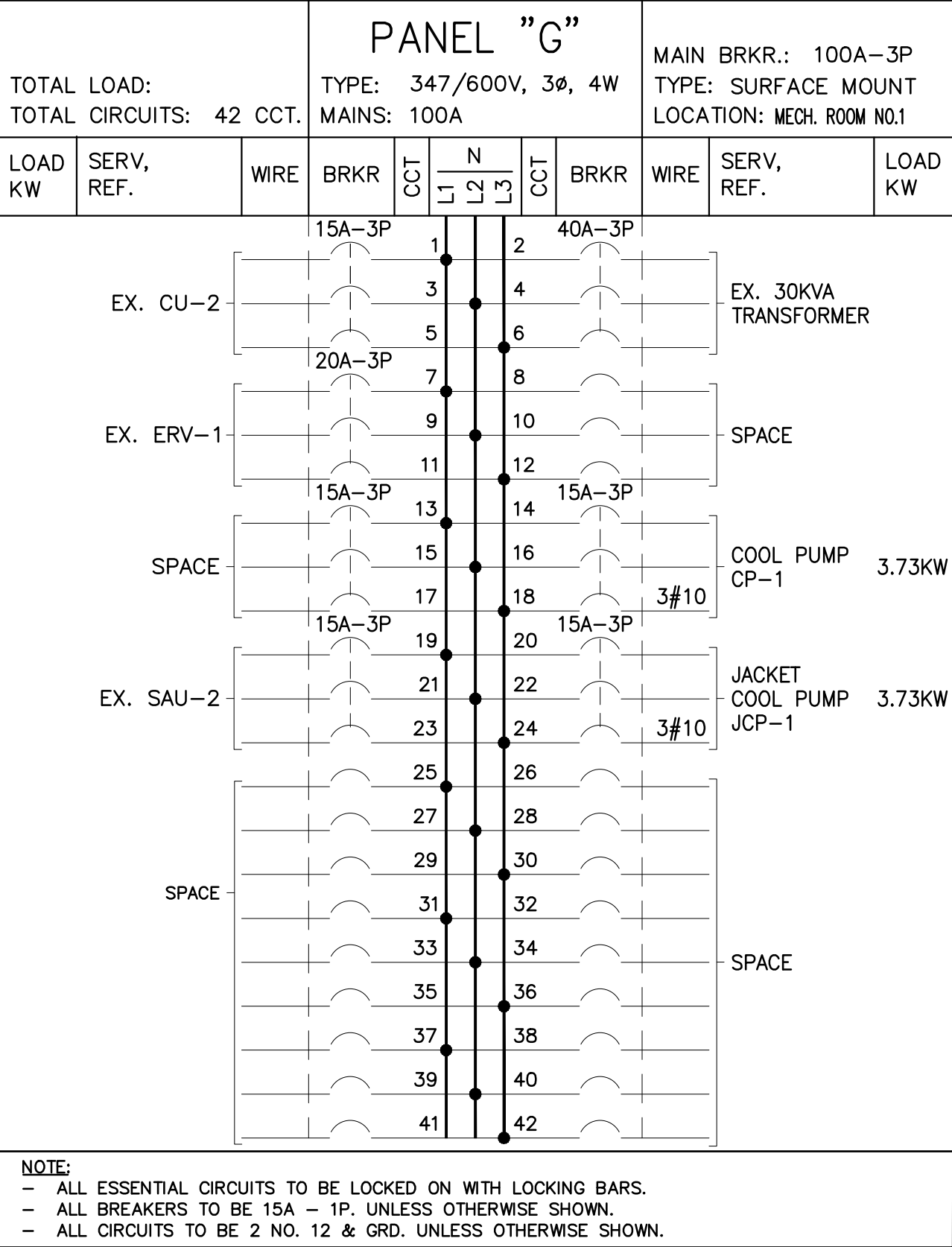
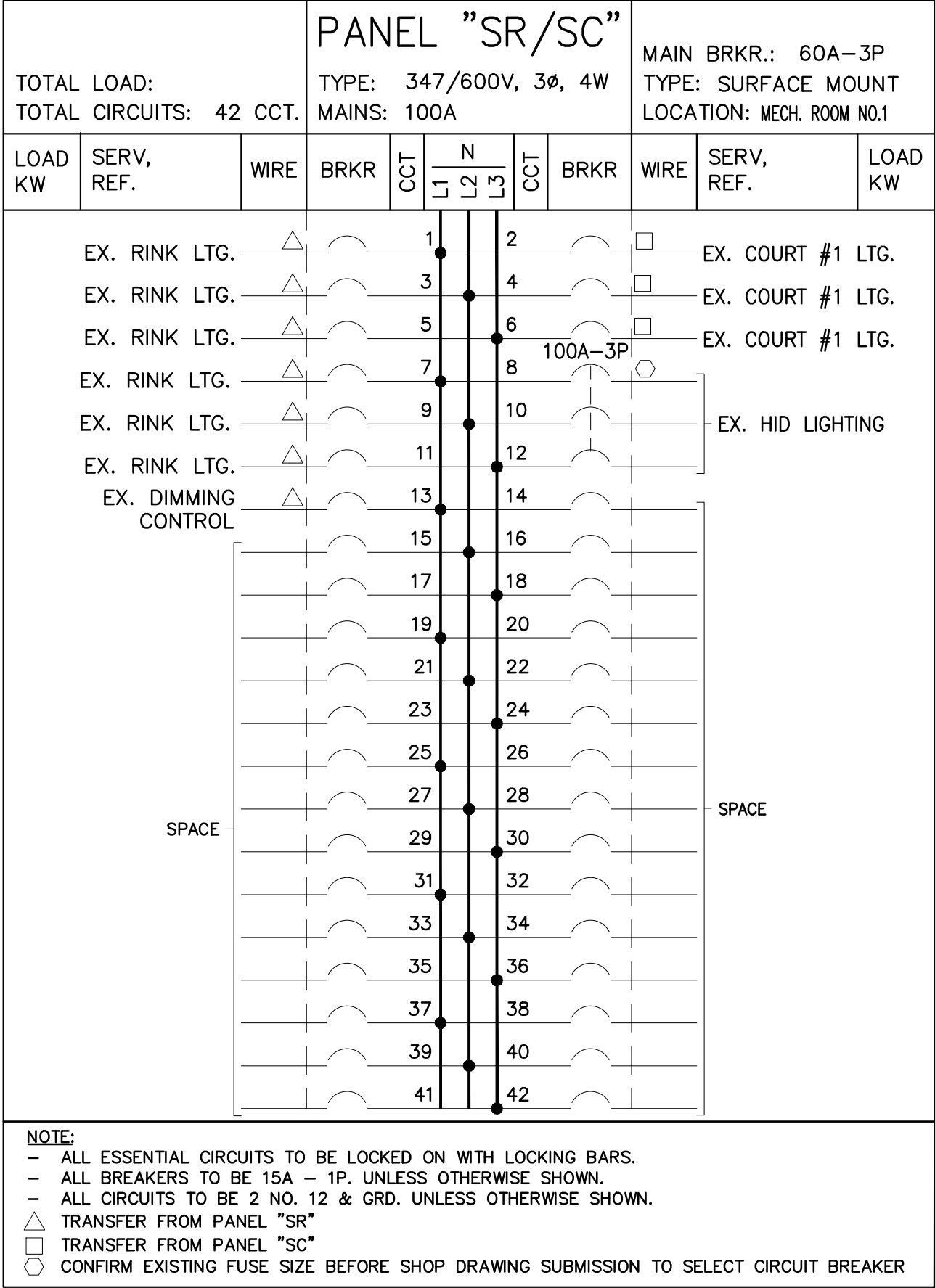


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2	09/21/24	ISSUED FOR TENDER	V.L. C.M.
1	10/01/24	ISSUED FOR PERMIT	N.V. C.M.
REV	DATE	DESCRIPTION	BY
ELECTRICAL PART PLAN ARENA DEMOLITION AND PROPOSED			
TITLE JIM ARCHDEKIN RECREATION CENTRE MECHANICAL AND ELECTRICAL UPGRADES			
292 Conestoga Dr., Brampton, ON L6Z 3M1			
SCALE:	1:50	DRAWN BY DATE: 09/20/24	CHCKD BY DATE: 09/20/24
CONTRACT No.		DWG No.	REV
		E7	1





2	03/31/20	ISSUED FOR TENDER	V.L. C.M.
1	10/01/24	ISSUED FOR PERMIT	N.V. C.M.
REV	DATE	DESCRIPTION	BY
ELECTRICAL PANEL SCHEDULES			
TITLE JIM ARCHDEKIN RECREATION CENTRE MECHANICAL AND ELECTRICAL UPGRADES			
292 Conestoga Dr., Brampton, ON L6Z 3M1			
SCALE:	NONE	DRAWN BY DATE: 09/20/24	CHKD. C.M. DATE: 09/20/24
CONTRACT No.		DWG No.	E8
			REV 1

# **T2025-141 - Mechanical Equipment & Power Distribution Replacement at Jim Archdekin Recreation Centre**

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Schedule of Prices

The Bidder hereby Bids and offers to enter into the Contract to provide all materials, labour and equipment necessary for the Project at the quoted unit and/or lump sum prices, all in accordance with the Proposal/Bid Document.

\* Denotes a "MANDATORY" field

Do not enter \$0.00 dollars unless you are providing the line item at zero dollars.

If the line item and/or table is "NON-MANDATORY" and you are not bidding on it, leave the table and/or line item blank. Do not enter a \$0.00 dollar value.

HST Information

Line Item	Question	Respond	
1	Is your Business HST registrant? (Yes/No)		*
2	If yes, provide your HST number. If not, explain why your Business is not HST registered.		*
3	Provide the full legal name of the Vendor with whom the City will enter into a Contract, if different than the Bidder submitting a Bid.		*

Base Price

To provide all materials, labour and equipment necessary for the Project, all in accordance with the Bid Document.

Construction Period Starts: May 01, 2025

Substantial performance: Aug 30, 2025

Description	Quantity	Unit of Measure	Unit Price *	Sub-Total
Base Bid	1	Lump Sum		
Subtotal:				

Contingency

Contingency amounts shown are only to be used for specific work and costs as approved by the Owner in writing. All unspent contingency amounts shall be deducted from the Contract and belong to the Owner.

Description	Quantity	Contingency	Total
CONTINGENCY	1	\$33,440.0000	\$ 33,440.00
Subtotal:			\$ 33,440.00

Summary Table

Bid Form	Amount
Base Price	
Contingency	\$ 33,440.00
Total Price (excluding HST):	

Bidders choosing to Upload References are required to submit the same information requested in the Bidder's Contractor Experience Record table below.

It is the Bidder's responsibility to make sure the uploaded file(s) is/are not defective or corrupted and is/are able to be opened and viewed by the Owner. If the attached file(s) cannot be opened or viewed, the Proposal/Bid may be disqualified.

**Bidders Contractor Experience Record**

Bidders are required to demonstrate experience in performing work similar and relevant to the scope described in this Bid Document over the last two year period. The City may contact references to confirm the Bidder's experience and general performance.

Line Item	Name of Tendering Authority	Address of Tendering Authority	Contact Name	Contact Number	Description of Work	Dollar Amount	Contract Duration	
1								*
2								*
3								
4								
5								

**Sub-Contractors**

The Bidder shall state all Subcontractor(s) and type of Work proposed to be used on this Contract for the approval of the Owner. Bidders shall not indicate "TBD" (To Be Determined) or "TBA" (To Be Announced) or similar wording. The Bidder shall state only one (1) subcontractor for each type of work. Any changes to the approved list of Subcontractors must be approved by the Owner prior to any work taking place.

**Subcontractors**

☐ By clicking here I confirm that there are no Subcontractor(s) and the Bidder shall perform the Contract with their **"OWN FORCES"**.

Trade	Subcontractor	Address	
			*

## Bidders Declaration

### Bidder's Declaration

The Bidder by submitting its Bid:

1. acknowledges that it has received all the documents making up the Bid Document listed in the Index and any and all Addenda issued in respect of the Bid Document and the Bidder has provided for compliance with the provisions of the all of the foregoing;
2. acknowledges and agrees that all issued Addenda form part of the Bid Document;
3. declares that it has carefully examined the locality and site of any proposed requirements under the Contract, as well as the Bid Document including any and all Addenda issued by the Owner;
4. acknowledges that quantities included in the Price Schedule are an estimate of the Owner's requirements and there is no guarantee that the full quantities of products or work will be required or purchased;
5. agrees it will execute whatever reductions in the work, and/or additional work as required at the unit prices quoted in its Bid, in strict conformity and in all respects with the requirements of the Bid Call, and the specifications, terms, conditions and agreements applicable to this Bid;
6. agrees to accept payment for the sums calculated in accordance with the actual measured quantities and unit prices quoted in the Price Schedule;
7. confirms that all prices submitted are in Canadian funds;
8. confirms that its prices include all taxes, duties, exchange, labour, charges, currency and freight in respect of all work to be performed under the Contract, except for HST;
9. agrees that if this Bid is accepted, and the Bidder is non-resident in Ontario or Canada, it shall obtain a GST/HST Registration Number prior to commencement of the work;
10. declares that this Bid is made without any connections, knowledge, comparison of figures or arrangements with any other person, including any partnership or corporation, making a Bid for the same requirements as stated in the Bid Call and is in all respects fair and without collusion or fraud;
11. declares that no person, including any partnership or corporation, or anyone other than the Bidder, has any interest in this Bid or in any Contract as may be awarded in respect of this Bid;
12. certifies that the Bidder is in full compliance with Section 6 of Ontario Regulation 429/07, Accessibility Standards for Customer Service, made under the Accessibility for Ontarians with Disabilities Act, 2005; and if requested, it will be able to provide written proof that all employees have been trained as required under the Act;
13. declares that it is not engaged in unresolved litigation with the Owner as of the date of submission of this Bid;
14. declares that this Bid is made in the Bidder's proper legal name and acknowledges that the Owner shall not be required to enter into a Contract awarded to the Bidder if the name of the contracting party in the Contract is different than the name of the Bidder in this Bid, but Owner may enter into a Contract in its sole and absolute discretion subject to correcting the Contract to reflect the proper legal name;
15. acknowledges and agrees that information contained in this Bid submitted to the Owner shall be subject to disclosure as may be required under the provisions of the Municipal Freedom of Information and Protection of Privacy Act (MFIPPA). Any confidentiality obligations of the Owner under the Bid Call are expressly subject to the obligations and requirements of MFIPPA now or hereafter in effect;
16. agrees that its Bid as submitted to the Owner shall become the property of the Owner;
17. the bid deposit, if required by the Bid Call, is in accordance with the requirements specified in the Bid Call and is submitted

electronically prior to or at the same time as submission of this Bid;

18. if the Bidder withdraws this Bid after Bid Closing and prior to award of the Contract in respect thereof, during the time that this Bid is open to acceptance as set out in this Bidder's Declaration, the amount of the deposit for this Bid shall be forfeited to the Owner; and

19. agrees (i) that this Bid is irrevocable after Bid Closing and shall continue to be open to acceptance after Bid Closing until the Contract is executed or until sixty (60) days after the Closing Date whichever first occurs, and the Owner may at any time within that period and without notice accept this Bid whether any other Bid has been previously accepted or not; and (ii) to enter into a contract with the Owner to perform the work described in the Bid Call, in accordance with the Bid Document and on its terms and conditions, which are expressly acknowledged and agreed to by the Bidder to be made part of the Contract, and the awarding by the Owner of the contract based on this Bid shall be an acceptance of Bid.



**By completing the information below and submitting the Proposal/Bid and this Bidder's Declaration it is understood that, on behalf of the Bidder as the Bidder's authorized officer, I have read, understood and agree to abide by the instructions, terms, conditions and specifications contained in this Bidder's Declaration and the Proposal/Bid Document and any Addenda issued in respect of the Proposal/Bid Document.**

By checking "NO" below, the Bidder declares that no actual, potential, or perceived conflict of interest exists or could arise in submitting this Proposal and declares that no member of the City Council, or any officer or employee of The Corporation of the City of Brampton is, or will become interested directly or indirectly as a contracting party or otherwise, in any Contract awarded in respect of this Proposal, or in the supplies, work or business to which any such Contract relates, or in any profits or benefit to be derived from any such Contract.

☒ Yes   ☐ No

The Bidder acknowledges and agrees that the addendum/addenda below form part of the Proposal/Bid Document.

Please check the box in the column "**I have reviewed this addendum**" below to acknowledge each of the addenda.

File Name	I have reviewed the below addendum and attachments (if applicable)	Pages
There have not been any addenda issued for this bid.		