



**Request for Proposals**  
**for**  
**Englehart Station Backup Generator Project**

Request for Proposals No.: RFP 2025 112

Issued: **Friday, December 5 2025**

Submission Deadline: **Friday, January 9, 2026 EST**

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## PART 1 - INVITATION AND SUBMISSION INSTRUCTIONS

### 1.1 Invitation to Proponents

#### 1.1.1 Invitation

This Request for Proposals (the “RFP”) is an invitation by Ontario Northland Transportation Commission (“ONTC”) to prospective proponents to submit proposals for **Englehart Station Backup Generator Project**, as further described in Section A of the RFP Particulars (Appendix B) (the “Deliverables”).

ONTC is an agency of the Province of Ontario that provides reliable and efficient transportation services to northern and rural communities. For over 120 years, the company has provided integrated and impactful transportation services including rail freight, passenger rail, motor coach transportation, rail repair, and remanufacturing services.

ONTC’s rail services are vital in maintaining a reliable supply chain in Northern Ontario by connecting freight customers to global economies. The forestry industry, mining operations, farming communities, and manufacturers count on ONTC’s services to deliver large volumes across vast distances. The company’s 675 miles of mainline track span throughout northeastern Ontario and northwestern Quebec.

ONTC motor coaches connect rural Ontario to major centres providing access to education, medical appointments, shopping, and seamless connections to other transportation providers. The Polar Bear Express passenger train connects Moosonee and Cochrane, Ontario, providing an all-season land link for Indigenous communities on the James Bay Coast.

Improving and repairing transportation equipment is also a large part of ONTC’s service offering. We remanufacture and repair locomotives, passenger rail cars, freight cars, and more. ONTC’s unique mechanical skillset attracts new business and secures skilled trades jobs in Northern Ontario.

ONTC makes provincial dollars reach further by creating innovative solutions that help drive economic growth sustainably, responsibly, and with future generations top of mind. Throughout the agency, modernization is underway with many exciting projects that will improve how we operate. ONTC employs over 1,000 people including Locomotive Engineers, Motor Coach Operators, skilled tradespeople, and business professionals. Employees work together to improve and deliver services that provide value to the regions served.

The Englehart Station is a facility located at 1 Railway Street, Englehart, ON. This building is a single-story structure with a basement that contains office spaces, a railway station, and a critical rail traffic control system. The rail traffic control system is currently backed up during power outages by a battery bank system, and a generator plug that connects to a portable power source. All other equipment in the building, including lighting, office computers, heating, and cooling are completely off during this time. To ensure employee comfort and building operation, backup power shall be provided for the whole building. It is recommended that a new permanent and automatic transfer switch be provided to back up the whole building.



### **1.1.2 Proponent Must Be Single Entity**

The proponent must be a single legal entity that, if selected, intends to enter into the contract with ONTC. If the proposal is being submitted jointly by two (2) or more separate entities, the proposal must identify only one (1) of those entities as the “proponent”. The proponent will be responsible for the performance of the Deliverables.

### **1.1.3 Bidding System Registration**

All proponents must have a vendor account with the electronic bidding system at: <https://www.merx.com/>. This will enable the proponent to download the solicitation document, to receive addenda email notifications, download addenda, and submit their proposal electronically through the bidding system.

## **1.2 RFP Contact**

For the purposes of this procurement process, the “RFP Contact” will be:

Nicole Laplante  
Procurement Contracts Specialist  
555 Oak Street East  
North Bay, ON P1B 4R7

Telephone: 705-472-4500 x588

Email: [nicole.laplante@ontarionorthland.ca](mailto:nicole.laplante@ontarionorthland.ca)

Proponents and their representatives are not permitted to contact any employees, officers, agents, elected or appointed officials, or other representatives of ONTC, other than the RFP Contact, concerning matters regarding this RFP. Failure to adhere to this rule may result in the disqualification of the proponent and the rejection of the proponent's proposal.

## **1.3 Accommodations for Proponents with Disabilities**

In accordance with the Ontario Human Rights Code, Ontarians with Disabilities Act, 2001 (ODA) and Accessibility for Ontarians with Disabilities Act, 2005 (AODA), ONTC will accommodate for a disability, ensuring full and equitable participation throughout the RFP process. If a proponent requires this RFP in a different format to accommodate a disability, the proponent must contact the RFP Contact as soon as possible and in any event prior to the Submission Deadline. The RFP in the different format will be issued only to the requesting proponent and all addenda will be issued in such different format only to the requesting proponent.

## **1.4 French Language Services**

In accordance with the French Language Services Act, R.S.O. 1990, c. F.32, and Ontario Regulation 544/22, ONTC is committed to providing equitable access to procurement opportunities in both official languages. While this RFP and associated documents are posted in English, a French version is available upon request. Interested parties may contact the RFP Contact to obtain a French copy.

## **1.5 Contract for Deliverables**

### 1.5.1 Type of Contract

The selected proponent will be required to enter into an agreement with ONTC for the provision of the Deliverables in the form attached as Appendix A to the RFP (the “Agreement”).

### 1.5.2 Term of Contract

The term of the Agreement will be in effect until the completion of the Deliverables.

## 1.6 RFP Timetable

### 1.6.1 Key Dates

Issue Date of RFP	Friday, December 5 2025
Virtual Site Visit / Pre-Bid Meeting	Wednesday, December 17, 2025 at 2:00:00 PM EST
Deadline for Questions	Monday, January 5 2026 at 2:00:00 PM EST
Deadline for Issuing Addenda	Wednesday, January 7, 2026 at 2:00:00 PM EST
Submission Deadline	Friday, January 9, 2026 at 2:00:00 PM EST
Anticipated Execution of Agreement	Monday, February 9, 2026
Irrevocability Period	Ninety (90) calendar days

The RFP timetable is tentative only and may be changed by ONTC at any time.

### 1.6.2 Site Visit / Pre-Bid Meeting (if applicable)

**A Mandatory Site Visit will be held via Teams Conference Call, on Wednesday, December 17, 2025 at 2:00:00 p.m. Proponents are required to complete the Site Visit Registration Form located at Appendix E, and return to Nicole Laplante no later than 4:00:00 p.m. on Tuesday, December 16, 2025.**

## 1.7 Submission Instructions

### 1.7.1 Submission of Proposals

Proposals must be submitted electronically through the bidding system at:

<https://www.merx.com/>

Submissions by other methods will not be accepted.

In the event of any technical issues, proponents should contact the bidding system’s technical support.

MERX	Customer Support
Phone	1-800-964-6379
Email	<a href="mailto:merx@merx.com">merx@merx.com</a>

The Technical Proposal shall be uploaded into the bidding system, in PDF format, and not have a security password. It is the proponent's sole responsibility to ensure all uploaded documents are not defective, corrupted, or blank and can be opened by ONTC. If the Technical Proposal cannot be downloaded by ONTC, the Proposal shall be rejected.

The Pricing Proposal shall be uploaded into the bidding system. **No pricing information shall be uploaded as part of the Technical Proposal as this is a two-envelope process.**

### **1.7.2 Proposals to Be Submitted on Time**

Proposals must be finalized and fully uploaded in the bidding system on or before the Submission Deadline. The time of receipt of proposals shall be determined by the bidding system web clock. Late submissions will not be accepted by the bidding system and will be disqualified as late.

Proponents are cautioned that the timing of submission is based on when the proposal is received by the bidding system, not when a proposal is submitted by a proponent. As transmission can be delayed due to file transfer size, transmission speed, or other technical factors, proponents should plan to submit proposals well in advance of the Submission Deadline to avoid submitting late due to technical issues. Proponents submitting near the Submission Deadline do so at their own risk.

The bidding system will send a confirmation email to the proponent advising when the proposal was submitted successfully. If you do not receive a confirmation email, contact the bidding system's technical support immediately.

### **1.7.3 Proposals to Be Submitted in Prescribed Format**

Proposal materials should be prepared and submitted in accordance with the instructions in the bidding system, including any maximum upload file size.

Documents should not be embedded within uploaded files, as the embedded files may not be accessible or evaluated.

### **1.7.4 Amendment of Proposals**

Proponents may amend their proposals prior to the Submission Deadline. However, the proponent is solely responsible for ensuring that the amended proposal is received by the bidding system by the Submission Deadline.

### **1.7.5 Withdrawal of Proposals**

Prior to the Submission Deadline, proponents may withdraw a submitted proposal through the bidding system.

### **1.7.6 Proposals Irrevocable after Submission Deadline**

Proposals shall be irrevocable for the Irrevocability Period, as specified in the RFP Timetable, running from the moment that the Submission Deadline passes.

[End of Part 1]

## **PART 2 - EVALUATION AND AWARD**

### **2.1 Stages of Evaluation**

ONTC will conduct the evaluation of proposals in the following stages:

### **2.2 Stage I - Mandatory Submission Requirements**

Stage I will consist of a review to determine which proposals comply with all of the mandatory submission requirements. Proposals that do not comply with all of the mandatory submission requirements as of the Submission Deadline will, subject to the express and implied rights of ONTC, be rejected. The mandatory submission requirements are listed in Section C of the RFP Particulars (Appendix B).

#### **2.2.1 No Amendment to Forms**

Other than inserting the information requested on the mandatory submission forms set out in the RFP, a proponent may not make any changes to any of the forms. Any proposal containing any such changes, whether on the face of the form or elsewhere in the proposal, may be disqualified.

### **2.3 Stage II - Evaluation**

Stage II will consist of the following two (2) sub-stages:

#### **2.3.1 Mandatory Technical Requirements**

ONTC will review the proposals to determine whether the mandatory technical requirements as set out in Section D of the RFP Particulars (Appendix B) have been met. Proposals that do not comply with all of the mandatory technical requirements will, subject to the express and implied rights of ONTC, be rejected.

#### **2.3.2 Non-Price Rated Criteria**

ONTC will evaluate each qualified proposal on the basis of the non-price rated criteria as set out under Initial Evaluation Criteria in Section F of the RFP Particulars (Appendix B).

### **2.4 Stage III - Pricing**

Stage III will consist of a scoring of the submitted pricing of each qualified proposal in accordance with the price evaluation method set out in Section G of the RFP Particulars (Appendix B). The evaluation of price will be undertaken after the evaluation of mandatory requirements and rated criteria has been completed.

In the event that a proponent's pricing appears to be abnormally low in relation to the Deliverables, ONTC may require the proponent to provide a detailed explanation of the pricing information to account for the low level of price and confirm that all requirements in respect of the Deliverables have been taken into account. If the proponent is unable to satisfactorily account for the abnormally low pricing, ONTC may reject the proposal. ONTC may also reject any proposal that contains unbalanced pricing. Pricing may be considered unbalanced where nominal or significantly understated prices are proposed for some elements of the Deliverables and inflated prices are proposed for other elements of the Deliverables. Unbalanced pricing includes, but is not limited to, "front-loaded" pricing which contains inflated pricing for Deliverables to be provided

or completed at the beginning of the contract, offset by understated pricing for Deliverables to be provided or completed later in the contract.

## **2.5 Selection of Top-Ranked Proponent**

After the completion of Stage III, all scores from Stage II and Stage III will be added together and proponents will be ranked based on their total scores. Subject to the reserved rights of ONTC, the top-ranked proponent will be selected to enter into the Agreement in accordance with the following section. In the event of a tie, the selected proponent will be the proponent with the highest score on the non-price rated criteria.

## **2.6 Notice to Proponent and Execution of Agreement**

Notice of selection by ONTC to the selected proponent shall be in writing. The selected proponent shall execute the Agreement in the form attached as Appendix A to this RFP and satisfy any other applicable conditions of this RFP, including the pre-conditions of award listed in Section E of the RFP Particulars (Appendix B), within fifteen (15) days of notice of selection. This provision is solely for the benefit of ONTC and may be waived by ONTC.

## **2.7 Failure to Enter into Agreement**

If a selected proponent fails to execute the Agreement or satisfy any pre-conditions of award within fifteen (15) days of notice of selection, ONTC may, without incurring any liability, proceed with the selection of another proponent and pursue all other remedies available to ONTC.

[End of Part 2]

## **PART 3 - TERMS AND CONDITIONS OF THE RFP PROCESS**

### **3.1 General Information and Instructions**

#### **3.1.1 RFP Incorporated into Proposal**

All of the provisions of this RFP are deemed to be accepted by each proponent and incorporated into each proponent's proposal. A proponent who submits conditions, options, variations, or contingent statements inconsistent with the terms set out in this RFP, including the terms of the Agreement in Appendix A, either as part of its proposal or after receiving notice of selection, may be disqualified. If a proponent is not disqualified despite such changes or qualifications, the provisions of this RFP, including the Agreement set out in Appendix A, will prevail over any such changes or qualifications in the proposal.

#### **3.1.2 Proponents to Follow Instructions**

Proponents should structure their proposals in accordance with the instructions in this RFP. Where information is requested in this RFP, any response made in a proposal should reference the applicable section numbers of this RFP.

#### **3.1.3 Proposals in English**

All proposals are to be in English only.

#### **3.1.4 No Incorporation by Reference**

The entire content of the proponent's proposal should be submitted in a fixed format, and the content of websites or other external documents referred to in the proponent's proposal, but not attached, will not be considered to form part of its proposal.

#### **3.1.5 Past Performance**

In the evaluation process, ONTC may consider the proponent's past performance or conduct on previous contracts with ONTC or other institutions.

#### **3.1.6 Information in RFP Only an Estimate**

ONTC and its advisers make no representation, warranty, or guarantee as to the accuracy of the information contained in this RFP or issued by way of addenda. Any quantities shown or data contained in this RFP or provided by way of addenda are estimates only and are for the sole purpose of indicating to proponents the general scale and scope of the Deliverables. It is the proponent's responsibility to obtain all the information necessary to prepare a proposal in response to this RFP.

#### **3.1.7 Proponents to Bear Their Own Costs**

The proponent will bear all costs associated with or incurred in the RFP process, including, without limitation, preparation and presentation of its proposal and if applicable, costs incurred for meeting attendance, interviews or demonstrations.

#### **3.1.8 Proposal to be Retained by ONTC**

ONTC will not return the proposal or any accompanying documentation submitted by a proponent.

### **3.1.9 No Guarantee of Volume of Work or Exclusivity of Contract**

ONTC makes no guarantee of the value or volume of work to be assigned to the selected proponent. The Agreement will not be an exclusive contract for the provision of the described Deliverables. ONTC may contract with others for goods and services the same as or similar to the Deliverables or may obtain such goods and services internally.

### **3.1.10 Trade Agreements**

Proponents should note that procurements falling within the scope of the Ontario-Quebec Trade and Co-operation Agreement, Canadian Free Trade Agreement, and Comprehensive Economic and Trade Agreement are subject to those trade agreements but that the rights and obligations of the parties will be governed by the specific terms of this RFP.

## **3.2 Communication after Issuance of RFP**

### **3.2.1 Proponents to Review RFP**

Proponents shall promptly examine all of the documents comprising this RFP, and

- (a) shall report any errors, omissions, or ambiguities; and
- (b) may direct questions or seek additional information

in writing by email to the RFP Contact on or before the Deadline for Questions. No such communications are to be sent or initiated through any other means. ONTC is under no obligation to provide additional information, and ONTC is not responsible for any information provided by or obtained from any source other than the RFP Contact or the bidding system. It is the responsibility of the proponent to seek clarification on any matter it considers to be unclear. ONTC shall not be responsible for any misunderstanding on the part of the proponent concerning this RFP or its process.

### **3.2.2 All New Information to Proponents by Way of Addenda**

This RFP may be amended only by addendum in accordance with this section. If ONTC, for any reason, determines that it is necessary to provide additional information relating to this RFP, such information will be communicated to all proponents by addendum posted in the bidding system. Each addendum forms an integral part of this RFP and may contain important information, including significant changes to this RFP. Proponents are responsible for obtaining all addenda issued by ONTC.

### **3.2.3 Post-Deadline Addenda and Extension of Submission Deadline**

If ONTC determines that it is necessary to issue an addendum after the Deadline for Issuing Addenda, ONTC may extend the Submission Deadline for a reasonable period of time.

### **3.2.4 Verify and Clarify**

When evaluating proposals, ONTC may request further information from the proponent or third parties in order to verify or clarify the information provided in the proponent's proposal. The response received by ONTC shall, if accepted by ONTC, form an integral part of the proponent's proposal.

### **3.3 Notification and Debriefing**

#### **3.3.1 Notification to Other Proponents**

Once the Agreement is executed by ONTC and a proponent, the other proponents may be notified directly in writing and shall be notified by public posting, on ONTC's website, of the outcome of the procurement process.

#### **3.3.2 Debriefing**

Proponents may request a debriefing after receipt of a notification of the outcome of the procurement process. All requests must be in writing to the RFP Contact and must be made within sixty (60) days of such notification. The RFP Contact will contact the proponent's representative to schedule the debriefing. Debriefings may occur by way of conference call or other remote meeting format as prescribed by ONTC.

#### **3.3.3 Procurement Protest Procedure**

Any proponent with concerns about the RFP process is required to attend a debriefing prior to proceeding with a protest.

If, after attending a debriefing, the proponent wishes to challenge the RFP process, it should provide written notice to the RFP Contact in accordance with applicable procurement protest procedures. The written notice must contain:

- (a) a clear statement as to which procurement the proponent wishes to challenge;
- (b) a clear explanation of the proponent's concerns with the procurement, including specifics as to why it disagrees with the procurement process or its outcome; and
- (c) the proponent's contact details, including name, telephone number, and email address.

ONTC will send an initial response to acknowledge receipt of the proponent's notice and indicate the date by which ONTC will provide the proponent with a formal response.

### **3.4 Conflict of Interest and Prohibited Conduct**

#### **3.4.1 Conflict of Interest**

For the purposes of this RFP, the term "Conflict of Interest" includes, but is not limited to, any situation or circumstance where:

- (a) in relation to the RFP process, the proponent has an unfair advantage or engages in conduct, directly or indirectly, that may give it an unfair advantage, including, but not limited to:
  - (i) having or having access to confidential information of ONTC in the preparation of its proposal that is not available to other proponents;
  - (ii) having been involved in the development of the RFP, including having provided advice or assistance in the development of the RFP;



- (iii) receiving advice or assistance in the preparation of its response from any individual or entity that was involved in the development of the RFP;
  - (iv) communicating with any person with a view to influencing preferred treatment in the RFP process (including, but not limited to, the lobbying of decision-makers involved in the RFP process); or
  - (v) engaging in conduct that compromises, or could be seen to compromise, the integrity of the open and competitive RFP process or render that process non-competitive or unfair; or
- (b) in relation to the performance of its contractual obligations under a contract for the Deliverables, the proponent's other commitments, relationships, or financial interests:
  - (i) could, or could be seen to, exercise an improper influence over the objective, unbiased, and impartial exercise of its independent judgement; or
  - (ii) could, or could be seen to, compromise, impair, or be incompatible with the effective performance of its contractual obligations.

### **3.4.2 Disqualification for Conflict of Interest**

ONTC may disqualify a proponent for any conduct, situation, or circumstances, determined by ONTC, in its sole and absolute discretion, to constitute a Conflict of Interest as defined above.

An existing supplier of ONTC may be precluded from participating in the RFP process in instances where ONTC has determined that the supplier has a competitive advantage that cannot be adequately addressed to mitigate against unfair advantage. This may include, without limitation, situations in which an existing supplier is in a position to create unnecessary barriers to competition through the manner in which it performs its existing contracts, or situations where the incumbent fails to provide the information within its control or otherwise engages in conduct obstructive to a fair competitive process.

### **3.4.3 Disqualification for Prohibited Conduct or Breach**

ONTC may disqualify a proponent, rescind a notice of selection, or terminate a contract subsequently entered into if ONTC determines in its sole and absolute discretion that the proponent has engaged in any conduct prohibited by this RFP or has otherwise breached the terms of the of the RFP.

### **3.4.4 Prohibited Proponent Communications**

Proponents must not engage in any communications that could constitute a Conflict of Interest and should take note of the Conflict of Interest declaration set out in the Submission Form (Appendix C).

### **3.4.5 Proponent Not to Communicate with Media**

Proponents must not, at any time directly or indirectly, communicate with the media in relation to this RFP or any agreement entered into pursuant to this RFP without first obtaining the written permission of the RFP Contact. Further, proponents must not make any media release, social media or Internet post, public announcement or public disclosure (whether for publication in the press, on the radio, television, internet or any other medium) that relates to the RFP process, the

solicitation documents or the Deliverables or any matters related thereto, without the prior written consent of ONTC.

### **3.4.6 No Lobbying**

Proponents must not, in relation to this RFP or the evaluation and selection process, engage directly or indirectly in any form of political or other lobbying whatsoever to influence the selection of the selected proponent(s).

### **3.4.7 Illegal or Unethical Conduct**

Proponents must not engage in any illegal business practices, including activities such as bid-rigging, price-fixing, bribery, fraud, coercion, or collusion. Proponents must not engage in any unethical conduct, including lobbying, as described above, or other inappropriate communications; offering gifts to any employees, officers, agents, elected or appointed officials, or other representatives of ONTC; deceitfulness; submitting proposals containing misrepresentations or other misleading or inaccurate information; or any other conduct that compromises or may be seen to compromise the competitive process provided for in this RFP.

### **3.4.8 Supplier Suspension**

ONTC may suspend a supplier from participating in its procurement processes for prescribed time periods based on past performance or based on inappropriate conduct, including, but not limited to, the following:

- (a) illegal or unethical conduct as described above;
- (b) the refusal of the supplier to honour its submitted pricing or other commitments;
- (c) engaging in litigious conduct, bringing frivolous or vexatious claims in connection with ONTC's procurement processes or contracts, or engaging in conduct obstructive to a fair competitive process; or
- (d) any conduct, situation, or circumstance determined by ONTC, in its sole and absolute discretion, to have constituted an undisclosed Conflict of Interest.

In advance of a decision to suspend a supplier, ONTC will notify the supplier of the grounds for the suspension and the supplier will have an opportunity to respond within a timeframe stated in the notice. Any response received from the supplier within that timeframe will be considered by ONTC in making its final decision.

## **3.5 Confidential Information**

### **3.5.1 Confidential Information of ONTC**

All information provided by or obtained from ONTC in any form in connection with this RFP either before or after the issuance of this RFP:

- (a) is the sole property of ONTC and must be treated as confidential;
- (b) is not to be used for any purpose other than replying to this RFP and the performance of the Agreement;

- (c) must not be disclosed without prior written authorization from ONTC; and
- (d) must be returned by the proponent to ONTC immediately upon the request of ONTC.

Each proponent shall be responsible for any breach of the provisions of this section by any person to whom it discloses ONTC confidential information.

### **3.5.2 Confidential Information of Proponent**

A proponent should identify any information in its proposal or any accompanying documentation supplied in confidence for which confidentiality is to be maintained by ONTC. The confidentiality of such information will be maintained by ONTC, except as otherwise required by law or by order of a court or tribunal. Proponents are advised that their proposals will, as necessary, be disclosed on a confidential basis to advisers retained by ONTC to advise or assist with the RFP process, including the evaluation of proposals. If a proponent has any questions about the collection and use of personal information pursuant to this RFP, questions are to be submitted to the RFP Contact.

## **3.6 Reserved Rights and Limitation of Liability**

### **3.6.1 Reserved Rights of ONTC**

ONTC reserves the right to:

- (a) make public the names of any or all proponents;
- (b) make changes, including substantial changes, to this RFP provided that those changes are issued by way of addendum in the manner set out in this RFP;
- (c) request written verification or clarification from any proponent and incorporate a proponent's response to that request for clarification into the proponent's proposal;
- (d) assess a proponent's proposal on the basis of: (i) a financial analysis determining the actual cost of the proposal when considering factors including quality, service, price, and transition costs arising from the replacement of existing goods, services, practices, methodologies, and infrastructure (howsoever originally established); and (ii) in addition to any other evaluation criteria or considerations set out in this RFP, consider any other relevant information that arises during this RFP process;
- (e) reject a proposal that contains abnormally low or unbalanced pricing;
- (f) waive formalities and accept proposals that substantially comply with the requirements of this RFP;
- (g) verify with any proponent or with a third party any information set out in a proposal;
- (h) check references other than those provided by any proponent;
- (i) disqualify a proponent, rescind a notice of selection, or terminate a contract subsequently entered into if the proponent has engaged in any conduct that breaches the process rules or otherwise compromises or may be seen to compromise the competitive process;

- (j) select a proponent other than the proponent whose proposal reflects the lowest cost to ONTC;
- (k) cancel this RFP process at any stage;
- (l) cancel this RFP process at any stage and issue a new RFP for the same or similar deliverables;
- (m) accept any proposal in whole or in part; or
- (n) reject any or all proposals;

and these reserved rights are in addition to any other express rights or any other rights that may be implied in the circumstances.

### **3.6.2 Limitation of Liability**

By submitting a proposal, each proponent agrees that

- (a) neither ONTC nor any of its employees, officers, agents, elected or appointed officials, advisors, or representatives will be liable, under any circumstances, for any claim arising out of this RFP process including, but not limited to, costs of preparation of the proposal, loss of profits, loss of opportunity, or for any other claim; and
- (b) the proponent waives any right to or claim for any compensation of any kind whatsoever, including claims for costs of preparation of the proposal, loss of profit, or loss of opportunity by reason of ONTC's decision to not accept the proposal submitted by the proponent, to enter into an agreement with any other proponent, or to cancel this RFP process, and the proponent shall be deemed to have agreed to waive such right or claim.

### **3.7 Governing Law and Interpretation**

These Terms and Conditions of the RFP Process (Part 3):

- (a) are intended to be interpreted broadly and independently (with no particular provision intended to limit the scope of any other provision);
- (b) are non-exhaustive and shall not be construed as intending to limit the pre-existing rights of ONTC; and
- (c) are to be governed by and construed in accordance with the laws of the Province of Ontario and the federal laws of Canada applicable therein and the courts of the Province of Ontario shall have exclusive jurisdiction to entertain any action or proceeding based on, relating to or arising from this RFP.

### **3.8 Power of Legislative Assembly**

No provision of this RFP is intended to operate, nor shall any such provision have the effect of operating, in any way, that would interfere with or otherwise fetter the discretion of the Legislative Assembly of Ontario in the exercise of its legislative powers.

[End of Part 3]

## **APPENDIX A - FORM OF AGREEMENT**

The Agreement for Deliverables will be the CCDC 2 - 2020 - Supplementary Conditions, as attached to this Appendix A.

AMENDMENTS TO THE AGREEMENT BETWEEN OWNER AND CONTRACTOR

**1. ARTICLE A-1 THE WORK**

- 1.1 In paragraph 1.1, delete the words “and for which” and “is acting as and hereinafter called the “*Consultant*””.
- 1.2 Delete paragraph 1.3 in its entirety and replace it with the following:
- “1.3 commence the *Work* by the 2nd day of June in the year 2026 and, subject to adjustment in *Contract Time* as provided for in the *Contract Documents*, attain *Substantial Performance of the Work* by the 16th day of September in the year 2026, and attain *Ready-for-Takeover* by the 30th day of September in the year 2026.”

**2. ARTICLE A-4 CONTRACT PRICE**

- 2.1 Delete paragraph 4.4 and replace it with the following:
- “The *Contract Price* shall remain fixed for the duration of the *Contract Time*, subject only to adjustments as provided for in the *Contract Documents*. For certainty, the *Contractor* assumes all risks in connection with cost increases for *Products*, labour, and *Construction Equipment* prescribed by the *Contract Documents* for the performance of the *Work*, and the *Contractor* assumes all responsibility for liabilities and additional costs that may arise as a result of the *Contractor’s* inclusion of any *Product*, *Construction Equipment*, *Supplier*, or *Subcontractor* in its calculation of the *Contract Price*.”

**3. ARTICLE A-5 PAYMENT**

- 3.1 Delete paragraph 5.1 in its entirety, including all subparagraphs thereunder and replace it with the following:
- “5.1 Subject to the provisions of the *Contract Documents* and the *Construction Act*, the *Owner* shall:
- .1 make progress payments to the *Contractor* on account of the *Contract Price* when due together with such *Value Added Taxes* as may be applicable to such payments,
  - .2 upon *Substantial Performance of the Work*, as jointly certified by the *Owner* and the *Contractor*, and upon the expiry of the holdback period that follows the publication of the certificate of *Substantial Performance of the Work*, as stipulated in the *Construction Act*, there being no claims for lien registered against the title to the *Place of the Work* and no written notices of lien delivered to the *Owner*, pay the *Contractor* the unpaid balance of the holdback, together with such *Value Added Taxes* as may be applicable to such payment, less any amount stated in any Notice of Non-Payment that is published by the *Owner* in accordance with the *Construction Act*, and
  - .3 after *Ready-for-Takeover* has been achieved in accordance with the *Contract Documents* and the *Work* is complete, there being no claims for lien registered against the title to the *Place of the Work* and no written notices of lien delivered to the *Owner*, pay the *Contractor* the unpaid balance of the *Contract Price* in accordance with GC 5.5. – FINAL PAYMENT, together with such *Value Added Taxes* as may be applicable to such payment.”

- 3.2 Delete paragraph 5.2, including all subparagraphs thereunder in its entirety and replace it with the following:

“5.2 Interest on late payments, if any, will be in accordance with the *Construction Act*.”

**4. ARTICLE A-6 RECEIPT OF AND ADDRESSES FOR NOTICES IN WRITING**

- 4.1 Delete the text of ARTICLE A-6 RECEIPT OF AND ADDRESSES FOR NOTICES IN WRITING (retaining the provisions setting out the addresses of the Owner, Contractor and Consultant) and replace it with the following:
- “6.1 *Notices in Writing* between the parties or between them shall be considered to have been received by the addressee on the date of receipt if delivered by hand or by commercial courier during normal business hours or if sent during normal business hours by e-mail during the transmission of which no indication of failure of receipt is communicated to the sender, and addressed as set out below. Such *Notices in Writing*

will be deemed to be received by the addressee on the next *Working Day* if sent by e-mail after normal business hours or if sent by overnight commercial courier. Such *Notices in Writing* will be deemed to be received by the addressee on the fifth *Working Day* following the date of mailing, if sent by pre-paid registered post, when addressed as set out below. An address for a party may be changed by *Notice in Writing* to the other party setting out the new address in accordance with this article."

## **5. ARTICLE A-9 CONFLICT OF INTEREST**

5.1 Add new Article A-9 as follows:

### **"ARTICLE A-9 CONFLICT OF INTEREST**

- 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*."

## **6. ARTICLE A-10 TIME OF THE ESSENCE / LIQUIDATED DAMAGES**

6.1 Add new Article A-10 as follows:

### **"ARTICLE A-10 TIME OF THE ESSENCE/LIQUIDATED DAMAGES as follows:**

- 10.1 It is agreed that one of the reasons the *Contractor* was selected by the *Owner* for this *Contract* is the *Contractor's* representation and warranty that it will attain *Substantial Performance of the Work and Ready-for-Takeover* within the *Contract Time* stated in Article A-1.3 of this *Contract*. The *Contractor* acknowledges that it has been advised by the *Owner* that it is critical to the *Owner* that *Substantial Performance of the Work and Ready-for-Takeover* is achieved within the *Contract Time*. The *Contractor* agrees that time is of the essence in the performance of the *Contractor's* obligations under this *Contract*.
- 10.2 The *Contractor* further acknowledges its understanding that the *Owner* is responsible and must account to the Government of Ontario, its customers and passengers and the residents of Northern Ontario. A failure by the *Contractor* to attain *Substantial Performance of the Work and Ready-for-Takeover* within the *Contract Time* will result in damages to the *Owner* and to the Government of Ontario, its customers and passengers and the residents and businesses in Northern Ontario, which would be difficult or impractical to quantify but would nevertheless have a significant negative impact on the *Owner* and its ability to provide the services the *Owner* is obliged to provide to the residents and businesses in Northern Ontario.
- 10.3 Given the significance of the requirement for the *Contractor* to achieve *Substantial Performance of the Work and Ready-for-Takeover*, as described in Article A-10.2, the *Contractor* further acknowledges and agrees that, without limiting the *Owner's* entitlement to any additional or other damages, if it fails to achieve *Substantial Performance of the Work and Ready-for-Takeover* within the *Contract Time*, the *Owner* will incur substantial damages and the extent of such damages shall be incapable or very difficult of accurate measurement. Nonetheless, the parties acknowledge that as of the effective date of this *Contract*, the amount of liquidated damages set forth in subparagraph 10.4 below represents a good faith estimate on the part of the parties as to the actual potential damages that the *Owner* would suffer because of late completion of the *Project*. It is expressly acknowledged and agreed by and between the parties that the amount of such liquidated damages does not include any penalty. Notwithstanding the foregoing, where the *Project* is delayed beyond the *Contract Time*, the *Owner* shall be entitled to (i) the liquidated damages as calculated pursuant to Article A-10.4, or (ii) in the event that the *Contractor* claims that this liquidated damages provision is invalid or unenforceable and the *Contractor* prevails on such a defence, the damages arising from the delay suffered by the *Owner* including, without limitation, consequential, special, incidental, and indirect damages, costs and other expenses incurred or suffered by the *Owner*.

- 10.4 The *Owner* shall require that the *Contractor* pay to the *Owner* (or have deducted from Contract payments) liquidated damages at the per diem rate set out in the *Contract Documents* for each calendar day of delay beyond the prescribed date for *Ready-for-Takeover* until *Ready-for-Takeover* is achieved and certified, pursuant to the terms of the *Contract*. If there is no per diem rate set out in the *Contract Documents*, the *Contractor* shall pay to the *Owner* the *Administration Costs* incurred by the *Owner* as a result of the delay.
- 10.5 Liquidated damages will be assessed as incurred and reflected as deductions from amounts that may be due under any applications for payment pending at the time that such liquidated damages are assessed. All liquidated damages not deducted from payments prior to final payment shall be deducted from the final payment to be made by the *Owner* to the *Contractor* pursuant to GC 5.5 FINAL PAYMENT and any amount of liquidated damages in excess of the final payment amount, shall be paid by the *Contractor* to the *Owner*, within 30 days following a written demand by the *Owner* for such payment.
- 10.6 The liquidated damages payable under this paragraph are in addition to and without prejudice to any other remedy, action or any other alternative claim that may be available to the *Owner*."

## AMENDMENTS TO THE DEFINITIONS

### 7. DEFINITIONS

#### 7.1 Add the following new definitions:

*Acceptance* and *Accepted* means the *Owner* and the *Consultant* acknowledges that the work for a *Submittal* has been completed and that the *Submittal* on its face conforms to the requirements of the *Contract Documents*. *Acceptance* does not mean confirmation by the *Owner* or the *Consultant* that the *Submittal* does not contain errors or omissions, defects, deficiencies or deviations from the *Contract Documents*. Wherever the words "acceptance" and "accepted" are used in the *Contract Documents*, they shall have the meaning set out in this definition even if the words are not capitalized.

*Administration Costs* means those costs and expenses incurred by the *Owner* as a result of carrying out a process or activity due to a delay in the performance of the *Work* by the *Contractor* and include:

- (a) additional fees payable by the *Owner* to the *Consultant* on a per diem basis according to the *Consultant's* personnel rates;
- (b) the *Owner's* personnel costs associated with the delay, in an amount solely determined by the *Owner*; and
- (c) any additional costs or loss of revenue incurred by the *Owner* due to the delay."

*Adjudication* means construction dispute interim adjudication as defined under the *Construction Act*.

The *Arbitration Act* means the *Arbitration Act*, 1991, S.O. 1991, c. 17, as amended.

*As-Built Drawings* means a set of drawings that are marked-up during construction by the *Contractor* that show how the structures and other parts of the *Work* were actually constructed versus how the structures and other parts of the *Work* were originally designed and "*As-Built Record Drawings*" means the *As-Built Drawings* prepared by the *Contractor* following completion of the *Work* that are *Submitted* to the *Owner* with the *Close-Out Documentation*.

*Authority Having Jurisdiction* means the federal, provincial or municipal entity that is responsible for enforcing codes, standards and regulations relating to building construction, has the power to pass regulations to direct, specify and govern elements or activities of construction projects such as codes, safety, health or standards of manufacture or installation.

*Close-out Documentation* has the meaning given in GC 5.5.1.2.

*Confidential Information* means all information of the *Owner* that is confidential by its nature or in the circumstances in which it is received, including without limitation *Personal Information* and all confidential information in the custody or control of the *Contractor*, regardless of whether it is identified as confidential or not,



which comes into the knowledge, possession or control of the *Contractor* in connection with this *Contract*, but *Confidential Information* does not include information that:

- .1 is or becomes generally available to the public without fault or breach by the *Contractor*, but only after that information becomes generally available to the public;
- .2 the *Contractor* can demonstrate to have been rightfully obtained by the *Contractor* without any obligation of confidence from a third party who had the right to transfer or disclose it to the *Contractor* free of any obligation of confidence;
- .3 the *Contractor* can demonstrate to have been rightfully known to or in the possession of the *Contractor*, free of any obligation of confidence, when disclosed; or
- .4 is independently developed by the *Contractor* without the use of any of the *Owner's Confidential Information*.

*Conflict of Interest* includes, but is not limited to, any situation or circumstance where the interests, conduct, other commitments or relationships of a *Contractor*, a *Contractor's* family member or an officer, director or employee of the *Contractor* could or could be perceived to, directly or indirectly, compromise, impair or be in conflict with the interests of the *Owner*.

*Construction Act* means the *Construction Act*, R.S.O. 1990, c. C.30, as amended, including all regulations passed under it that are enforceable as of the date of execution of this *Contract*. For certainty, the first procurement process for the *Project* (i.e., the "improvement" as that term is defined in the *Construction Act*) was commenced on or after October 1, 2019 and Parts I.1 (Prompt Payment) and II.1 (Construction Dispute Interim Adjudication) of the *Construction Act* apply to this *Contract*.

The *Construction Schedule* or construction schedule means the schedule for the performance of the *Work Submitted* by the *Contractor* and *Accepted* by the *Owner* pursuant to GC 3.4 – CONSTRUCTION SCHEDULE, including any amendments to the *Construction Schedule* made pursuant to the *Contract Documents*.

A *Dispute* means all unresolved claims, disputes or controversies of any kind arising out of or in connection with this *Contract* or the carrying out of the *Work*.

*Environmental Contaminants* means any substance, material or waste defined, regulated, listed or prohibited by *Environmental Laws*.

*Environmental Laws* means all applicable federal, provincial, territorial, municipal and local laws, statutes, ordinances, by-laws and regulations, judgments, decrees, common laws and principles thereof, and orders, directives and decisions rendered or issued by any *Authority Having Jurisdiction* relating to *Environmental Contaminants* or the protection of human health, natural resources or the environment.

*Estimate* means a calculation of the quantity or cost of the *Work* or part of it depending on the context.

*Excess Soil* means "excess soil" as that term is defined under section 3 of the *Excess Soil Regulation*.

*Excess Soil Regulation* means O. Reg. 406/19: On-Site and Excess Soil Management to the *Environmental Protection Act*, R.S.O. 1990, c. E.19., as amended.

*Extended Warranty* means the extended warranties described in the *Specifications* and *Extended Warranty Period* means the period or periods described in the *Specifications*;

*Force Majeure* means an event or a cause beyond the control of a party, which may include war, interference by civil or military authorities, civil insurrection, local or national emergency, blockade, seizure, riot, sabotage, vandalism, terrorism, earthquake, flood, act of God, accident, fire, nuclear or other explosion, disease, epidemic, pandemic, quarantine restriction, strike, lockout or other labour disturbance, governmental embargo, or changes to any acts, orders, legislation, regulations, directives, or priorities of any government or *Authority Having Jurisdiction*; provided such event is not caused by the affected party's negligence, default, failure to exercise reasonable diligence, bankruptcy or insolvency. A *Force Majeure* event or cause does not include an inability to pay or a lack of financial resources unless it is due to a failure of the province to approve the appropriation from the Consolidated Revenue Fund for the *Project*.

*Impact Assessment Reports* means the impact assessment reports, if any, listed in the *RFP* related to the *Fisheries Act*; *Navigable Waters Act*; *Lakes and Rivers Improvement Act*; heritage reviews; *Endangered Species Act* and *Species at Risk Act*; terrestrial resources (vegetation, wildlife, other features); socio-economic impacts and Indigenous consultations.

*Intellectual Property* means any improvement, invention or discovery, whether or not patented or patentable, any technical data, know-how or trade secret, any design, any computer software or any work subject to copyright, whether or not such design or copyright is registered or registrable and all Intellectual Property Rights contained, embedded or disclosed in the *Work*.

*Notice of Non-Payment* means a notice of non-payment of holdback (Form 6) or a notice of non-payment (Form 1.1) under the *Construction Act*, as applicable to the circumstances.

*Payment Period* or payment period means the fixed segments of time for which the *Contractor* shall be entitled to claim payment for *Work* performed during such period, as agreed upon by the *Owner* and the *Contractor* at the first pre-construction meeting. To be effective, such agreement must be in writing or reflected in the final and approved pre-construction meeting minutes. In the event that the *Owner* and the *Contractor* do not fix the segment of time for each *Payment Period* at the first pre-construction meeting, then each *Payment Period* shall be a one (1) month period during which *Work* was performed, with the start and end dates of each *Payment Period* deemed to be the first (1st) calendar day of the applicable month and the last calendar day of the same month, respectively.”

*Personal Information* means information that relates to an identifiable individual or that identifies or may identify an individual as defined in section 2 of the *Freedom of Information and Protection of Privacy Act*, R.S.O. 1990, c. F.31, as amended.

*Pre-Invoice Submission Meeting* has the definition given to it under GC 5.2.1.

*Proper Invoice* means a “proper invoice” as that term is defined in Section 6.1 of the *Construction Act* that complies with the minimum requirements set out in Schedule A to the Supplementary Conditions.

*Proper Invoice Submission Date* is the dated referenced in GC 5.2.2.

*Restricted Period (Adjudication)* means the (inclusive) period of time between November 15 in one calendar year to January 2 in the next calendar year, in any given year throughout the duration of the *Contract*.

*Restricted Period (Proper Invoice)* means the (inclusive) period of time between December 10 to December 28 in any given year throughout the duration of the *Contract*.

*RFP* means the procurement documents used by the *Owner* for the procurement of the *Contractor* for the *Project*.

*Statutory Declaration* means the “Ontario Northland Statutory Declaration of Progress Payment Distribution by Contractor” form, attached to the Supplementary Conditions as Schedule “B”.

*Submittal(s)* means all documentation prepared by the *Contractor* and submitted to the *Owner* and/or the *Consultant* for review and *Acceptance* in accordance with the *Contract Documents*.

*Third-Party Property Owner* means the owner, tenant or other person having the right to use a property.

*Warranty Period* means the period during which the *Contractor* provides a warranty for the *Work* described in GC 12.3.

*Waste Management Plan* means the plan to be submitted by the *Contractor* to the *Owner* and the *Consultant* described in GC 3.11.1 and *Waste Management Report* has the meaning described in the *Specifications*.”

7.2 Delete the definition of “*Consultant*” and replace it with the following:

“The *Consultant* is the *Owner*’s project manager designated by the *Owner* to be the *Owner*’s representative for the purposes of the *Contract*. All references to the *Consultant* in the *Contract Documents* shall mean the *Owner* and, unless otherwise provided in the *Contract Documents*, any requirement for a decision or opinion, in writing

or otherwise, by the *Consultant* shall mean a decision of the *Owner*. References to the “Engineer” in the *Specifications* or to the “Contract Administrator” in OPSS shall mean the *Consultant* as defined herein.”

7.3 At the end of the definition of “*Drawings*”, add the following words “and a Waste Management Plan”.

7.4 Delete the definition of “*Contract Price*” and replace it with the following:

“*Contract Price* is the amount payable by the *Owner* to the *Contractor* for *Work* to be completed under the *Contract* in accordance with the method and manner of payment stipulated in the *Contract Documents* and the lump sum price submitted by the *Contractor* in its proposal as stipulated in Article A-4.1 as amended by any *Change Orders*.”

7.5 Delete the definition of *Payment Legislation*.

7.6 Amend the definition of *Ready-for-Takeover* by deleting all the words after “as verified” and replacing them with “and *Accepted* by the *Owner*.”

## AMENDMENTS TO THE GENERAL CONDITIONS OF THE STIPULATED PRICE CONTRACT

### 8. GC 1.1 CONTRACT DOCUMENTS

8.1 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.

8.2 Delete paragraph 1.1.3 and replace it with the following:

“1.1.3 “The *Contractor* shall review the *Contract Documents* and shall report promptly to the *Owner* any error, inconsistency or omission the *Contractor* may discover. Such review by the *Contractor* shall comply with the standard of care described in paragraph 3.12.1 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 *Owner* for the accuracy of the *Contract Documents*. Provided it has exercised the degree of care and skill described in this paragraph 1.1.3, 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. If the *Contractor* does discover any error, inconsistency or omission in the *Contract Documents*, the *Contractor* shall immediately notify the *Owner* and shall not proceed with the work affected until the *Contractor* has received corrected or missing information from the *Owner*. If the *Contractor* finds discrepancies in and/or omissions from the *Contract Documents* or has any doubt as to the meaning or intent of any part thereof, the *Contractor* must immediately notify the *Owner* by means of a written Request for Information (“RFI”) and the *Consultant* will provide written instructions or explanations. The *Owner* shall not be responsible for oral instructions.”

8.3 Delete paragraph 1.1.4 and replace it with the following:

“1.1.4 Notwithstanding the foregoing, errors, inconsistencies and/or omissions shall not include lack of reference on the *Drawings* or in the *Specifications* to labour and/or *Products* that are required or normally recognized within respective trade practices as being necessary for the complete execution of the *Work*. The *Contractor* shall not use RFIs, issued during execution of the *Work*, in and of themselves to establish a change and/or changes in the *Work* pursuant to Part 6 – CHANGES IN THE WORK. In the event an RFI or the cumulative effect of RFIs leads to what the *Contractor* considers to be a change in the *Work*, then the procedure under Part 6 – CHANGES IN THE WORK shall be followed.”

8.4 Delete paragraph 1.1.5.1 in its entirety and replace it with new 1.1.5.1:

“the order of priority of documents, from highest to lowest, shall be:

- Special Provisions, if any
- ONTC Special Supplementary Conditions, if any
- ONTC Supplementary Conditions to CCDC 2
- Agreement between the Owner and the Contractor
- Definitions
- General Conditions
- Addenda to the Request for Proposals (“RFP”)

- Schedule 2-A to the RFP – RFP Data Sheet
- Schedule 3-A-1 to the RFP – Scope of Work
- RFP Part 4 – Form 8 SCHEDULE OF MATERIALS, if accepted
- Schedule 3-A-2 to the RFP – Technical Specifications
- Schedule 3-A-3 to the RFP – Drawings
- Schedule 3-A-4 to the RFP – Reference Documents
- Schedule 3-A-5 to the RFP – Policies and Procedures
- Contractor's Proposal in Part 4 of the RFP in response to the RFP"

8.5 Add a new subparagraph 1.1.5.6 as follows:

"6 Schedules of Division 01 - General Requirements of the Specifications shall form part of and be read in conjunction with the technical specification section."

8.6 Add a new sentence to the end of paragraph 1.1.9 as follows:

"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 *Owner* to settle *Disputes* among the *Subcontractors* and *Suppliers* in respect to such divisions."

8.7 Delete paragraph 1.1.10 in its entirety and replace it with new paragraph 1.1.10:

"All *Submittals* and *Intellectual Property* rights produced by or resulting from the *Work*, including all *Specifications*, *Drawings*, models and copies thereof, shall vest in the *Owner* and are the sole and absolute property of the *Owner* as and when created. The *Contractor* hereby irrevocably assigns and conveys and agrees to assign and convey, without further consideration, all right, title and interest in and to the *Intellectual Property* rights produced or resulting from the *Work*, in perpetuity and throughout the world, to the *Owner* and its successors and assigns. This paragraph 1.1.10 shall survive termination of the *Contract*."

8.8 Add new paragraphs 1.1.12, 1.1.13, 1.1.14, 1.1.15, 1.1.16 and 1.1.17 as follows:

"1.1.12 The *Owner* shall provide the *Contractor*, without charge, an electronic version of the *Contract Documents*."

1.1.13 If an item is shown on one document, and it can be reasonably inferred that it was intended to include work not shown on other related documents, the *Contract Price* shall nevertheless include for the cost of the item of work, unless the *Owner* agrees otherwise.

1.1.14 Where a provision in the *Contract* is made for the giving or issuing of any *Notice in Writing*, consent, Acceptance, approval, certificate or determination by any person, unless otherwise specified such *Notice in Writing*, consent, *Acceptance*, approval, certificate or determination shall be in writing and shall not unreasonably be withheld or delayed.

1.1.15 The *Contractor* shall keep one copy of the current *Contract Documents*, *Supplemental Instructions*, contemplated change orders, *Change Orders*, *Change Directives*, reviewed *Shop Drawings*, reports and records of meetings at the *Place of Work* in good order and available to the *Owner*.

1.1.16 The *Contractor* shall keep one copy of current standards and manufacturers' literature specified in the *Contract Documents* at the *Place of Work* in good order and available to the *Owner* for the duration of the *Work*.

1.1.17 The *Drawings* are, in part, diagrammatic and are intended to convey the scope of the *Work* and indicate general and appropriate locations, arrangement and sizes of materials. The *Contractor* shall obtain more accurate information about the locations, arrangement and sizes from study and coordination of the *Drawings* and shall become familiar with conditions and spaces affecting these matters before proceeding with the *Work*. Where site conditions require minor changes in indicated locations and arrangements, the *Contractor* shall make such changes at no additional cost to the *Owner*."

## 9. GC 1.2 LAW OF THE CONTRACT

9.1 Delete paragraph 1.2.1 in its entirety and replace it with new paragraph 1.2.1:

"This *Contract* shall be governed by and constituted in accordance with the laws in force in the Province of Ontario excluding any conflict of laws principles. The parties hereby irrevocably attorn to the exclusive jurisdiction of the courts of the Province of Ontario for any legal proceedings arising out of this *Contract* or the performance of the obligations hereunder."

## **10. GC 1.4 ASSIGNMENT**

- 10.1 Delete paragraph 1.4.1 in its entirety and replace it with new paragraph 1.4.1:

"Neither party to the *Contract* shall assign the *Contract* or a portion thereof without the written consent of the other, which consent, in the case of the *Owner*, is at the sole discretion of the *Owner*. In the event of an assignment of the *Contract* by the *Contractor*, such assignment shall require prior written consent of the *Owner* and shall not relieve the *Contractor* from its obligations and liabilities hereunder."

## **11. GC 2.1 AUTHORITY OF THE CONSULTANT**

- 11.1 Delete paragraph 2.1.1 in its entirety and replace it with the following:

"2.1.1 The *Owner's* project manager shall have the authority to act on behalf of the *Owner* for all matters arising under the *Contract*."

- 11.2 Delete paragraph 2.2.2 in its entirety.

## **12. GC 2.2 ROLE OF THE CONSULTANT**

- 12.1 Delete paragraph 2.2.3 in its entirety.

- 12.2 Delete paragraph 2.2.4 in its entirety.

- 12.3 Delete paragraph 2.2.6 in its entirety and replace it with the following:

"2.2.6 If there is a *Dispute* between the *Owner* and the *Contractor* regarding the performance of the *Work* or the interpretation of the *Contract Documents*, the parties shall resolve the *Dispute* in accordance with PART 8 – DISPUTE RESOLUTION."

- 12.4 Delete paragraph 2.2.7 in its entirety.

- 12.5 Delete paragraph 2.2.8 in its entirety.

- 12.6 Delete paragraph 2.2.9 in its entirety.

- 12.7 Delete paragraph 2.2.10 in its entirety.

- 12.8 Amend paragraph 2.2.12 by adding the following to the end of that paragraph:

"The *Supplemental Instructions* are not a change in the *Contract Documents*. If, in the opinion of the *Contractor*, the *Supplemental Instruction* requires an adjustment in the *Contract Price* or in the *Contract Time*, it shall, within three (3) *Working Days* after receipt of a *Supplemental Instruction* provide the *Consultant* and the *Owner* with *Notice in Writing* to that effect. Failure to provide *Notice in Writing* within the time stipulated in this paragraph 2.2.12 shall be deemed an acceptance of the *Supplemental Instruction* by the *Contractor* without adjustment in the *Contract Price* or *Contract Time*."

- 12.9 Delete paragraph 2.2.18 in its entirety.

## **13. GC 2.3 REVIEW AND INSPECTION OF THE WORK**

- 13.1 Add new paragraph 2.3.8 as follows:

"Where inspection and testing services are specified, the service provider employed for such services shall be the service provider named by the *Owner*."

- 13.2 Add new paragraph 2.3.9 as follows:

"Where standards of performance are specified and the *Work* does not comply with the specified standard of performance, the deficiency in the *Work* shall be corrected as directed by the *Consultant*. Subsequent testing to ensure that the standard of performance has been attained (including re-testing by *Owner*), shall be carried out at the *Contractor's* expense and shall not be paid from the cash allowances described in GC 4.1."

#### **14. GC 2.4 DEFECTIVE WORK**

14.1 Add new paragraphs 2.4.1.1, 2.4.1.2, 2.4.1.3 and 2.4.1.4 as follows:

- “.1 Without limiting the foregoing, the *Contractor* shall rectify, in a manner acceptable to the *Owner*, all defective work and deficiencies throughout the *Work*, whether or not they are specifically identified by the *Owner*.
- .2 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*.
- .3 All such corrections of defective work and deficiencies shall be at the *Contractor's* expense.
- .4 If the *Contractor* fails to do the work to correct the defective *Work* or deficiencies, the *Owner* may carry out such remediation work by its own forces or by other *Contractors* and the *Owner* shall be entitled to recover from the *Contractor* the costs thereof or may deduct the same from any monies due or that become due to the *Contractor*."

14.2 Amend paragraph 2.4.3 by deleting the last sentence and replacing it with the following:

"If the *Owner* and the *Contractor* do not agree in the difference in value, they shall resolve the disagreement pursuant to Part 8 – DISPUTE RESOLUTION."

14.3 Add new paragraph 2.4.4 as follows:

"2.4.4 Neither the *Acceptance* of the *Work* by the *Owner*, nor any failure by the *Owner* to identify, observe or warn of defective *Work* or any deficiency in the *Work* shall relieve the *Contractor* from the sole responsibility for rectifying such defect or deficiency at the *Contractor's* sole cost, even where such failure to identify, observe or warn is negligent."

#### **15. GC 2.5 EMERGENCY SITUATIONS**

15.1 Add new GC 2.5 EMERGENCY SITUATIONS as follows:

- “.1 The *Owner* has the right to determine the existence of an emergency situation and, when such an emergency situation is deemed to exist, the *Owner* may instruct the *Contractor* to take action to remedy the situation. If the *Contractor* does not take timely action or, if the *Contractor* is not available, the *Owner* may direct others to remedy the situation. Any such action or direction taken by the *Owner* shall not relieve the *Contractor* of its responsibilities as the "Constructor" pursuant to the *Occupational Health and Safety Act* (Ontario).
- .2 If the emergency situation was the fault of the *Contractor*, the remedial work shall be completed at the cost of the *Contractor* and with no additional cost to the *Owner* and the *Owner* shall be entitled to seek reimbursements for all costs associated with the remedial work including the cost of work done by third parties.
- .3 If the emergency situation was not the fault of the *Contractor*, the *Owner* shall pay for the remedial work."

#### **16. GC 3.1 CONTROL OF THE WORK**

16.1 Add new paragraph 3.1.3 as follows:

"Prior to commencing individual procurement, fabrication and construction activities, the *Contractor* shall verify, at the *Place of the Work*, all relevant measurements and levels necessary for proper and complete fabrication, assembly and installation 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, the *Contractor* shall immediately notify the *Owner* in writing and obtain written clarification from the *Owner* before proceeding with any part of the affected *Work*.”

16.2 Add new paragraph 3.1.4 as follows:

“The *Contractor* shall perform the work in a good and workmanlike manner, using new materials, in accordance with all applicable laws and current best practices and standards in the construction industry at the *Place of Work*. The *Contractor* acknowledges that both time and quality are of the essence and the *Contractor* will perform the *Work* or cause the *Subcontractors* and *Suppliers* to perform the *Work* in accordance with the *Construction Schedule*, as amended from time to time, and in an expeditious and professional manner.”

**17. GC 3.2 CONSTRUCTION BY OWNER OR OTHER CONTRACTORS**

17.1 Add new paragraph 3.2.3.5 as follows:

“Subject to GC 9.4 – CONSTRUCTION SAFETY, for the *Owner’s* own forces and for *Other Contractors*, assume overall responsibility for compliance with all aspects of the applicable health and safety legislation of the *Place of the Work*, including all of the responsibilities of the “Constructor” under the *Occupational Health and Safety Act* (Ontario).”

18.2 Add new paragraph 3.2.3.6 as follows:

“provide for the co-ordination of the activities and work of *Other Contractors* and *Owner’s* own forces with the *Work of the Contract*.”

**18. GC 3.4 CONSTRUCTION SCHEDULE**

18.1 Delete paragraph 3.4.1 in its entirety and replace it with the following:

“3.4.1 The *Contractor* shall:

- .1 within 10 *Working Days* from the date of the *Contract* award, prepare for the *Owner’s* review and *Acceptance*, a construction schedule, including identification of the critical path of the *Work*, the schedule of operations, the proposed methods of construction and sequence of *Work*, and the time the *Contractor* proposes to complete the various items of *Work* within the *Contract Time*. The schedule shall be designed to ensure conformity with the *Contract Time*. The schedule will be in a Gantt chart format in either .pdf or excel format and include:

- (a) activity sequences and durations;
- (b) process for obtaining any required permits;
- (c) work block planning and track protection requested;
- (d) special allocation of labour and *Products*;
- (e) processing of *Shop Drawings* and samples;
- (f) delivery of *Products* involving long lead time procurement;
- (g) usage and occupancy requirements of the *Owner* of those portions of the *Work* having usage or occupancy priority;
- (h) *Substantial Performance of the Work*, and *Ready-for-Takeover* reflecting that such milestones will be achieved by no later than the dates specified in Article A-1.3; and
- (i) any other schedule requirements set out in the *Contract Documents*.

If the construction schedule submitted by the *Contractor* is not *Accepted* by the *Owner*, the *Contractor* shall make revisions to the construction schedule until it is *Accepted* by the *Owner*.

Once *Accepted* by the *Owner*, the schedule submitted by the *Contractor* shall become the "*Construction Schedule*." Notwithstanding any other terms of this *Contact*, 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*. The *Owner* may, at its sole discretion, not issue an order to commence *Work* until the schedule has been received and *Accepted*.

- .2 during performance of the *Work* and in accordance with the controls and reporting requirements in the *Contract Documents*, provide for the *Owner's* review and *Acceptance*, progress reports updating the *Construction Schedule*, reporting on the progress achieved, percentage of completion, schedule status and financial status with areas of immediate concern highlighted. If the schedule is affected by approved *Change Orders*, the *Contractor* shall submit an updated *Construction Schedule*, if requested by the *Owner*, within 7 *Working Days* of the request. This updated schedule shall show how the *Contractor* proposes to perform the balance of the *Work*, so as to complete the *Work* within the *Contract Time*.
- .3 provide progress reports with each application for payment, in the form provided by the *Owner* attached as Schedule C, for review and *Acceptance*, including an update of the *Construction Schedule* referred to in paragraph 3.4.1."

18.2 Add new paragraph 3.4.2 and 3.4.3 as follows:

"3.4.2 If,

- .1 at any time it should reasonably appear to the *Owner* that the actual progress of the *Work* is behind schedule or is likely to become behind schedule, based on critical path methodology, and *Notice in Writing* of such opinion is given to the *Contractor*; or
- .2 the *Contractor* becomes aware of or notices a slippage in the *Construction Schedule*,

then the *Contractor* shall take appropriate steps to cause the actual progress of the *Work* to conform to the *Construction Schedule* and shall produce and present to the *Owner* for its review and *Acceptance* within 5 *Working Days* after becoming aware of the schedule slippage a recovery plan demonstrating how the *Contractor* will achieve the recovery of the *Construction Schedule*.

3.4.3 The *Contractor* is responsible for performing the *Work* within the *Contract Time*. Any schedule submissions revised from the *Accepted* baseline *Construction Schedule* or *Accepted* revised *Construction Schedule* pursuant to GC 3.4 CONSTRUCTION SCHEDULE during construction are deemed NOT to be approved extensions to the *Contract Time*. Revisions to the *Construction Schedule* shall not be made without the prior written *Acceptance* of the *Owner*. All requests by the *Contractor* for a revision to the *Construction Schedule* that includes an extension to the *Contract Time* or adjustment to the date(s) for *Substantial Performance of the Work* or *Ready-for-Takeover* must be approved by the *Owner* through an executed *Change Order*."

## 19. GC 3.5 SUPERVISION

19.1 Amend paragraph 3.5.1 by adding at the end of that paragraph:

"..., and upon the *Contractor* obtaining the *Owner's* written consent, which consent will not be unreasonably withheld."

19.2 Add new paragraph 3.5.3 as follows:

"Notwithstanding paragraph 3.5.2, the representative of the *Contractor* attending a meeting with the *Owner* or the *Owner's* representative shall be deemed to have authority to act on behalf of the *Contractor* and bind the *Contractor* in matters related to this *Contract*."

19.3 Add new paragraph 3.5.4 as follows:

"The *Owner* may, at any time during the course of the *Work*, request the replacement of the appointed *Contractor's* representative(s), where the grounds for the request involve conduct on the part of the *Contractor's* representative(s) which jeopardizes the safety of the *Owner's* operations or the *Work* or the proper progress of the *Work*. Immediately upon receipt of the request, the *Contractor* shall make arrangements to appoint an



*Acceptable* replacement. The *Contractor* shall indemnify and hold the *Owner* harmless from and against any damages, costs, expenses, claims, injuries and other liabilities suffered by the *Owner* arising from the conduct of the representative that is being replaced.”

## **20. GC 3.6 SUBCONTRACTORS AND SUPPLIERS**

### **20.1 Add new paragraph 3.6.1.4:**

“ensure the *Subcontractors* and *Suppliers*, while working on the *Owner’s* property, are aware of and comply with the *Owner’s* policies, including its Fit for Duty Policy, and with the Ontario Northland Operating Manual, including the Current Summary Bulletin, the current Ontario Northland Time Table, C.R.O.R. 2022, Infrastructure Special Instructions, Dangerous Goods and Ontario Northland General Operating Instructions, as applicable.”

### **20.2 Delete paragraph 3.6.2 in its entirety and replace it with a new paragraph 3.6.2**

“The *Contractor* shall not change *Subcontractors* or *Suppliers* identified in the *Contract Documents* without the prior written approval of the *Owner* which approval will not be unreasonably withheld.

### **20.3 Delete paragraphs 3.6.3 and 3.6.4 in their entirety and replace them with “Intentionally Left Blank.”**

### **20.4 Add new paragraph 3.6.7 as follows:**

“The responsibility as to which *Supplier* and/or *Subcontractor* provides the specific labour, *Products* and services for each item of work rests solely with the *Contractor*, within and in accordance with the requirements and limitations listed in the *Contract Documents* with respect to approval of *Suppliers* and/or *Subcontractors* permitted to perform work on the *Project*.”

## **21. GC 3.7 LABOUR AND PRODUCTS**

### **21.1 Amend paragraph 3.7.1 by adding the words, “..., agents, *Subcontractors* and *Suppliers* ...” after the word “employees”.**

### **21.2 Amend paragraph 3.7.2 by adding the following words at the beginning of the paragraph: “Except as otherwise provided in the technical *Specifications*” and adding the following sentence at the end of that paragraph:**

“The *Contractor* represents and warrants that the *Products* supplied by the *Contractor* 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*.”

### **21.3 Add new paragraph 3.7.4 as follows:**

“Upon receipt of a *Notice in Writing* from the *Owner*, the *Contractor* shall take action to rectify any situation involving its employee, agent, *Subcontractor* or *Supplier* whose work is unsatisfactory to the *Owner* or who are considered by the *Owner* to be unskilled or otherwise objectionable. If after giving sufficient warning the *Contractor* is not able to reasonably rectify such situation, then such employee, agent, *Subcontractor* or *Supplier* shall be dismissed from the *Place of the Work* and the *Contractor* shall indemnify and hold the *Owner* harmless from and against any damages, costs, expenses, claims, injuries and other liabilities suffered by the *Owner* arising from the dismissal of such employee, agent, *Subcontractor* or *Supplier*.”

### **21.4 Add new paragraph 3.7.5 as follows:**

“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* identified by the *Contractor* and *Accepted* by of the *Owner*. The *Owner* shall provide all relevant information on the *Products* to be supplied by the *Owner* or *Other Contractors*.”

### **21.5 Add new paragraph 3.7.6 as follows:**

“The *Contractor* shall not employ any persons to perform *Work* whose labour affiliation, or lack thereof, is incompatible with other labour employed in connection with the *Work*. Any costs arising from labour disputes, as

a result of the employ of any such person by the *Contractor*, its *Subcontractors* or *Suppliers* shall be at the sole expense of the *Contractor*.”

21.6 Add new paragraph 3.7.7 as follows:

“The *Contractor* and the *Owner* and its representatives shall cooperate and shall take all reasonable and necessary actions to maintain stable and harmonious labour relations with respect to the work at the *Place of the Work*, including cooperation to attempt to avoid work stoppages, trade union jurisdictional disputes and other labour disputes.”

## **22. GC 3.8 SHOP DRAWINGS**

22.1 Delete paragraph 3.8.7 and replace it with the following:

“3.8.7 The *Owner* will review and return *Shop Drawings* in accordance with the schedule agreed upon as described in paragraph 3.8.2, or, in the absence of such schedule, with reasonable promptness. If, for any reason, the *Owner* cannot process them within the agreed-upon schedule or with reasonable promptness, the *Owner* shall notify the *Contractor* and they shall meet to review and develop a revised schedule for processing such *Shop Drawings* that is *Acceptable* to the *Owner*. The *Contractor* shall update the *Shop Drawings* schedule to correspond to changes in the *Construction Schedule*. Changes in the *Contract Price* or *Contract Time* may be made only in accordance with GC 6.1, GC 6.2 or GC 6.3.”

22.2 Add new paragraphs 3.8.8, 3.8.9, 3.8.10 and 3.8.11 and as follows:

“3.8.9 The *Contractor* shall provide *Shop Drawings* and *Submittals* in the form specified, or if not specified, as directed by the *Owner*. *Shop Drawings* provided by the *Contractor* to the *Owner* shall indicate by stamp, date and signature of the person responsible for the review that the *Contractor* has reviewed each one of them. Certain *Specifications* sections require the *Shop Drawings* to bear the seal and signature of a professional engineer. Such professional engineer must be registered in the jurisdiction of the *Place of the Work* and shall have expertise in the area of practice reflected in the *Shop Drawings*.

3.8.10 *Shop Drawings* which require approval of any *Authority Having Jurisdiction* shall be provided to such authority by the *Contractor* for the authority’s approval.

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

3.8.12 Reviewed *Shop Drawings* shall not authorize a change in the *Contract Price* and/or the *Contract Time*.”

## **23. GC 3.9 USE OF THE WORK**

23.1 Add new GC 3.9 – USE OF THE WORK as follows:

### **“GC 3.9 USE OF THE WORK**

3.9.1 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*.

3.9.2 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*.

3.9.3 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 fittings and equipment, or for other use before *Ready-for-Takeover*, if, in the opinion of the *Owner*, such entry and occupation does not prevent or substantially interfere with the *Contractor* in the performance of the *Contract* within the *Contract Time*. Such entry or occupation shall neither be considered as acceptance of the *Work* or in any way relieve the *Contractor* from its responsibility to complete the *Contract*.”

## **24. GC 3.10 CUTTING AND REMEDIAL WORK**

24.1 Add new GC 3.10 – CUTTING AND REMEDIAL WORK as follows:

### **“GC 3.10 CUTTING AND REMEDIAL WORK**

- 3.10.1 The *Contractor* shall perform the cutting and remedial work required to make the affected parts of the *Work* come together properly. Such 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*.
- 3.10.2 The *Contractor* shall coordinate the *Work* to ensure all cutting and remedial work required is kept to a minimum.”

## **25. GC 3.11 CLEANUP**

25.1 Add new GC 3.11 – CLEANUP as follows:

### **“GC 3.11 CLEANUP**

- 3.11.1 The *Contractor* shall comply with all requirements for cleanup at the *Place of the Work* as specified in the *Contract Documents*. The *Contractor* shall provide to the *Owner* for *Acceptance* a *Waste Management Plan*, and a waste reduction plan if required by *Environmental Laws*, for the waste products, debris and any *Excess Soils* generated by the *Work*, which plan shall comply with all *Environmental Laws* and the *Specifications*. The costs of disposing of all waste products and debris, including products and debris containing *Environmental Contaminants*, and *Excess Soil* resulting from the *Work* is included in the *Contract Price*.
- 3.11.2 Before applying for *Substantial Performance of the Work*, the *Contractor* shall remove waste products and debris and shall leave the *Place of the Work* clean and suitable for use or occupancy by the *Owner*. All products, tools, *Construction Equipment* and *Temporary Work* not required for the performance of any remaining *Work* shall be removed by the *Contractor*.
- 3.11.3 As a condition precedent to final payment, the *Contractor* shall remove any remaining products, tools, *Construction Equipment*, *Temporary Work*, waste products and debris from the *Place of the Work* to the satisfaction of the *Owner*.
- 3.11.4 In performing work to correct deficiencies or work under warranty following *Ready-for-Takeover* of the *Work*, the *Contractor* shall maintain the *Place of the Work* in a tidy condition and shall immediately remove waste products and debris.
- 3.11.5 The *Contractor* shall comply with all *Environmental Laws* in disposing of the waste products, debris and *Excess Soil* resulting from the *Work*. The *Contractor* shall assume all liability and responsibility for any waste products, debris and *Excess Soil*, including any such materials containing *Environmental Contaminants*, which are removed from the *Place of the Work* by the *Contractor* and during the transportation of the waste products, debris and *Excess Soils* to the appropriate waste disposal site. The *Contractor* shall submit landfill weigh bills from a waste disposal site as proof that all waste has been disposed of at a certified waste disposal site. The *Contractor* shall submit a *Waste Management Report* as part of the *Close-Out Documentation* described in paragraph 5.5.1.2. to be submitted with the application for verification of *Ready-for-Takeover*.
- 3.11.6 In the event that the *Contractor* fails to remove waste and debris as provided in this GC 3.11, then the *Owner* may give the *Contractor* twenty-four (24) hours' *Notice in Writing* to meet its obligations respecting clean up. Should the *Contractor* fail to meet its obligations pursuant to this GC 3.11 within the twenty-four (24) hour period next following delivery of the notice, the *Owner* may remove such waste and debris and deduct from payments otherwise due to the *Contractor*, the *Owner's* costs for such clean up, including a reasonable mark-up for *Administration Costs*.”

## **26. GC 3.12 PERFORMANCE BY CONTRACTOR**

26.1 Add new GC 3.12 – PERFORMANCE BY CONTRACTOR as follows:

### **“GC 3.12 PERFORMANCE BY CONTRACTOR**

- 3.12.1 In performing its obligations, duties and responsibilities under this *Contract*, the *Contractor* shall exercise the degree of care, skill and diligence that would normally be exercised by an experienced, skilled and prudent contractor supplying similar services for similar projects. The *Contractor* acknowledges and agrees that, throughout this *Contract*, the *Contractor's* obligations, duties and responsibilities shall be judged, evaluated and interpreted in accordance with this standard. The *Contractor* shall exercise the same standard of care in respect of any *Products*, *Subcontractors*, *Suppliers*, personnel or procedures which it may recommend to the *Owner* or employ on the *Project*.
- 3.12.2 The *Contractor* further represents, covenants and warrants to the *Owner* that:
- .1 The personnel and *Subcontractors* it assigns to the *Project* are appropriately experienced;
  - .2 It has a sufficient staff of qualified and competent personnel to replace its designated supervisor and project manager, 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*.”
- 3.12.3 The *Owner* has a Vendor Performance Policy which requires the *Owner* to complete an evaluation of the *Contractor's* performance of its obligations under this *Contract*. The performance evaluation of the *Contractor* for the supply of the *Work* will be used in the assessment of the *Contractor's* proposals in response to future procurements. The performance evaluation may also result in the *Contractor* being disqualified from submitting proposals in response to future procurements in accordance with the terms of the policy. The policy can be found at <http://ontarionorthland.ca/en/requests-tenders>.”

## **27. 3.13 EXCESS SOIL MANAGEMENT**

27.1 Add new GC 3.13 – EXCESS SOIL MANAGEMENT as follows:

### **“GC 3.13 EXCESS SOIL MANAGEMENT**

- 3.13.1 The *Contractor* shall be solely responsible for the proper management of all *Excess Soil* at the *Place of the Work* and for performance of the *Work* in compliance with the rules, regulations and practices required by the *Excess Soil Regulation* until such time as *Ready-for-Takeover* is achieved. Without restricting the generality of the previous sentence, the *Contractor's* responsibility under this GC 3.13 includes the testing, designation, transportation, tracking, temporary and/or final placement, record keeping, and reporting of all *Excess Soil* in connection with the *Work* all in compliance with the *Excess Soil Regulation*.
- 3.13.2 The *Contractor* shall indemnify and save harmless the *Owner*, their agents, officers, directors, administrators, governors, employees, consultants, successors and assigns from and against the consequences of any and all infractions committed by the *Contractor*, or those for whom it is responsible at law, under the *Excess Soil Regulation*, or any environmental protection legislation, including the payment of legal fees and disbursements on a substantial indemnity basis.”

## **27A GC 4.1 CASH ALLOWANCES**

27A.1 Add the following at the end of paragraph 4.1.2:

“The maximum markup for the *Contractor's* overhead and profit on a cash allowance shall be five percent (5%).”

27A.2 Delete the last sentence in paragraph 4.1.4.

27A.3 Delete paragraph 4.1.5 in its entirety and replace it with the following:

"The *Contract Price* shall be adjusted by *Change Order* to provide for any difference in the total value of all cash allowances and the actual cost of the *Work* performed under all cash allowances."

27A.4 Add new paragraph 4.1.8:

"4.1.8 The *Owner* may require the *Contractor* to obtain competitive bids, at no additional cost to the *Owner*, for portions of the *Work* to be paid from cash allowances."

## 28. GC 5.1 FINANCING INFORMATION REQUIRED OF THE OWNER

28.1 Delete GC 5.1 – FINANCING INFORMATION REQUIRED OF THE OWNER in its entirety including all paragraphs thereunder and replace it with "Intentionally left blank."

## 28.2 GC 5.2 APPLICATIONS FOR PAYMENT

28.3 Delete paragraph 5.2.1 in its entirety and replace it with a new paragraph 5.2.1:

"5.2.1 On a *Working Day* that is not more than 10 calendar days after the end of each *Payment Period*, a representative of the *Contractor* and the *Owner* shall attend a meeting to discuss and review the *Work* completed during the *Payment Period*, including quantities, if applicable (the "**Pre-Invoice Submission Meeting**"). The *Contractor* shall bring with it to the *Pre-Invoice Submission Meeting* the following:

- .1 a draft of its anticipated application for payment for the applicable *Payment Period*;
- .2 the schedule of values submitted in accordance with GC 5.2.4, and *Accepted* by the *Owner* in accordance with GC 5.2.5;
- .3 *Subcontractor* and *Supplier* invoices and supporting materials;
- .4 receipts for reimbursable expenses (where expressly permitted by the *Contract*, if at all);
- .5 accounts and records documenting the cost of performing the *Work* attributable to any *Change Order* or *Change Directive*;
- .6 any visual documentation (photos, videos, diagrams) evidencing the progress of the *Work*; and
- .7 any other documents reasonably required by the *Contract Documents* or the *Owner*."

28.4 Delete paragraph 5.2.2 in its entirety and replace it with a new paragraph 5.2.2:

"5.2.2 Within 5 calendar days following the *Pre-Invoice Submission Meeting*, the *Contractor* shall deliver to the *Owner* its application for payment that complies with the requirements of GC 5.2.6 for *Work* performed during a *Payment Period* (the "**Proper Invoice Submission Date**"), provided that if the fifth (5th) calendar day following the *Pre-Invoice Submission Meeting* falls on a calendar day that is not *Working Day*, the *Proper Invoice Submission Date* shall be deemed to fall on the next *Working Day*. However, the following shall apply to the delivery of all *Contractor* applications for payment:

- .1 If the *Contractor* fails to deliver its application for payment, at the interval prescribed in GC 5.2.2, subject to written approval by the *Owner*, the *Contractor* shall not be entitled to submit its application for payment until the next prescribed interval. Should the *Owner* decide to accept an application for payment submitted after the applicable *Proper Invoice Submission Date* (which the *Owner* is under no obligation to do), such acceptance shall not be construed as a waiver of any of the *Owner's* rights, or as a waiver or release of the *Contractor's* obligations to strictly comply with the requirements prescribed in this GC 5.2 – APPLICATIONS FOR PAYMENT;
- .2 If an application for payment is delivered by the *Contractor* to the *Owner* on a day that is prior to an eligible *Proper Invoice Submission Date*, the application for payment will not be considered or reviewed by the *Owner* until the earliest eligible *Proper Invoice Submission Date* as identified in GC 5.2.2, at which point the application for payment will be deemed to have been received by the *Owner* for the purpose of review and evaluation;

- .3 Notwithstanding any other provision of this *Contract*, the *Contractor* shall not deliver an application for payment for consideration as a *Proper Invoice* by the *Owner*, during the *Restricted Period (Proper Invoice)*;
- .4 The *Owner* and the *Contractor* hereby consent to the giving and receiving of *Proper Invoices* electronically and in accordance with the requirements of this GC 5.2 – APPLICATIONS FOR PAYMENTS.”

28.5 Amend paragraph 5.2.3 by adding the following to the end of that paragraph:

“but no amount claimed shall include *Products* delivered to the *Place of the Work* unless the *Products* are free and clear of all security interests, liens, and other claims of third parties, subject to claims for lien pursuant to the *Construction Act*.”

28.6 Amend paragraph 5.2.4 by deleting the words “the *Consultant*, at least 15 calendar days” and replacing them with “the *Owner* at least 30 calendar days”

- and -

add the words “in a form acceptable to the *Owner*,” after the words “*Contract Price*”.

28.7 Amend paragraph 5.2.5 by deleting the word “*Consultant*” and replacing it with “*Owner*”.

28.8 Delete paragraph 5.2.6 in its entirety and replace it with a new paragraph 5.2.6:

“5.2.6 Each application for payment submitted pursuant to GC 5.2.2 shall:

- .1 be in a form prescribed, or otherwise approved in writing, by the *Owner*;
- .2 include all the requirements for a *Proper Invoice* prescribed by the *Construction Act* and the *Contract Documents*;
- .3 be delivered to the *Owner* in the same manner as a *Notice in Writing*; and
- .4 unless otherwise directed in writing by the *Owner*, by email to [pay.inv@ontarionorthland.ca](mailto:pay.inv@ontarionorthland.ca) and to the *Owner's* representative listed in Article A-6.”

28.9 Amend paragraph 5.2.8 by adding the following new sentence at the end of that paragraph:

“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 the title has passed to the *Owner* pursuant to GC 13.1 – OWNERSHIP OF MATERIALS.”

28.10 Add new paragraph 5.2.9 as follows:

“5.2.9 The *Contractor* shall prepare and maintain current *As-Built Drawings* which shall consist of the *Drawings* and *Specifications* revised by the *Contractor* during the *Work*, showing changes to the *Drawings* and *Specifications*, which current *As-Built Drawings* shall be maintained by the *Contractor* and made available to the *Owner* for review with each application for progress payment. The *Owner* reserves the right to retain a reasonable amount for the value of the *As-Built Drawings* not presented for review.”

28.11 Add new paragraph 5.2.10 as follows:

“5.2.10 Upon receipt of an application for payment submitted for payment by the *Contractor* in accordance with GC 5.2 - APPLICATIONS FOR PAYMENT, the *Owner* will assess whether all of the requirements for a *Proper Invoice* are satisfied and, if the application for payment does not meet the requirements, the *Owner* will return the application for payment to the *Contractor* with reasons setting out why the application for payment does not meet the requirements for a *Proper Invoice* and the *Contractor* may resubmit the application for payment with all required information within three (3) *Working Days* of the *Contractor's* receipt of the *Owner's* reasons. For clarity,

- .1 if an application for payment does not include all of the requirements for a *Proper Invoice* required by GC 5.2.6.2, it shall not be considered a "Proper Invoice" for the purposes of the *Construction Act* and the *Owner* shall have no obligation to make a payment and the time periods set out in GC 5.3 - PAYMENTS and in Section 6.4 of the *Construction Act* shall not apply until the *Contractor* has submitted an application for payment that includes all information required by GC 5.2.6.2;
- .2 if the *Contractor* fails, refuses, or neglects to resubmits its application for payment within three (3) *Working Days* after it is returned in accordance with this GC 5.2.10, the *Contractor* shall be deemed to have failed to deliver its application for payment and GC 5.2.2.1 shall apply;
- .3 where the *Contractor* disagrees with the *Owner's* assessment that some of the of the requirements for a *Proper Invoice* required by GC 5.2.6.2 are missing from its application for payment, nothing in this GC 5.2.10 shall prevent the *Contractor* from resubmitting the same application for payment without any additional or new information; and
- .4 the *Owner* reserves the right, in its sole, absolute and unfettered discretion, to waive an error or minor irregularity in any application for payment delivered by the *Contractor* for the purposes of deeming an application for payment a "Proper Invoice" within the meaning of the *Construction Act*, but the *Owner* shall be under no obligation to exercise this right."

## 29. GC 5.3 PAYMENT

29.1 Delete paragraph 5.3.1 in its entirety and replace it with a new paragraph 5.3.1:

"5.3.1 After receipt by the *Owner* of an application for payment submitted by the *Contractor* in accordance with GC 5.2 – APPLICATIONS FOR PAYMENT:

- .1 the *Owner* will either:
  - (a) issue a certificate for payment, with a copy to the *Contractor*, in the amount applied for in the *Proper Invoice*, or
  - (b) issue a certificate for payment, with a copy to the *Contractor*, for an amount determined by the *Owner* to be properly due to the *Contractor* after applying any credits, withheld amounts, or other set-offs which the *Owner* is entitled to notwithstanding any notice of dispute or disagreement that the *Contractor* may have served, along with the *Owner's* reasons why an amount other than what is claimed in the *Proper Invoice* is properly due to the *Contractor*, which finding the *Owner* may accept or amend prior to the *Owner* issuing a *Notice of Non-Payment*, if any, in accordance with GC 5.3.2;
- .2 the *Owner* shall make payment to the *Contractor*, on account as provided in Article A-5,
  - (a) in the amount stated in the certificate for payment, or
  - (b) in the amount stated in the certificate for payment less such amount stated in the *Owner's Notice of Non-Payment* issued pursuant to GC 5.3.2,

on the 28th calendar day after receipt of a *Proper Invoice*, unless such 28th calendar day lands on a day that is other than a *Working Day*, in which case payment shall be made on the next *Working Day* after such 28th day."

29.2 Add new paragraph 5.3.2 as follows:

"5.3.2 In the event that the application for payment delivered by the *Contractor* pursuant to GC 5.2 – APPLICATIONS FOR PAYMENT does not include the requirements for a *Proper Invoice* or if the *Owner* disputes the amount claimed as payable in the *Proper Invoice*, then the *Owner* shall within 14 calendar days of receipt of the application for payment, issue a *Notice of Non-Payment* (Form 1.1)."

29.3 Add new paragraph 5.3.3 as follows:

"5.3.3 Where the *Owner* has delivered a *Notice of Non-Payment*, as specified under GC 5.3.2, the *Owner* and the *Contractor* shall first engage in good faith negotiations to resolve the dispute. If within 10 calendar

days following the issuance of a *Notice of Non-Payment*, the *Owner* and the *Contractor* cannot resolve the dispute, either party may issue a notice of *Adjudication* in a form prescribed under the *Construction Act*, in which case the *Owner* and the *Contractor* will agree to submit the dispute to *Adjudication* as set out under PART 8 – DISPUTE RESOLUTION. The amounts disputed and described under the *Notice of Non-Payment* shall be held by the *Owner* until all disputed amounts of the relevant *Proper Invoice* have been resolved pursuant to PART 8 – DISPUTE RESOLUTION any portion of the *Proper Invoice* which is not the subject of the *Notice of Non-Payment* shall be payable within the time period set out in paragraph 5.3.1.2.”

29.4 Add new paragraph 5.3.4 as follows:

“5.3.4 Without limitation, the *Owner* shall be entitled to deduct from or, set off against, any payment of the *Contract Price* and any other amounts payable by the *Owner* to the *Contractor* under the *Contract*:

- .1 any amount expended by the *Owner* in exercising the *Owner's* rights under this *Contract* to perform any of the *Contractor's* obligations that the *Contractor* has failed to perform;
- .2 any damages, costs or expenses (including, without limitation, reasonable legal fees and expenses) incurred by the *Owner* as a result of the failure of the *Contractor* to perform any of its obligations under the *Contract*; or
- .3 any other amount owing from the *Contractor* to the *Owner* under this *Contract*.”

29.5 Add new paragraph 5.3.5 as follows:

“5.3.5 The *Contractor* represents, warrants, and covenants to the *Owner* that it is familiar with its prompt payment and trust obligations under the *Construction Act* and will take all required steps and measures to ensure that it complies with the applicable prompt payment and trust provisions under the *Construction Act* including, without limitation, section 8.1 of the *Construction Act*. Evidence of the *Contractor's* compliance under this paragraph 5.3.5 will be made available to the *Owner* within 5 *Working Days* following receipt by the *Contractor* of a *Notice in Writing* making such request.”

### **30. GC 5.4 SUBSTANTIAL PERFORMANCE OF THE WORK AND PAYMENT OF HOLDBACK**

30.1 Delete paragraph 5.4.1.2 in its entirety and replace it with the following:

“.2 jointly with the *Contractor*, state the date of *Substantial Performance of the Work*, or a designated portion of the *Work*, in a certificate.”

30.2 Delete paragraph 5.4.2 in its entirety and replace it with the following:

“5.4.2 After the date of *Substantial Performance of the Work* is established, the *Contractor* and all *Subcontractors* who have completed their subcontracts shall complete, on a commercially reasonable efforts basis, within thirty (30) days, all deficient work including providing the required *Close-Out Documentation*, unless the reasons for any delay is *Acceptable* to the *Owner*. All deficient work not completed within the above time may be completed by the *Owner* and the cost of this work may at the option of the *Owner* be deducted from the *Contractor's* next application for payment, or otherwise recoverable upon written demand by the *Owner* to the *Contractor*.”

30.3 Delete paragraph 5.4.3 and replace it with the following:

“5.4.3 Immediately following the issuance of a certificate of *Substantial Performance of the Work*, the *Contractor* shall publish the certificate referred to in paragraph 5.4.1.2 in the manner provided in the *Construction Act*. Failing valid publication by the *Contractor* within 3 *Working Days* following the issuance of the certificate, the *Owner* shall be at liberty to publish the certificate and back-charge the *Contractor* for its reasonable costs for doing so.”

30.4 Delete paragraph 5.4.4 and replace it with the following:

“5.4.4 After publication of the certificate of the *Substantial Performance of the Work*, the *Contractor* shall submit an application for payment of the outstanding *Construction Act* holdback amount, which application for payment shall:



- .1 include all of the requirements listed in Schedule A to these Supplementary Conditions, as applicable to the application for payment of the holdback amount; and
- .2 include a statement that the *Contractor* has not received any written notices of lien or any claims for liens from any *Subcontractor* or *Supplier*.

After the receipt of a complete application for payment of the holdback amount from the *Contractor*, the *Owner* will issue a certificate for payment of the holdback amount, provided that such amount is subject to and will only become due and payable in accordance with GC 5.4.5 and the *Construction Act*."

30.5 Delete paragraph 5.4.5 and replace it with the following:

"5.4.5 The *Construction Act* holdback amount shall become due and payable the day immediately following the expiration of the holdback period prescribed by the *Construction Act*, subject to the occurrence of any of the following:

- .1 the preservation of a lien in respect of the *Project* that has not been satisfied, discharged or otherwise provided for in accordance with the *Construction Act*;
- .2 receipt by the *Owner* of a written notice of lien that has not been satisfied, discharged or otherwise provided for in accordance with the *Construction Act*; or
- .3 prior to the expiry of 40 calendar days following the publication of the certificate of *Substantial Performance of the Work*, the *Owner* publishes a *Notice of Non-Payment* of holdback in accordance with the *Construction Act*, setting out the amount of holdback that will not be paid, which may include non-payment to secure the correction of deficiencies and/or the completion of the *Work*."

30.6 Add new paragraph 5.4.7 as follows:

"5.4.7 Where the *Construction Act* allows for release of *Construction Act* holdback on subcontract work which is 100% complete prior to the release of holdback contemplated under GC 5.4.5, the *Contractor* may make application to the *Owner* and the *Consultant* by written request for a review by the *Consultant* to determine the date of completion of the subcontract and shall submit such supporting material as the *Consultant* may in its discretion require, including:

- .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 7).
- .3 Certificate of Completion of Subcontract as prescribed in subsection 33(1) of the *Construction Act* (Form 10).
- .4 Workplace Safety & Insurance Board Clearance Certificate for the Contractor, the Subcontractor concerned, and any other Subcontractors and Suppliers who have provided any services to the Subcontractor.
- .5 Statutory declaration by an officer of the Subcontractor in the form CCDC Document 9B - 2018.
- .6 Contractor's written acknowledgement to the Owner that the requirements of the Contract Documents will not be altered by early release of the *Construction Act* holdback of the completed subcontracts.
- .7 Confirmation by the bonding company that it has been notified of the intent to claim early release of holdback and does not object.
- .8 Sufficient evidence to the Owner's reasonable satisfaction that, as of the date of the Contractor's application, no claims for lien have been preserved against the Place of the Work that have not been vacated by the posting of security, discharged, or otherwise addressed in accordance with GC 5.8 – CONSTRUCTION LIENS."

## 31. GC 5.5 FINAL PAYMENT

31.1 Delete GC 5.5 – FINAL PAYMENT in its entirety and replace it with the following:

“5.5.1 When *Ready-for-Takeover* has been achieved in accordance with GC 12.1 – READY-FOR-TAKEOVER and the *Contractor* considers the *Work* is complete, and after the *Contractor* and the *Owner* have attended a *Pre-Invoice Submission Meeting* analogous to the requirement in GC 5.2.1, the *Contractor* may submit an application for final payment to the *Owner* and the *Contractor* shall:

- .1 include all of the requirements set out in GC 5.2.1, including without limitation those requirements listed in Schedule A to these Supplementary Conditions that are specific to an application for final payment;
- .2 ensure that all warranties, *Extended Warranties*, records, operation and maintenance manuals, data books, literature maintenance sheets, list of outstanding work and deficiency list, *Waste Management Report*, keys, Certificate of Clearance from WSIB, proof of publication of the certificate of *Substantial Performance of the Work* and the *As-Built Record Drawings* are submitted to the *Owner* (collectively, the “**Close-Out Documentation**”). Such submissions shall constitute requirements for the *Proper Invoice* for final payment; and
- .3 if applicable, (a) written confirmation from the *Owner* that the deficiencies or incomplete *Work* waived by the *Owner* pursuant to GC 12.1.2 have been fully rectified as of the date of the *Contractor*’s application for final payment, and/or (b) written confirmation, signed by the *Owner* and the *Contractor*, that the *Contract Price* has been reduced by a specified amount in exchange for the *Owner* releasing the *Contractor* of its obligation to rectify the certain outstanding deficiencies and/or incomplete *Work* waived by the *Owner* pursuant to GC 12.1.2, as detailed in such written confirmation.”

5.5.2 After receipt by the *Owner* of an application for final payment submitted by the *Contractor* in accordance with paragraph 5.5.1:

- .1 the *Owner* will either:
  - (a) issue, with a copy to the *Contractor*, a certificate for payment, in the amount applied for in the *Proper Invoice*, or
  - (b) issue, with a copy to the *Contractor*, a certificate for payment for an amount determined by the *Owner* to be properly due to the *Contractor* after applying any credits, withheld amounts, or other set-offs which the *Owner* is entitled to notwithstanding any notice of dispute or disagreement that the *Contractor* may have served, along with the *Owner*’s reasons why an amount other than what is claimed in the *Proper Invoice* is properly due to the *Contractor*, which finding the *Owner* may accept or amend prior to the *Owner* issuing a *Notice of Non-Payment*, if any, in accordance with GC 5.5.3;
- .2 the *Owner* shall make payment to the *Contractor*, on account as provided in Article A-5,
  - (a) in the amount stated in the certificate for payment, or
  - (b) in the amount stated in the certificate for payment less such amount stated in the *Owner*’s *Notice of Non-Payment* issued pursuant to GC 5.3.2,

on the 28th calendar day after receipt of a *Proper Invoice*, unless such 28th calendar day lands on a day that is other than a *Working Day*, in which case payment shall be made on the next *Working Day* after such 28th day.”

5.5.3 In the event that the application for final payment delivered by the *Contractor* does not include the requirements of GC 5.5.1 (including the requirements for a *Proper Invoice*) or where the *Owner* disputes the amount claimed as payable in the *Proper Invoice*, then the *Owner* shall within 14 calendar days of receipt of the application for payment, issue a *Notice of Non-Payment*. Where the *Owner* has delivered a *Notice of Non-Payment*, as specified under this GC 5.5.3, the *Owner* and the *Contractor* shall first engage in good faith negotiations to resolve the dispute. If within 10 calendar days following the issuance of a *Notice of Non-Payment*, the *Owner* and *Contractor* cannot resolve the dispute, either party may issue

a notice of *Adjudication* in a form prescribed under the *Construction Act*. The *Owner* and *Contractor* will then submit the dispute to *Adjudication* as set out under PART 8 – DISPUTE RESOLUTION.

- 5.5.4 The amounts disputed and described under the *Notice of Non-Payment* shall be held by the *Owner* until all disputed portions of the *Proper Invoice* for final payment have been resolved in accordance with PART 8 – DISPUTE RESOLUTION. Any portion of the *Proper Invoice* which is not the subject of a *Notice of Non-Payment* shall be payable within the time period set out in paragraph 5.5.2.2.
- 5.5.5 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* in accordance with paragraph 5.5.2.2.
- 5.5.6 Notwithstanding anything else in this GC 5.5 – FINAL PAYMENT the *Owner* shall retain a finishing holdback as provided for in the *Construction Act*, which shall be released to the *Contractor* upon expiry of the lien period provided for under the *Construction Act*, provided no construction liens have been registered.
- 5.5.7 As additional requirements for release of finishing construction lien holdback, the *Contractor* shall submit the following documentation:
  - .1 a written declaration that no claims for lien or written notices of lien have been received by it;
  - .2 a *Statutory Declaration* in the form set out in Schedule B that all accounts for labour, subcontracts, *Products*, construction machinery and equipment, and other indebtedness which may have been incurred by the *Contractor* and for which the *Owner* might in any way be held responsible have been paid in full up to the previous progress payment, except for amounts properly retained as a holdback or as an identified amount in dispute; and
  - .3 a Workplace Safety & Insurance Board Clearance Certificate.”

## **32. GC 5.8 WITHHOLDING OF PAYMENT**

- 32.1 Add new paragraph GC 5.8 WITHHOLDING OF PAYMENT as follows:

### **“GC 5.8 WITHHOLDING OF PAYMENT**

- “5.8.1 Upon notice to the *Contractor*, the *Owner* may, subject to the *Owner's* requirement to issue a *Notice of Non-Payment* under the *Construction Act*, withhold or retain all or any portion of any payment due to the *Contractor* under this *Contract* to ensure the performance of the *Work* or to protect the *Owner's* rights in respect of the events set out in this paragraph 5.8.1, but only such portion of any payment as is reasonably necessary for such purpose. The *Owner* may make such withholding or retention upon the occurrence and continuance of any of the following events:
  - .1 the *Contractor* is in default of any of its material obligations under this *Contract*;
  - .2 all or any part of such payment is attributable to *Work* which is defective or not performed in accordance with the *Contract Documents*;
  - .3 the *Contractor* has improperly failed to make prompt payments to its *Subcontractors* and *Suppliers* respecting *Work* for which the *Owner* has made payment to the *Contractor*; or
  - .4 the amounts described in section 17(3) of the *Construction Act*.
- 5.8.2 In the event of deficiencies or delays in the *Work* that the *Contractor* fails or refuses to address upon receiving notice of same in accordance with the requirements of the *Contract*, the *Owner* may, without limiting the remedies available to it under this *Contract* and subject to the *Owner's* requirement to issue a *Notice of Non-Payment* under the *Construction Act*, retain and set off as against any payments that would otherwise be owing to the *Contractor*, the reasonable costs of rectifying such deficiencies or delays as determined by the *Owner*.
- 5.8.3 In addition to any rights the *Owner* has pursuant to the *Construction Act* and subject to the *Owner's* requirement to issue a *Notice of Non-Payment* under the *Construction Act*, if a lien is registered against

the *Place of the Work* or served upon the *Owner*, or an action commenced against the *Owner*, by any *Subcontractor*, the *Owner* having made all payments currently due in accordance with the payment terms of the *Contract Documents*, the *Owner* shall have the right to withhold from any money otherwise due to the *Contractor*, the full amount claimed in the lien action plus an additional amount sufficient to satisfy all of the *Owner* expenses relating to such lien action, including legal and consulting costs. These funds, less expenses incurred, shall be released to the *Contractor* upon the full discharge of all liens and dismissal of all actions against the *Owner*."

### **33. GC 5.9 CONSTRUCTION LIENS**

33.1 Add new GC 5.9 – CONSTRUCTION LIENS as follows:

#### **"GC 5.9 – CONSTRUCTION LIENS**

- 5.9.1 Notwithstanding anything else in this PART 5 – PAYMENT, in the event a claim for lien is registered against title to the *Place of the Work* by the *Contractor*, a *Subcontractor* or a *Supplier*, or served on the *Owner* with regard to the *Project* by a *Subcontractor* or a *Supplier*, or the *Owner* receives a written notice of or claim for lien from a *Subcontractor* or a *Supplier*, the *Owner* shall be entitled to withhold any payment otherwise due to the *Contractor* until such time as such claims have been dealt with as provided below.
- 5.9.2 In the event that a claim for lien or a written notice of a lien is received by the *Owner* in relation to the *Project*, the *Contractor* shall, within ten (10) calendar days, at its sole expense, arrange for the vacating or the discharge of the claim for lien and/or the withdrawal of the written notice of lien or have the lien vacated pursuant to the *Construction Act*. If the *Contractor* commences an application to the Court to have the lien vacated, the *Contractor* shall provide the *Owner* with copies of all court documents submitted by the *Contractor* and the *Order* issued by the Court. If the lien is only vacated, the *Contractor* shall, if requested, undertake the *Owner's* defence of any subsequent action commenced in the respect of the lien at the *Contractor's* expense.
- 5.9.3 If the *Contractor* fails or refuses to take such steps as required under paragraph 5.9.2, the *Owner* shall, at its option, be entitled to take all steps necessary to vacate and/or discharge the claim for lien or the withdrawal of the written notice of lien, and all costs incurred by the *Owner* in doing so (including, without limitation, legal fees on a full indemnity basis and any payment which may ultimately be made out of or pursuant to security posted to vacate the lien) shall be the responsibility of the *Contractor*, and the *Owner* may deduct such amounts from the amounts otherwise due or owing to the *Contractor*.
- 5.9.4 Without limiting any of the foregoing, the *Contractor* shall satisfy all judgments and pay all costs resulting from any liens or any actions brought by a *Subcontractor* or *Supplier* in connection with any liens, or in connection with any other claim or lawsuit brought against the *Owner* by any person that provided services or materials to the *Project* which constituted part of the *Work*, and the *Contractor* shall indemnify the *Owner* for any and all costs (including, without limitation, legal fees on a solicitor and client basis) the *Owner* may incur in connection with such claims or actions.
- 5.9.5 Section 20(1) of the *Construction Act* does not apply to this *Contract* and no general lien arises under or in respect of the *Work*, such that all liens shall arise and expire on a lot-by-lot basis."

### **34. GC 6.1 OWNER'S RIGHT TO MAKE CHANGES**

34.1 Amend paragraph 6.1.2 by adding the following to the end of that paragraph:

"This requirement is of the essence and it is the express intention of the parties that any claims by the *Contractor* for a change in the *Contract Price* and/or *Contract Time* shall not be approved unless there has been compliance with PART 6 – CHANGES IN THE WORK. No course of conduct or dealing between the parties, no express or implied acceptance of alterations or additions to the *Work* and no claims that the *Owner* has been unjustly enriched by an alteration or addition to the *Work*, whether in fact there is any such unjust enrichment or not, should be the basis for a claim for additional payment under this *Contract* or a claim for any extension of the *Contract Time*."

34.2 Add new paragraph 6.1.3 as follows:

"The *Contractor* agrees that changes resulting from construction coordination, including but not limited to site surface conditions, site coordination, and *Subcontractor* and *Supplier* coordination, are included in the *Contract Price* and shall not entitle the *Contractor* to claim an addition to the *Contract Price* in relation to coordination."

### **35. GC 6.2 CHANGE ORDER**

35.1 Add new paragraph 6.2.3 as follows:

"The *Contractor* shall not be entitled to any additional compensation arising out of changes to the Work aside from the amounts determined and agreed to under this GC 6.2, or as provided in GC 6.3 – CHANGE DIRECTIVE. The *Contractor's* fee for overhead and profit related to a *Change Order* or *Change Directive* shall be as set out in the *Contract Documents*."

35.2 Add new paragraph 6.2.4 as follows:

"*Change Orders* are not valid and binding upon the *Owner* unless approved and executed in accordance with the *Owner's* internal approval processes."

### **36. GC 6.3 CHANGE DIRECTIVE**

36.1 Delete paragraph 6.3.6.3 in its entirety and replace it with the following:

".3 The *Contractor's* fee shall be as specified in paragraphs 6.2.3 and the *Contractor's* fee for overhead and profit shall be as set out in the *Contract Documents*."

36.2 Amend GC 6.3.7.10 by adding the following to the end of the paragraph:

", provided that such amounts are not caused by negligent acts, omissions, or default of the *Contractor* or *Subcontractor*;"

36.3 Delete GC 6.3.7.17 in its entirety including all subparagraphs.

36.4 Amend paragraph 6.3.12 by deleting the words "the adjustment shall be referred to the *Consultant* for determination" and replacing them with "the Dispute shall be resolved in accordance with Part 8 – DISPUTE RESOLUTION."

### **37. GC 6.4 CONCEALED OR UNKNOWN CONDITIONS**

37.1 Delete paragraph 6.4.2 in its entirety and replace it with the following:

"The *Owner* will promptly investigate such conditions. If the *Owner* determines that the conditions differ materially and would cause an increase or decrease in the *Contractor's* cost or time to perform the *Work*, the *Owner* will issue instructions for a change in the *Work* as provided in GC 6.2 – CHANGE ORDER or GC 6.3 – CHANGE DIRECTIVE. If the *Owner* determines that the conditions at the *Place of the Work* are not materially different or that no change in the *Contract Price* or the *Contract Time* is justified, the *Owner* will provide its reasons for this determination to the *Contractor* in writing."

37.2 Delete paragraph 6.4.3 in its entirety and replace it with the following:

"If the *Contractor* disputes the *Owner's* determination in paragraph 6.4.2, the *Dispute* shall be resolved in accordance with Part 8 – DISPUTE RESOLUTION."

37.3 Amend paragraph 6.4.4 by deleting the words "and GC 9.5 – MOULD" and substituting the words "GC 9.5 – MOULD and GC 9.6 – IMPACT ASSESSMENT."

37.4 Add new paragraph 6.4.5 as follows:

"The *Contractor* acknowledges that it has received the *Impact Assessment Reports* for the *Project* that are described in the *RFP* documents and that it has considered the mitigation measures described in the *Impact Assessment Reports* in the *Contract Price*. If the *Impact Assessment Reports* are not completed prior to the closing of the *RFP* submission deadline, any adjustments required to the *Contract Price* shall be determined in

accordance with GC 9.6.2.3. The *Impact Assessment Reports* are provided for information only and the *Owner* shall not be liable for any errors or omissions in the reports.”

- 37.5 Add new paragraph 6.4.6 as follows:

“The *Contractor* confirms that, prior to submitting its response to the *RFP* for the *Project*, it had the opportunity to carefully investigate the *Place of the Work* and applied to that investigation the degree of care and skill described in paragraph 3.12.1, given the amount of time provided between the issue of the *RFP* documents and the actual submission deadline for the *RFP*, the degree of access provided to the *Contractor* prior to submission of the response, and the sufficiency and completeness of the information provided by the *Owner*. The *Contractor* is not entitled to compensation or to an extension of the *Contract Time* for conditions which could reasonably have been ascertained by the *Contractor* by such careful investigation undertaken prior to the submission of its response.”

### 38. GC 6.5 DELAYS

- 38.1 Delete paragraph 6.5.1 in its entirety and replace it with the following:

“If the *Contractor* is delayed in the performance of the *Work* by an act or omission of the *Owner* or anyone employed or engaged by the *Owner* directly, contrary to the provisions of the *Contract Documents*, then the *Contract Time* shall be extended for such reasonable time as the *Owner* determines. The *Contractor* shall be reimbursed by the *Owner* for its reasonable direct costs directly flowing from the delay but excluding any indirect, consequential, or special damages.”

- 38.2 Delete paragraph 6.5.2 in its entirety and replace it with the following:

“If the *Contractor* is delayed in the performance of the *Work* by a stop work order issued by a court or other *Authority Having Jurisdiction* on account of a breach, violation, contravention, or a failure to abide by any laws, ordinances, rules, regulations, or codes or the advice, recommendations and instructions of public health officials directly by the *Owner*, the *Owner's Other Contractor(s)* and relating to the *Work* or the *Place of the Work* and providing that such order was not issued as the result of an act or fault of the *Contractor* or any person employed or engaged by the *Contractor* directly or indirectly, then the *Contract Time* shall be extended for such reasonable time as the *Owner* determines in consultation with the *Contractor*. The *Contractor* shall be reimbursed by the *Owner* for the reasonable direct costs directly flowing from the delay but excluding any indirect, consequential, or special damages.”

- 38.3 Delete paragraph 6.5.3 in its entirety and replace it with the following :

“6.5.3.1 If the performance of the *Work* or the performance of any other obligation(s) of a party to this *Contract* is delayed by *Force Majeure*, then the *Contract Time* shall be extended for such reasonable time as the *Owner* and the *Contractor* shall agree. The extension of time shall not be less than the time lost as a result of the event causing the delay, unless the *Contractor* and the *Owner* agree to a shorter extension. Neither party shall be entitled to payment for its costs incurred by such delays. Upon reaching agreement on the extension of the *Contract Time* attributable to the *Force Majeure* event, the *Owner* and the *Contractor* shall execute a *Change Order* indicating the length of the extension to the *Contract Time* and confirming that there are no costs payable by either party to the other for the extension of *Contract Time*.

6.5.3.2 Notwithstanding the foregoing, the *Owner* may issue a *Change Directive* requiring the *Contractor* to undertake those specific actions identified in the *Change Directive* as the *Contractor* can reasonably and safely initiate to remove or relieve either the *Force Majeure* or its direct or indirect effects on the *Project*, in which case the *Contract Price* will be adjusted in accordance with paragraph 6.3.7. If the *Contractor* fails within the time period specified in the *Change Directive* to take such action, then the *Owner* may, at its sole and absolute discretion and after it has given *Notice in Writing* to the *Contractor*, take some or all of such actions to partially or wholly remove or relieve such *Force Majeure* or its direct or indirect effects, and thereafter require the *Contractor* to resume the performance of the *Work*.”

- 38.4 Delete paragraph 6.5.4 in its entirety and replace it with a new paragraph 6.5.4:

“No extension of the *Contract Time* will be approved unless the *Contractor* provides *Notice in Writing* to the *Owner* within 3 *Working Days* of the date upon which the *Contractor* ought reasonably to have been aware of the delay contemplated in paragraphs 6.5.1, 6.5.2 or 6.5.3. For the *Notice in Writing* to be valid under this paragraph 6.5.4 it must include specific details about:

- .1 the cause of the delay;
- .2 the likely impact the delay will have on the *Contract Time* and details of the extension of time being requested; and
- .3 mitigation efforts, if any, undertaken by the *Contractor* or, where no mitigation efforts have been undertaken by the *Contractor*, the reasons why mitigation is either not possible or has not been undertaken by the *Contractor*.”

38.5 Add new paragraph 6.5.6 as follows:

“6.5.6 If the *Contractor* delays the performance of the *Work* and such delay is for a cause within the *Contractor*’s control, the *Contractor* shall pay to the *Owner* the per diem rate for liquidated damages specified in Article 10 of the *Contract* for each day of delay if *Ready-for-Takeover* is not achieved in accordance with the time specified in Article A-1.3. If the per diem rate for liquidated damages is not specified in the *Contract Documents*, the *Contractor* shall pay to the *Owner* the *Administration Costs* incurred by the *Owner* as a result of the delay.”

38.6 Add new paragraph 6.5.7 as follows:

“6.5.7 If the *Contractor* is delayed in the performance of the *Work* due to the replacement of a representative, worker, *Subcontractor* or *Supplier* pursuant to GC 3.5.4, 3.6.3 or 3.7.4, the *Contractor* shall pay to the *Owner* the per diem rate for liquidated damages specified in Article 10 of the *Contract* for each day of delay if *Ready-for-Takeover* is not achieved in accordance with the time specified in Article A-1.3. If the per diem rate for liquidated damages is not specified in the *Contract Documents*, the *Contractor* shall pay to the *Owner* the *Administration Costs* incurred by the *Owner* as a result of the delay.

38.7 Add new paragraph 6.5.8 as follows:

“6.5.8 If the *Contractor* disputes the determination by the *Owner* in paragraph 6.5.1 or paragraph 6.5.2, the *Dispute* shall be resolved in accordance with Part 8 – DISPUTE RESOLUTION.”

## **39. GC 6.6 CLAIMS FOR A CHANGE IN THE CONTRACT PRICE**

39.1 Amend paragraph 6.6.1 by deleting the words “and to the *Consultant*.”

39.2 Amend paragraphs 6.6.3 and 6.6.4 by deleting the word “*Consultant*” and replacing it with “other party.”

39.3 Delete paragraphs 6.6.5 and 6.6.6 in their entirety and replace them with the following:

“The other party, with respect to a claim made by a party under paragraph 6.6.1, shall make a determination by providing *Notice in Writing* to the claiming party within 30 *Working Days* after receipt of the claim by the other party, or within such other time period as may be agreed by the parties. If such determination is not acceptable to the claiming party, the claim shall be resolved in accordance with Part 8 – DISPUTE RESOLUTION.”

## **40. GC 7.1 OWNER’S RIGHT TO PERFORM THE WORK, TERMINATE THE CONTRACTOR’S RIGHT TO CONTINUE WITH THE WORK OR TERMINATE THE CONTRACT**

40.1 Delete paragraph 7.1.2 in its entirety and replace it with the following:

“If the *Contractor* neglects to prosecute the *Work* properly including failing or neglecting to comply with the requirements in GC 3.5 – CONSTRUCTION SCHEDULE or otherwise fails to comply with the requirements of the *Contract* to a substantial degree and the *Owner* determines that sufficient cause exists to justify such action, the *Owner* may, without prejudice to any other right or remedy the *Owner* may have, give the *Contractor Notice in Writing* that the *Contractor* is in default of the *Contractor*’s contractual obligations and instruct the *Contractor* to correct the default in the 5 *Working Days* immediately following the receipt of such *Notice in Writing*.”.

40.2 Amend paragraph 7.1.3.1 as follows:

Insert after the word “commences” the words “and is diligently proceeding with”.

- 40.3 Revise paragraph 7.1.3.2 by substituting the words “an acceptable schedule” with “a schedule *Acceptable* to the *Owner*”.
- 40.4 Amend paragraph 7.1.4.1 by deleting the words “provided the *Consultant* has certified such cost to the *Owner* and *Contractor*”.
- 40.5 Amend paragraph 7.1.4.2 by adding to the end of the paragraph the words “and within 5 *Working Days* publish a notice of termination (form 8) in accordance with the *Construction Act*.”
- 40.6 Delete paragraph 7.1.5.3 in its entirety and replace it with the following:
- “charge the *Contractor* the amount by which the full costs of finishing the *Work* as determined by the *Owner*, including compensation to the *Owner* for *Administration Costs* and a reasonable allowance to cover the cost of corrections to work performed by the *Contractor* that may be required under GC 12.3 – WARRANTY, exceeds the unpaid balance of the *Contract Price*. If the cost of finishing the *Work* is less than the unpaid balance of the *Contract Price*, the *Owner* shall pay the *Contractor* on the expiry of the warranty period specified in paragraph 12.3.1 for that portion of the *Work* performed by the *Contractor*, provided that such payment shall be made only in accordance with the requirements set out in GC 5.5 – FINAL PAYMENT and GC 5.8 - WITHOLDING FROM PAYMENT”.
- 40.7 Amend paragraph 7.1.5.4 by substituting the words “the difference” at the end of paragraph 7.1.5.4 with the words “for that portion of the *Work* performed by the *Contractor*, provided that such payment shall be made only in accordance with the requirements set out in GC 5.5 – FINAL PAYMENT and GC 5.8 - WITHOLDING FROM PAYMENT”.
- 40.8 Add new paragraph 7.1.7 as follows:
- “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 performance of the *Work* or terminate the *Contract* by giving *Notice in Writing* to that effect to the *Contractor* identifying the reason for the suspension and the expected length of the suspension. 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.”
- 40.9 Add new paragraph 7.1.8 as follows:
- “The *Contractor* upon receiving notice of suspension or termination from the *Owner* shall suspend all operations as soon as reasonably possible except 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. In the event of such suspension, the *Contractor* shall be reimbursed by the *Owner* for the reasonable costs incurred by the *Contractor* for such protection. 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.”
- 40.10 Add new paragraph 7.1.9 as follows:
- “During the period of suspension, the *Contractor* shall not remove from the *Place of the Work* any part of the *Work*, or any *Product* or materials without the consent of the *Owner*.”
- 40.11 Add new paragraph 7.1.10 as follows:
- “If the *Work* should be suspended for a period of 30 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 an omission of the *Contractor*, there shall be an equitable adjustment to the *Contract Time* and the *Contract Price* as agreed upon by the *Owner* and the *Contractor*.”
- 40.12 Add new paragraph 7.1.11 as follows:
- “If, after 30 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 the terms and conditions agreed upon by the *Owner* and the *Contractor*.”
- 40.13 Add new paragraph 7.1.12 as follows:



“The *Owner* may terminate this *Contract* at any time for any or no reason. Such termination shall be effective upon the date specified in the *Owner's Notice in Writing* advising of the termination of the *Contract* pursuant to this paragraph 7.1.12. In such event, the *Owner* shall pay for the actual and verifiable *Work* performed up to the effective date of termination, including demobilization costs, and for such additional costs, if any, directly flowing from and which are a reasonable consequence of the termination, but excluding any consequential, indirect or special damages, termination fees, penalties or levies, and any claims for loss of profit, lost deposits, or lost opportunity. The *Owner* shall not be liable to the *Contractor* for any other claims, costs or damages whatsoever arising from such termination of the *Contract*. Within 3 *Working Days* of termination by the *Owner*, the *Contractor* shall deliver a *Notice in Writing* to each of its *Subcontractors* and *Suppliers* confirming the effective date of the termination.”

#### **41. GC 7.2 CONTRACTOR'S RIGHT TO SUSPEND THE WORK OR TERMINATE THE CONTRACT**

41.1 Amend paragraph 7.2.1 by adding to the end of the paragraph the words “and within 5 *Working Days* publish a notice of termination (form 8) in accordance with the *Construction Act*.”

41.2 Amend paragraph 7.2.2, by:

(i) adding the following after the words “public authority” in the second line:

“on account of a breach, violation, contravention, or a failure to abide by any laws, ordinances, rules, regulations, or codes of *Authorities Having Jurisdiction*, directly by the *Owner* or the *Owner's Other Contractor(s)* and relating to the *Work* or the *Place of the Work*,”; and,

(ii) adding the following to the end of the paragraph:

“unless an acceptable arrangement for an extension of the *Contract Time* is agreed to by the *Contractor* and the *Owner*.”

41.3 Delete paragraphs 7.2.3.1 and 7.2.3.2 in their entirety and replace them with “Intentionally left blank”.

41.4 Delete paragraph 7.2.3.3 in its entirety and replace it with a new paragraph 7.2.3.3:

“.3 the *Owner* fails to pay the *Contractor* when due the amount certified by the *Owner* or awarded by arbitration or a Court, except where the *Owner* has a bona fide claim for set off; or”

41.5 Amend paragraph 7.2.3.4 by deleting all the words after “degree” and replacing them with “and the *Contractor* confirms by a detailed *Notice in Writing* to the *Owner* that sufficient cause exists. Such detailed written statement must contain particulars, including references to the *Contract Documents*, and supporting documentation demonstrating the alleged default by the *Owner*.”

41.6 Amend paragraph 7.2.4 by adding to the end of the paragraph the words “and within 5 *Working Days* publish a notice of termination (form 8) in accordance with the *Construction Act*.”

41.7 Delete 7.2.5 in its entirety and replace it with the following:

“If the *Contractor* terminates the *Contract* under the conditions described in this GC 7.2, 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 costs associated with termination, including the costs of demobilization, losses sustained on *Products* and construction machinery and equipment. The *Contractor* shall not be entitled to any recovery for any indirect, special or consequential losses.”

#### **42. GC 8.1 AUTHORITY OF THE CONSULTANT**

42.1 Amend paragraph 8.1.1 by deleting the words “which are not resolved in the first instance by findings of the *Consultant* as provided in GC 2.2 – ROLE OF THE CONSULTANT.”

42.2 Delete paragraph 8.1.2 in its entirety and replace it with “Intentionally left blank”.

42.3 Amend paragraph 8.1.3 by deleting the word “*Consultant*” and replacing it with “*Owner*” in each instance where it occurs in the paragraph.

#### 43. GC 8.2 ADJUDICATION

- 43.1 Delete GC 8.2 – ADJUDICATION in its entirety, including all subparagraphs thereunder.

#### 44. GC 8.3 NEGOTIATION, MEDIATION, ARBITRATION AND ADJUDICATION

- 44.1 Delete GC 8.3 – NEGOTIATION, MEDIATION, AND ARBITRATION, including all paragraphs thereunder and replace it with the following:

##### “GC 8.3 – NEGOTIATION, MEDIATION, ARBITRATION AND ADJUDICATION

“8.3.1 Save and except where the *Contractor* has given an undertaking, in accordance with the *Construction Act*, to refer a dispute to *Adjudication*, prior to delivering a notice of *Adjudication* in a form prescribed by the *Construction Act*, the parties agree to first address all *Disputes* in a tiered approach as follows:

- .1 A *Dispute* shall be referred to the *Owner's* project manager for the *Project* and a representative of the *Contractor* of the equivalent seniority or position for resolution within a period not to exceed thirty (30) days.
- .2 If unresolved, after following the process described in paragraph 8.3.1.1, the *Dispute* shall be referred to the *Owner's* Director or Vice President who is responsible for the *Project* and an employee of the *Contractor* of the equivalent seniority or position for resolution within a period not to exceed thirty (30) days.
- .3 If unresolved after following the process described in paragraph 8.3.1.2, and only at the election of the *Owner*, the *Dispute* shall be referred to the CEO of the *Owner* and the most senior executive employee of the *Contractor* for resolution within a period not to exceed thirty (30) days. If the *Owner* does not elect, at its sole option, to proceed under this paragraph 8.3.1.3, the *Dispute* may proceed to under either step as described in paragraphs 8.3.2 or 8.3.3.

8.3.2 If the *Dispute* remains unresolved despite the parties' attempting to resolve it following the process in paragraph 8.3.1, a party may elect to proceed with the *Dispute* by way of an *Adjudication*. If a party elects to proceed by way of an *Adjudication*, the other party shall not be bound to proceed by way of an *Adjudication*, save and except where the parties are obliged under the *Construction Act*. The following procedures shall apply to any *Adjudications* the parties engage in under the *Construction Act*:

- .1 any hearings shall be held in the offices of the *Owner*, or, if such offices are unavailable, another venue as the parties may agree and which is acceptable to the adjudicator;
- .2 the *Adjudication* shall be conducted in English;
- .3 each party may be represented by counsel throughout an *Adjudication*;
- .4 there shall not be any oral communications with respect to issues in dispute that are the subject of an *Adjudication* between a party and the adjudicator unless it is made in the presence of both parties or their legal representatives; and
- .5 a copy of all written communications between the adjudicator and a party shall be given to the other party at the same time.

8.3.3 Any documents or information disclosed by the parties during an *Adjudication* are confidential and the parties shall not use such documents or information for any purpose other than the *Adjudication* in which they are disclosed and shall not disclose such documents and information to any third party, unless otherwise required by law, save and except the adjudicator.

8.3.4 In respect of any claim or dispute, if the *Contractor* fails to comply with any of the notice requirements set out in the *Contract Documents* then the *Contractor* shall be barred from advancing such claim(s) or dispute(s) and shall have no entitlement whatsoever in respect of such claim(s) or dispute(s) (including to an increase in payment under the *Contract*, or an extension of *Contract Time*) and by failing to comply with the notice requirements waives the right to make any such claim(s) or dispute(s) in an *Adjudication*

or in any other form of dispute resolution available under this *Contract* or at law. This GC 8.3.4 shall operate conclusively as an estoppel and bar in the event such claims or disputes are brought in an *Adjudication* or other form of dispute resolution and the *Owner* may rely on this GC 8.3.4 as a complete defence to any such claims or disputes.

8.3.5 The parties hereby acknowledge and agree:

- .1 that counterclaims, claims of set-off or the exercise or use of other contractual rights that permit the *Owner* to withhold, deduct or retain from monies otherwise owed to the *Contractor* under the *Contract* may be referred to, and included as part of, *Adjudications* under the *Construction Act*;
- .2 that disputes related to the termination or abandonment of the *Contract*, as well as any disputes that arise or are advanced following the termination or abandonment of the *Contract*, shall not be referred to *Adjudication* under the *Construction Act*;
- .3 that notice(s) of *Adjudication*, with respect to any dispute or claim relating to the *Project*, shall not be given, and no *Adjudication* shall be commenced following *Ready-for-Takeover*, abandonment, or termination of the *Contract*;
- .4 that any *Adjudication* between the *Contractor* and a *Subcontractor* or a *Supplier* that relates to an *Adjudication* between the *Owner* and the *Contractor* shall be joined together to be adjudicated by a single adjudicator, provided that the adjudicator agrees to do so, and the *Contractor* shall include a provision in each of its subcontracts that contain an equivalent obligation to this GC 8.3.5.4; and
- .5 that, other than where the *Contractor* is obliged to commence an *Adjudication* pursuant to an undertaking under the *Construction Act*, neither the *Owner* nor the *Contractor* shall commence an *Adjudication* during the *Restricted Period (Adjudication)*.

8.3.6 If the *Dispute* remains unresolved despite the parties attempting to resolve it following the process in paragraph 8.3.1, or following a determination of the *Dispute* pursuant to an *Adjudication* under paragraph 8.3.2, a party may elect to proceed with the *Dispute* under a mediation model to be agreed upon by the parties. A party shall elect to proceed to mediation no later than: (i) ten (10) days following the expiry of the timeline set out in paragraphs 8.3.1.2 or 8.3.1.3, whichever is the later, or (ii) ten (10) days following the rendering of the adjudicator's determination following an *Adjudication*. Where a party elects to proceed with mediation within the timelines prescribed in this paragraph 8.3.6, the other party shall be bound to proceed to mediation. No later than ten (10) days after a party makes an election to proceed to mediation, or such longer period as may be mutually agreed between the parties, the parties shall enter into a mediation agreement which shall set out the mediation process and designate the mediator.

8.3.7 If neither party elects to proceed to mediation within the timelines outlined in paragraph 8.3.5 or 8.3.6, or the parties are unable to enter into a mediation agreement within the time limits, the matter shall proceed and be finally resolved by binding arbitration by a single arbitrator in accordance with the *Arbitration Act* by an arbitration agreement to be executed by the parties and the arbitrator. The parties shall mutually agree on the selection of the arbitrator, failing which the arbitrator shall be appointed in accordance with the *Arbitration Act*. The arbitration proceedings shall take place in Toronto, Ontario, Canada. The language of the arbitration shall be English. The parties agree that any arbitration award, including with respect to costs, shall be binding on the parties, may be enforced in any court of competent jurisdiction and shall be final and no appeals or judicial reviews shall be permitted as of right or by application to any court of competent jurisdiction, except on errors of law. The parties shall each bear their own costs and their proportionate share of any joint costs of arbitration, subject to any award of an arbitrator.

8.3.8 The timelines in GC 8.3. may be amended by mutual agreement of the parties."

#### **45. GC 8.4 RETENTION OF RIGHTS**

- 45.1 Amend paragraph 8.4.1 by deleting all the words after “the party has” and replacing them with “complied with the provisions of GC 8.3.”
- 45.2 Amend paragraph 8.4.2 by replacing “paragraph 8.3.6” with “paragraph 8.3.7”.
- 45.3 Add new paragraph 8.4.3 as follows:
- “8.4.3 If the parties proceed with an arbitration as described in paragraph 8.3.7, 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. Provided nothing in this paragraph 8.4.3 shall prevent the *Contractor* from taking the steps required by the *Construction Act* to preserve and/or perfect a lien to which it may be entitled.”

#### **46. GC 9.1 PROTECTION OF WORK AND PROPERTY**

Amend paragraph 9.1.1.1 by adding the following words at the end of that paragraph:

“...which the *Contractor* could not reasonably have discovered applying the degree of care and skill described in paragraph 3.4.1 to its review of the *Contract Documents*.”

- 46.1 Delete paragraph 9.1.2 in its entirety and replace it with the following new paragraph 9.1.2:
- “Before commencing any work, the *Contractor* shall determine the locations of all underground utilities and structures indicated in the *Contract Documents* or that are discoverable by applying to an inspection of the *Place of Work* the degree of care and skill described in paragraph 3.12.1.”
- 46.2 Add new paragraph 9.1.5 as follows:
- “The *Contractor* shall neither undertake to repair and/or replace any damage whatsoever to the work of *Other Contractors*, or to adjoining property, nor acknowledge 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 the *Owner*. However, where there is danger to life or public safety, the *Contractor* shall take such emergency action as it deems necessary to remove the danger.”

#### **47. GC 9.2 TOXIC AND HAZARDOUS SUBSTANCES**

- 47.1 Amend paragraph 9.2.7.3 by deleting the words “*Consultant* may recommend in consultation with the *Contractor* and” and replacing them with the words “*Owner* may determine in consultation with”.
- 47.2 Add new paragraph 9.2.10 as follows:
- “The *Contractor* shall indemnify and hold harmless the *Owner*, their agents and employees from and against claims, demands, losses, costs, damages, actions, suits or proceedings arising out of or resulting from exposure to, or the presence of, toxic or hazardous substances or materials which were either brought on to the *Place of the Work* by the *Contractor*, or anyone for whom the *Contractor* is in law responsible, and mishandled or handled negligently or improperly or which are otherwise mishandled or handled negligently or improperly by the *Contractor*, or anyone for whom the *Contractor* is in law responsible, thereby creating exposure to toxic or hazardous substances or materials. This obligation shall not be construed to negate, abridge, or reduce other rights or obligations of indemnity set out in GC 13.1 – INDEMNIFICATION or elsewhere in the *Contract* or which otherwise exist respecting a person or party described in this paragraph.”

#### **48. GC 9.4 CONSTRUCTION SAFETY**

- 48.1 Delete paragraph 9.4.1 in its entirety and replace it with the following:
- “9.4.1 The *Contractor* shall be 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 shall be responsible for initiating, maintaining and supervising all safety precautions

and programs in connection with the performance of the *Work*. Without limiting the generality of the foregoing, the *Contractor* shall comply with the occupational health and safety laws and regulations and any orders, recommendations and restrictions made by the federal, provincial or municipal governments and the advice, recommendations and instructions of public health officials, as they apply to the *Place of the Work*. If the *Place of the Work* is located on the *Owner's* premises, the *Contractor* shall comply with all the *Owner's* policies and directions to ensure the health and safety of the *Owner's* employees and *Other Contractors* as well as the *Contractor's* employees, *Subcontractors* and *Suppliers*. The *Contractor* shall submit its Health and Safety Plan to the *Owner* for *Acceptance* prior to commencing the *Work*, which Plan shall include all the elements required by the *Specifications* for a Health and Safety Plan. The *Contractor* shall indemnify and hold harmless the *Owner* for any fines, penalties or other costs imposed or assessed on or incurred by the *Owner* arising from the *Contractor's* failure to comply with the applicable health and safety laws, any orders, recommendations and restrictions of the federal, provincial or municipal governments or the advice, recommendations and instructions of public health officials. "

48.2 Amend GC 9.4.2 by adding the following words after "and the Contractor":

" , Subcontractors and Suppliers".

48.3 Amend GC 9.4.3 by adding the following words after "and the Contractor":

" , Subcontractors and Suppliers".

48.4 Delete paragraph 9.4.4 in its entirety and replace it with the following:

"9.4.4 Prior to the commencement of the *Work*, the *Contractor* shall submit to the *Owner*:

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

48.5 Delete paragraph 9.4.5 in its entirety and replace it with the following:

"9.4.5 The *Contractor* shall indemnify and save harmless the *Owner*, its agents, officers, directors, employees, consultants, successors and assigns from and against the consequences of any and all safety infractions committed by the *Contractor* under the *Occupational Health and Safety Act* and any breaches of the *Emergency Management and Civil Protection Act* and related orders, recommendations or regulations, including the payment of legal fees and disbursements on a full indemnity basis."

48.6 Add new paragraph 9.4.6 as follows:

"9.4.6 The *Contractor* shall ensure that it and its employees, *Subcontractors* and *Suppliers* are aware of and, while being on the *Owner's* property, comply with the *Owner's* policies, including its Fit for Duty Policy, and with the Ontario Northland Operating Manual, including the Current Summary Bulletin, current Ontario Northland Time Table, C.R.O.R. 2022, Infrastructure Special Instructions, Dangerous Goods and Ontario Northland General Operating Instructions, as applicable."

48.7 Add new paragraph 9.4.7 as follows:

"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 to protect and preserve the property. The *Contractor* shall notify the *Owner* of such emergency as promptly as is practical under the circumstances."

**49. GC 9.5 MOULD**

- 49.1 Amend paragraph 9.5.3.3 by deleting the words “*Consultant* may recommend in consultation with the *Contractor* and” and replacing them with the words “*Owner* may determine in consultation with”.

**50. GC 9.6 IMPACT ASSESSMENT**

- 50.1 Add new GC 9.6 – IMPACT ASSESSMENT as follows:

**“GC 9.6 IMPACT ASSESSMENT**

9.6.1 The *Contractor* shall be responsible for:

- .1 ensuring that any potential impacts and areas of concern identified in the *Contract Documents* or *Impact Assessment Reports*, if provided, are mitigated during the *Work*; and,
- .2 identifying any previously unknown impacts relating to fish, navigable waters, species at risk, vegetation, wildlife, socio-economic and heritage that arise prior to commencing the *Work* and during the *Work*.

9.6.2 If the *Contractor* or *Owner* observes or reasonably suspects the presence of any impacts described in paragraph 9.6.1.2 that are not mentioned or accounted for in the *Contract Documents* or *Impact Assessment Reports*, if any, and related mitigation plans,

- .1 the observing party shall immediately report the circumstances to the other party;
- .2 the *Contractor* shall immediately take reasonable steps, including stopping the *Work* if necessary, to ensure that any potential impacts are mitigated; and,
- .3 if the *Owner* and *Contractor* do not agree on the existence, significance or mitigation measures for the impact, the *Owner* shall retain and pay for an independent qualified expert to investigate and determine the issue and the parties will enter into a *Change Order* if the mitigation measures will cause an increase or decrease in the *Contractor's* cost or time to perform the *Work*.

9.6.3 If the *Contractor* fails to comply with the requirements in paragraph 9.6.2, the *Contractor* shall:

- .1 be responsible for all costs incurred by the *Owner* or the *Contractor* to mitigate the damage caused due to the failure;
- .2 not be entitled to request a *Change Order* relating to the failure to comply; and
- .3 indemnify the *Owner* and hold it harmless from any claims, damages, costs, fines or other expenses, including reasonable legal fees and expenses, relating to or arising from the *Contractor's* failure to comply with paragraph 9.6.2.”

**51. GC 9.7 ENVIRONMENTAL PROTECTION FOR CONSTRUCTION IN AND AROUND WATERBODIES**

- 51.1 Add new GC 9.7 – ENVIRONMENTAL PROTECTION FOR CONSTRUCTION IN AND AROUND WATERBODIES as follows:

**“GC 9.7 ENVIRONMENTAL PROTECTION FOR CONSTRUCTION IN AND AROUND WATERBODIES**

9.7.1 The *Contractor* shall comply with the environmental protection requirements and mitigation measures that apply to construction involving work in and around waterbodies and on waterbody banks as set out in OPSS.PROV 182.

9.7.2 Pursuant to section 38(4) of the *Fisheries Act*, the *Contractor* has an obligation to notify the Department of Fisheries & Oceans(“DFO”) when the *Work* results in the unauthorized death of fish or a harmful alteration, disruption or destruction (“HADD”) of fish habitat or where there is imminent danger that the death of fish or HADD of fish habitat could occur. The notification shall be done using the form attached as Schedule D. The *Contractor* shall also notify the *Owner* of any such incidents. Failure to notify DFO of such incidents is a federal offence.

- 9.7.3 In accordance with the *Fisheries Act*, notification must be made without delay to DFO after the *Contractor* ensures the immediate health and safety risks are managed at the *Place of the Work*. Updates to DFO may be provided at a later time, if required.
- 9.7.4 All spills and sediment releases into a waterbody during the *Work* must be immediately reported by the *Contractor* to the *Consultant* and the *Owner* who must report the release to the Spills Action Centre (“SAC”) operated by the Ministry of Environment, Conservation and Parks (“MECP”) at 800-288-6060. If the *Owner* is not available, the *Contractor* shall report the incident to SAC. The *Contractor* shall take all reasonable measures to mitigate or remedy any adverse effects that result from the occurrence or might reasonably be expected to result from it.”

## **52. GC 9.8 ENVIRONMENTAL SPILLS AND RELEASES**

- 52.1 Add new GC 9.8 – ENVIRONMENTAL SPILLS AND RELEASES as follows:

### **“GC 9.8 ENVIRONMENTAL SPILLS AND RELEASES**

- 9.8.1 All spills and releases of hazardous substances in the course of the *Work* must be immediately reported by the *Contractor* to the *Owner* who will report the spill or release to the MOECP SAC. If the the *Owner* is not available, the *Contractor* shall report the incident to the MOECP SAC and the ONTC RTC at 800-558-4129 or EXT 141.
- 9.8.2 The *Contractor* shall take immediate steps to mitigate the damage to the environment and contain the spill or release. If the *Contractor* does not take timely action or, if the *Contractor* is not available, the *Owner* may direct others to remedy the situation.
- 9.8.3 If the spill or release was the fault of the *Contractor*, the remedial work shall be completed at the cost of the *Contractor* and with no additional cost to the *Owner* and the *Owner* shall be entitled to seek reimbursements for all costs associated with the remedial work including the cost of work done by third parties.
- 9.8.4 If the spill or release was not the fault of the *Contractor*, the *Owner* shall pay for the remedial work.”

## **53. GC 10.1 TAXES AND DUTIES**

- 53.1 Amend paragraph 10.1.2 by adding the following sentence at the end of that paragraph:

“For greater certainty, the Contractor shall not be entitled to any mark up for overhead or profit on any increase in such taxes and duties and the *Owner* shall not be entitled to any credit relating to mark up for overhead or profit on any decrease in such taxes.”

- 53.2 Add new paragraph 10.1.3 as follows:

“Where an exemption or a recovery of sales taxes, customs duties, excise taxes or *Value Added Taxes*, rebates, or monies from incentive programs is applicable to the *Contract*, the *Contractor* shall, at the request of the *Owner*, assist, join in, or make application for any exemption, recovery or refund of all such taxes, duties, rebates and incentives and all amounts recovered or exemptions obtained shall be for the sole benefit of the *Owner*. The *Contractor* agrees to endorse over the *Owner* any cheques received from the federal or provincial governments, or any other *Authority Having Jurisdiction*, as may be required to give effect to this paragraph 10.1.3.”

- 53.3 Add new paragraph 10.1.4 as follows:

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

- 53.4 Add new paragraph 10.1.5 as follows:

“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*.”

- 53.5 Add new paragraph 10.1.6 as follows:

"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."

53.6 Add new paragraph 10.1.7 as follows:

"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 GC 10.1."

#### **54. GC 10.2 LAWS, NOTICES, PERMITS, AND FEES**

54.1 Delete paragraph 10.2.2 in its entirety and replace it with the following:

"The *Owner* has Crown immunity from the *Building Code Act* and the *Planning Act* and may not be obtaining building permits or development approvals. The *Owner* shall obtain and pay for any permanent easements over Third Party Property required for the completion of the Work. The *Contractor* shall be responsible for all other permissions for access to Third Party Property."

54.2 Add to the end of paragraph 10.2.4. the following:

"Whenever standards of law, ordinances, rules, regulations, codes and orders relating to the *Work* differ, the most stringent standards shall govern."

54.3 Amend paragraph 10.2.5 by adding the words, "Subject to paragraph 3.4.1" to the beginning of the paragraph.

- and -

Substitute the word "*Owner*" for the word "*Consultant*"

-and-

Add the following to the end of the second sentence:

"...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 *Owner*."

54.4 Amend paragraph 10.2.6 by adding the following sentence at the end of that paragraph:

"In the event the *Owner* suffers loss or damage as a result of the *Contractor's* failure to comply with paragraph 10.2.5, and notwithstanding any limitations described in paragraph 13.1.1, the *Contractor* agrees to indemnify and to hold harmless the *Owner* from and against any claims, demands, losses, costs, damages, actions, suits or proceedings resulting from such failure by the *Contractor*."

54.5 Amend paragraph 10.2.7 by adding the words "which changes were not, or could not have reasonably been known to the *Owner* or the *Contractor*, as applicable, at the time of deadline for submission of responses to the *RFP* and which changes did not arise as a result of a public emergency or other *Force Majeure* event" to the second line, after the words "authorities having jurisdiction".

54.6 Add new paragraph 10.2.8 as follows:

"The *Contractor* shall furnish necessary certificates as evidence that the *Work* installed conforms with laws and regulations of authorities having jurisdiction, including certificates of compliance for *Owner's* occupancy or partial occupancy. These certificates are to be final certificates giving complete clearance of the *Work*."



**55. GC 10.3 PATENT FEES**

- 55.1 Delete paragraph 10.3.2 in its entirety.

**56. GC 10.4 WORKERS' COMPENSATION**

- 56.1 Add new paragraph 10.4.2 as follows:

"10.4.2 The *Contractor* shall be solely responsible for its employees and officers and for its *Subcontractors* and their officers and employees, including ensuring that all required employer filings, contributions, deductions, and payments are made or remitted, as the case may be, with respect to applicable employer health taxes and under the *Employment Insurance Act*, the Canada Pension Plan, the Ontario *Workplace Safety and Insurance Act, 1997*, and all equivalent legislation in any other applicable jurisdiction. Without limiting the generality of the foregoing, the *Contractor* shall indemnify, defend and hold harmless the *Owner*, its directors, officers, and employees from all claims, demands, actions, suits or proceedings arising from any health, medical, disability or similar claims which *Contractor's* employees or officers or any of its *Subcontractors* or their officers or employees may make against the *Owner*, its directors, officers, or employees during or after the *Contract Time*, whether or not such claims are attributable to the *Contractor's* or *Subcontractor's* performance of the *Work* or related to the *Contractor's* obligations under this *Contract*."

**57. GC 11.1 INSURANCE**

- 57.1 Delete all references to "the *Consultant*" in GC 11.1.

- 57.2 Amend the title of GC 11 to add the words "CONTRACT SECURITY" at the end of the title.

- 57.3 Delete items 1 to 8 in paragraph 11.1.1 and in CCDC 41 and replace with the following:

1. General Liability insurance shall be with limits of not less than \$10,000,000 per occurrence, an aggregate limit of not less than \$10,000,000 within any policy year with respect to completed operations, and a deductible not exceeding \$50,000. To achieve the desired limit, umbrella or excess liability insurance may be used. Subject to satisfactory proof of financial capability by the *Contractor*, the *Owner* may agree to increase the deductible amounts. The insurance coverage shall not be less than the insurance provided by IBC Form 2100 (including an extension for a standard provincial and territorial form of non-owned automobile liability policy) and IBC Form 2320 including but not limited to:
  - .1 Bodily injury, death, and property damage including loss of use thereof.
  - .2 Premises and operations liability.
  - .3 Products and completed operations liability.
  - .4 Blanket contractual liability.
  - .5 Cross liability and severability of interest clauses.
  - .6 Contingent employer's liability.
  - .7 Personal injury liability.
  - .8 Owner's and Contractor's protective coverage.
  - .9 Broad form property damage.
  - .10 Elevator and hoist liability.
  - .11 Liability for attached machinery, including loading and unloading.
  - .12 Extension of coverage shoring; blasting; excavation; underpinning; demolition; on work; below ground surface work, including tunneling and grading, if applicable to the *Project*.

The General Liability Insurance shall not include any exclusion relating to working in the vicinity of railway operations."

2. Automobile liability insurance in respect of vehicles that are required by law to be insured under a contract by a Motor Vehicle Liability Policy, shall have limits of not less than \$5,000,000 inclusive per occurrence for bodily injury, death, and damage to property, covering all vehicles owned or leased by the *Contractor*.
3. Manned Aircraft and watercraft liability insurance with respect to owned or non-owned aircraft and watercraft (if used directly or indirectly in the performance of the *Work*), including use of additional premises, shall have limits

of not less than \$10,000,000 inclusive per occurrence for bodily injury, death and damage to property including loss of use thereof and limits of not less than \$10,000,000 for aircraft passenger hazard. Such insurance shall be in a form acceptable to the *Owner*.

4. Unmanned aerial vehicle liability insurance with respect to owned or non-owned aircraft (if used directly or indirectly in the performance of the *Work*), shall have limits of not less than \$5,000,000 per occurrence or accident for bodily injury, death and damage to property or such amounts as required by any applicable law or regulation.
5. Contractors' equipment insurance coverage written on an "all risks" basis covering *Construction Equipment* used by the *Contractor* for the performance of the *Work*, shall be in a form Acceptable to the *Owner* and shall not allow subrogation claims by the insurer against the *Owner*. Subject to satisfactory proof of financial capability by the *Contractor* for self-insurance, the *Owner* may agree to waive the equipment insurance requirement.
6. Professional Liability Insurance (if applicable). This policy shall cover risks of errors, omissions or negligent acts in the performance of professional services for the *Project*. The Named Insureds are to be approved and accepted for coverage by the Insurer. This policy shall provide for a limit of liability of not less than \$1,000,000 per claim and \$2,000,000 in the aggregate (inclusive of defence costs and expenses).
7. Technology Liability Insurance (if applicable) for financial loss arising out of an error, omission, or negligent act in the rendering of services in an amount not less than **\$5,000,000** per claim and **\$5,000,000** aggregate. Such policy shall be on a claims made basis and shall provide coverage for damages and defense costs. The Technology Professional Liability policy will also include an insuring agreement for cyber or network security and privacy liability insurance, covering financial loss arising out of actual or potential unauthorized access, unauthorized use, and a failure to protect confidential information which results in loss or misappropriation of such information in both electronic and non-electronic format. Such insurance will have a limit of an amount not less than \$5,000,000 per claim and \$5,000,000 aggregate. The *Contractor* shall maintain said liability coverage in place for a three-year period after termination of the *Contract* by way of annual policy renewal, or purchase of extended reporting period.
8. "All Risks" Builders Risk and Boiler & Machinery Insurance (if applicable) shall have limits of not less than the sum of 1.1 times *Contract Price*, plus any property, including design services, the *Owner* provides for incorporation into the *Work*. This policy shall cover all risks of direct physical loss or damage to the *Project*, including but not limited to the perils of earthquake and flood, subject to policy sub limits, warranties and exclusions and shall not be less than the insurance provided by IBC Forms 4042 and 4047 or their equivalent replacement. This insurance shall cover all property forming part of the *Project*, and goods and materials to be incorporated in the *Project* while at the *Place of the Work*, in transit, or while in off-site storage. It shall not provide coverage for the *Contractor's* or *Subcontractors'* equipment other than scaffolding, formwork, fences, shoring, hoarding, falsework, tarpaulins and temporary buildings in connection with the *Work*. The insurance shall not have a deductible greater than \$50,000.
9. Pollution Liability Insurance for an amount not less than \$5,000,000 per occurrence and in the aggregate and a deductible of not more than \$50,000. This policy shall be written on either an Occurrence or Claims Made Form and will provide coverage on a sudden and accidental, and gradual pollution events basis for on-site cleanup and remediation as well as on-site and off-site third party claims for bodily injury and property damage, cleanup and remediation.

## **58. GC 11.2 CONTRACT SECURITY**

58.1 Add new GC 11.2 – CONTRACT SECURITY as follows:

### **"GC 11.2 CONTRACT SECURITY**

- 11.2.1 If required by the *RFP*, the *Contractor* shall provide a performance bond and a labour and materials payment bond, each issued by a bonding company acceptable to *Owner* and licensed to issue such instruments in the *Place of the Work*, in the amounts and forms as follows:
  - .1 Amount of performance bond shall be equal to not less than 50% of the *Contract Price* in the form prescribed by the *Construction Act*.

- .2 Amount of labour and material payment bond shall be equal to not less than 50% of the *Contract Price* in the form prescribed by the *Construction Act*.
- 11.2.2 The bonds provided in accordance with paragraph 11.2.1 shall guarantee the faithful performance of the *Contract* in accordance with the *Contract Documents*, including the requirements for warranties provided for the GC 12.3 – WARRANTY, and the payment of all obligations incurred in the event of the *Contractor's* default, including but not limited to the following:
  - .1 the payment of legal, accounting, architectural, engineering and other professional services expenses incurred by the *Owner* in determining the extent of Work executed and any additional Work required as a result of the interruption of the *Work*, and its completion; and
  - .2 the payment of additional expenses to the *Owner* in the form of security guard services, light, heat, power, loss of use of premises, and other related costs, payable over the period between the default of the *Contract* and completion of the *Work*.
- 11.2.3 Without limiting the foregoing in any way, the bonds shall indemnify and hold harmless the *Owner* for and against costs and expenses (including legal and consultant services and court costs) arising out of or as a consequence of any default of the *Contractor* under this *Contract*.
- 11.2.4 The *Contractor* shall be responsible for notifying the surety company of any changes made to the *Contract Documents* or the *Contract Price* during the course of the *Work*.
- 11.2.5 The premiums for bonds required by the *Contract Documents* shall be included in the *Contract Price*.
- 11.2.6 Should the *Owner* require additional bonds by the *Contractor* or any of his *Subcontractors*, after the receipt of bids for the *Work*, the *Contract Price* shall be increased by the actual costs attributable to providing such bonds. The *Contractor* shall promptly provide the *Owner* with any such bonds that may be required."

## **59. GC 12.1 READY-FOR-TAKEOVER**

59.1 Delete GC 12.1.1 in its entirety and replace it with the following:

- "12.1.1 *Ready-for-Takeover* shall be achieved when all of the following has occurred, as verified and *Accepted* by the *Owner*:
- .1 *Substantial Performance of the Work* has been achieved, as verified by the *Owner*;
  - .2 the appropriate permits (if any) for the *Place of the Work* have been obtained from the authorities having jurisdiction;
  - .3 the *Work* to be performed under the *Contract* has satisfied the requirements for deemed completion in accordance with Section 2(3) of the *Construction Act*;
  - .4 final cleaning and waste removal, as required by the *Contract Documents*;
  - .5 the *Contractor* has delivered to the *Owner* all inspection certificates from authorities having jurisdiction with respect to any component of the *Work* which has been completed;
  - .6 subject only to GC 12.1.2, the entire *Work* has been completed to the requirements of the *Contract Documents*, including completion of all items on the punch list prepared at the time of *Substantial Performance of the Work* and the *Work* is being used for its intended purpose, and is so certified by the *Consultant*;
  - .7 subject only to GC 12.1.2, the *Contractor* has submitted to the *Owner* in a collated and organized matter, all *Close-Out Documentation* and any other materials or documentation required by the *Contract Documents*;
  - .8 subject only to GC 12.1.2, all *Products*, systems and components of the *Project* have been commissioned and certified for operation and accepted by the *Owner*, and

- .9 subject only to GC 12.1.2, the *Contractor* has submitted to the *Owner* full and complete *As-built Record Drawings* and *Specifications* revised by the *Contractor* to reflect the as-built state of the *Work*, clearly showing changes to the *Drawings* and *Specifications* from the original *Contract Documents*, all of which have been *Accepted* by the *Owner* acting reasonably.”

59.2 Delete GC 12.1.2 in its entirety and replace it with the following:

“12.1.2 The *Owner* may, in its sole, absolute, and unfettered discretion, waive compliance with a requirement, or a part thereof, for achieving *Ready-for-Takeover* set out in GC 12.1.1.6 to 12.1.1.9 (inclusive). Where the *Owner* exercises the discretion afforded under this GC 12.1.2, the *Contractor* shall be required to comply with GC 5.5.1.3 as part of its application for final payment and the *Owner* and the *Contractor* shall establish a reasonable date for completing the *Work*.”

59.3 Delete GC 12.1.3 in its entirety and replace it with the following:

“12.1.3 When the *Contractor* considers the *Work* has attained *Ready-for-Takeover*, it shall submit a written application to the *Owner* for review.”

59.4 In GC 12.1.4, delete the words “list and” from the second line.

59.5 Delete GC 12.1.5 in its entirety and replace it with the following:

“12.1.5 Following the confirmation of the date of *Ready-for-Takeover* by the *Owner*, the *Contractor* may submit a final application for payment in accordance with GC 5.5 – FINAL PAYMENT.”

59.6 Delete GC 12.1.6 in its entirety.

## **60. GC 12.2 EARLY OCCUPANCY BY THE OWNER**

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

## **61. GC 12.3 WARRANTY**

61.1 Amend paragraph 12.3.2 by adding the words, “Subject to paragraph 1.1.3....” at the beginning of that paragraph.

61.2 Delete paragraphs 12.3.4, and 12.3.5 and replace it with the following paragraphs:

“12.3.4 The *Contractor* shall correct, at no additional cost to the *Owner*, defects or deficiencies in the *Work* that appear, prior to and during the *Warranty Period*. Any *Work* repaired or replaced during the *Warranty Period* shall be re-warranted for an additional 12 months from the date of completion of the repair or replacement. Notwithstanding the expiration of the *Warranty Period*, the *Contractor* shall not be relieved of its obligations to correct any defects or deficiencies in the *Work* of which *Notice in Writing* has been given to the *Contractor* prior to the expiration of the *Warranty Period*.

12.3.5 The *Owner* shall provide *Notice in Writing* to the *Contractor* of defects and deficiencies in the *Work* discovered during the *Warranty Period*. The *Contractor* shall submit a remediation plan for the permanent rectification of the defects and deficiencies within 2 *Working Days* after delivery of the *Notice in Writing*, including the schedule for the remediation work to be completed. Upon *Acceptance* by the *Owner* of the remediation plan, the *Contractor* shall remediate the defects and deficiencies in accordance with the schedule set out in the *Accepted* plan. *Acceptance* by the *Owner* of a remediation plan does not prohibit the *Owner* from pursuing other remedies it may have against the *Contractor* arising from the defects and deficiencies in the *Work*.

61.3 Amend paragraph 12.3.6 by adding at the end of the paragraph the following:

“The *Extended Warranty Period* for each *Extended Warranty* described in the *Specifications* shall commence on the expiry of the *Warranty Period* described in paragraph 12.3.1. The *Extended Warranties* shall be submitted to the *Owner* as part of the *Close-Out Documentation*.”

61.4 Add the following new paragraphs 12.3.7 to 12.3.12

- 12.3.7 The decision of the *Owner* shall be final as to the existence of such defects or deficiencies in the *Work*, the necessity of remedying same, and the remedial measures required.
- 12.3.8 If the *Contractor* fails to do the work to correct the defects or deficiencies, the *Owner* shall be entitled to carry out such work by its own forces or by *Other Contractors*. If such work is work which the *Contractor* should have carried out at the *Contractor's* own expense, the *Owner* shall be entitled to recover from the *Contractor* the cost thereof or may deduct the same from any monies due or that become due to the *Contractor*, including the warranty holdback, if any.
- 12.3.9 Any insurance, contract security, surety or deposit required by the *Contract Documents* shall remain in full effect at the expense of the *Contractor* during the *Warranty Period*.
- 12.3.10 The *Contractor* shall be responsible for the costs for inspection and testing for the correction of defects or deficiencies. The *Owner* shall have the right to deduct the cost of the inspection and testing from any monies owed to the *Contractor*.
- 12.3.11 The *Owner* may hold back, if set out in the *Contract Documents*, on each application for payment, advance payment or progress draw, 2.5% of the total amount payable under each such application for payment, advance payment or progress draw as security for the *Contractor's* performance of its warranty obligations. In the event the *Contractor* fails to correct a defect or deficiency during the warranty period within the required time and/or fails to pay for the redesign, reconstruction and other costs related to damages arising from a defect or deficiency, the *Owner* shall have the right to use the warranty holdback, or such part of it still being held by the *Owner* to pay for the costs of remedying the defect or deficiency and any redesign, reconstruction or other costs relating to the defect or deficiency. If the costs are greater than the amount of the warranty holdback, the *Contractor* shall pay the additional costs upon receipt of an invoice from the *Owner*. The *Contractor* shall have the right to invoice the *Owner* for the balance of the warranty holdback at the end of the *Warranty Period* or *Extended Warranty Period* as described in paragraph 12.3.4.
- 12.3.12 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*.
- 12.3.13 The *Contractor's* obligations under this GC 12.3 shall continue notwithstanding any withholding of payment made by the *Owner* under GC 5.8 – WITHHOLDING OF PAYMENT or by performance by the *Owner* directly or through other forces of the *Contractor's* obligations under this *Contract*, where the *Contractor* is in default in the performance of such obligations.”

## **62. GC 13.1 INDEMNIFICATION**

62.1 Delete GC 13.1 – INDEMNIFICATION in its entirety and replace it with the following:

- “13.1.1 The *Contractor* shall indemnify and hold harmless the *Owner* and its directors, officers, employees, contractors and agents (collectively the “*Owner's Indemnitees*”) from and against all loss, liability, damage, fines, cost, legal cost and disbursement whatsoever arising out of or related to the *Work* or the *Contract Documents* (“*Loss*”), by whomever made, sustained, incurred, brought or prosecuted, arising out of, or in connection with, anything done or omitted to be done by the *Contractor* in the course of the performance of the *Contractor's* obligations under the *Contract Documents* or otherwise in connection with the *Work*. The *Contractor* shall, at the *Owner's* election, either assume the defence of every proceeding brought in respect of such *Loss*, or cooperate with the *Owner* in the defence, including providing *Owner* with prompt Notice of any possible *Loss* and providing the *Owner* with all information and material relevant to the possible *Loss*.
- 13.1.2 GC 13.1 – INDEMNIFICATION shall govern over the provisions of paragraph 1.3.1 of GC 1.3 – RIGHTS AND REMEDIES.
- 13.1.3 The *Contractor* shall make full and complete compensation for any bodily injury or death to any person and for any damage caused to the *Owner's* or a third party's physical property by the *Contractor's* act or omission.

13.1.4 The *Contractor* shall be liable for any claims arising from any personal injuries to or death of any of the *Contractor's* employees, *Subcontractors* or *Suppliers* or from any *Loss* of or damage to any property belonging to the *Contractor* or its employees, *Subcontractors* or *Suppliers* during the performance of the *Work* unless caused by the negligent act or omission of *Owner*.

13.1.5 Notwithstanding any other provision of the *Contract Documents*:

- (a) The *Owner* shall not be responsible for indirect, consequential, special, incidental or contingent damages of any nature whatsoever, including loss or revenue or profit or damages resulting from interruption of service or transmission. This limitation shall apply regardless of the form of action, damage, claim, liability, cost, expense or loss, whether in contract (including fundamental breach), statute, tort (including negligence), or otherwise, and regardless of whether the *Owner* has been advised of the possibility of such damages; and,
- (b) Any express or implied reference to the *Owner* providing an indemnity or any other form of indebtedness or contingent liability that would directly or indirectly increase the indebtedness or contingent liabilities of the *Owner* or the Province of Ontario, whether at the time of execution of this *Contract* or at any time during the performance of the *Work* and the *Warranty Period*, shall be void and of no legal effect in accordance with s.28 of the *Financial Administration Act*, R.S.O. 1990, c. F.12.

13.1.6 The *Contractor* shall indemnify the *Owner* and the *Owner Indemnitees* and save them harmless from and against all *Loss* incurred by the *Owner* arising from:

- (a) any decision or interpretation by any court or *Authority Having Jurisdiction* that: (i) any of the *Contractor's* employees are an employee of the *Owner*; or (ii) the *Owner* is liable to pay statutory contributions or deductions in respect of any of the *Contractor's* employees under any laws, including employment insurance, provincial health insurance, income tax or other employment matters;
- (b) any health, medical disability or similar claims which the *Contractor* or *Contractor's* employees may have during or after the term of this *Contract*;
- (c) a claim by any third party against the *Owner* alleging that the *Submittals* and their use by the *Owner*, infringes any *Intellectual Property* rights;
- (d) safety infractions committed by the *Contractor* under the *Occupational Health and Safety Act* or any other laws, guidelines or public health orders regulating health and safety at the *Place of the Work*;
- (e) any claims against the *Owner* for the failure of the *Contractor* to protect the confidentiality of *Confidential Information*;
- (f) exposure to, or the presence of, toxic or hazardous substances or materials which were either brought on to the *Place of the Work* by the *Contractor* or the *Contractor* mishandled or handled negligently or improperly the substances or materials;
- (g) a claim from adjacent landowners or other third parties regarding damage to their property due to the *Work*; and
- (h) the release into the environment of materials resulting from the *Work* that contain *Environmental Contaminants* during the transportation of such materials from the *Place of the Work* to the approved waste disposal site.

## **63. GC 13.2 WAIVER OF CLAIMS**

63.1 Delete GC 13.2 – WAIVER OF CLAIMS in its entirety and replace it with the following:

### **“13.2.1 WAIVER OF CLAIMS BY OWNER**

As of the date of the final certificate for payment, the *Owner* expressly waives and releases the *Contractor* from all claims against the *Contractor* including without limitation those that might arise from the negligence or breach of contract by the *Contractor* except one or more of the following:

- .1 those made in writing prior to the date of the final certificate for payment and still unsettled;

- .2 those arising from the provisions of GC 13.1 – INDEMNIFICATION or GC 12.3 – WARRANTY;
- .3 those arising from the provisions of paragraph 9.6.1 of GC 9.6 – IMPACT ASSESSMENTS and arising from the *Contractor* failing to comply with the mitigation plans in the *Impact Assessment Reports* or failing to assess impacts and implement mitigation plans for impacts that arise during the *Work*;
- .4 those arising from the provisions of paragraph 9.2.5 of GC 9.2 – TOXIC AND HAZARDOUS SUBSTANCES and arising from the *Contractor* bringing or introducing any toxic or hazardous substances and materials to the *Place of the Work* after the *Contractor* commences the *Work*;
- .5 those arising from the provisions of paragraph 9.5.1 of GC 9.5 – MOULD and arising from the *Contractor* bringing or introducing mould to the *Place of the Work*; or
- .6 those made in writing within a period of six (6) years from the date of *Substantial Performance of the Work*, as set out in the certificate of *Substantial Performance of the Work*, arising from the *Contractor's* performance of the *Contract* with respect to material defects or deficiencies in the *Work*.

### 13.2.2 WAIVER OF CLAIMS BY CONTRACTOR

As of the date of the final certificate for payment, the *Contractor* expressly waives and releases the *Owner* from all claims against the *Owner* including without limitation those that might arise from the negligence or breach of contract by the *Owner* except:

- .1 those made in writing prior to the *Contractor's* application for final payment and still unsettled; and
- .2 those arising from the provisions of GC 9.2 – TOXIC AND HAZARDOUS SUBSTANCES, GC 9.5 – MOULD, or GC 10.3 – PATENT FEES.

13.2.3 GC 13.2 – WAIVER OF CLAIMS shall govern over the provisions of paragraph 1.3.1 of GC 1.3 – RIGHTS AND REMEDIES.”

## 64. PART 14 OTHER PROVISIONS

64.1 Add new PART 14 as follows:

### “PART 14 OTHER PROVISIONS

#### GC 14.1 OWNERSHIP OF MATERIALS

14.1.1 Unless otherwise specified, all materials existing at the *Place of the Work* at the time of execution of the *Contract* shall remain the property of the *Owner*. 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 as its property when notified in writing to do so by the *Owner*.

#### GC 14.2 CONTRACTOR DISCHARGE OF LIABILITIES

14.2.1 In addition to the obligations assumed by the *Contractor* pursuant to GC 3.6 – SUBCONTRACTORS AND SUPPLIERS, the *Contractor* agrees to discharge all liabilities incurred by it for labour, materials, services, *Subcontractors* and *Products*, used or reasonably required for use in the performance of the *Work*, except for amounts withheld by reason of legitimate dispute which have been identified to the party or parties, from whom payment has been withheld.

#### GC 14.3 DAILY REPORTS/DAILY LOGS

14.3.1 The *Contractor* shall cause its supervisor, or such competent person as it may delegate, to prepare a daily log or diary reporting on weather conditions, work force of the *Contractor*, *Subcontractors*, *Suppliers* and any other forces on site and also record the general nature of *Project* activities. Such log or diary shall also include any extraordinary or emergency events which may occur and also the identities of any persons who visit the *Place of the Work* who are not part of the day-to-day work force.

14.3.2 The *Contractor* shall also maintain records, either at its head office or at the *Place of the Work*, recording manpower and material resourcing on the *Project*, including records which document the activities of the

*Contractor* in connection with GC 3.4 – CONSTRUCTION SCHEDULE, and comparing that resourcing to the resourcing anticipated when the most recent version of the schedule was prepared pursuant to GC 3.4 – CONSTRUCTION SCHEDULE.

#### **GC 14.4 CONFIDENTIAL INFORMATION**

- 14.4.1 The *Contractor* must not advertise or issue any information, publication, document or article (including photographs or film) for publication or media releases or other publicity relating to the *Work* or the *Owner's Confidential Information* without the prior written approval of the *Owner*.
- 14.4.2 The *Contractor* must not, and must ensure that the *Contractor's* personnel do not, without the prior written approval of ONTC:
- .1 use *Confidential Information* other than as necessary for the purposes of fulfilling the *Contractor's* obligations under this *Contract*; or
  - .2 disclose the *Confidential Information*, other than to the *Contractor's* personnel who need the information to enable the *Contractor* to perform its obligations under this *Contract*, to the *Contractor's* legal advisors, accountants or auditors, or where disclosure is required by law (including disclosure to any stock exchange).
- 14.4.3 The *Contractor* must, within 10 *Working Days* (or any other period agreed in writing by ONTC) after a direction by the *Owner* to do so, return or destroy all *Confidential Information* in the *Contractor's* possession, custody or control.
- 14.4.4 If the *Owner* or the *Contractor* is required by law to disclose *Confidential Information*, it shall promptly notify the other party so that that party may intervene to prevent the disclosure.
- 14.4.5 The *Contractor* specifically acknowledges that *Owner* is subject to the *Freedom of Information and Protection of Privacy Act*, R.S.O. 1990, c. F. 4, and that the *Owner* may be compelled by law to disclose certain *Confidential Information*.
- 14.4.6 The rights and obligations under this Part continue after the termination of this *Contract*.

#### **GC 14.5 CORRUPTION, FORCED LABOUR, SANCTIONS**

- 14.5.1 The *Contractor* warrants that:
- .1 no bribe, gift or other inducement has been paid, promised or offered to any official or employee of the *Owner*, the Ministry of Transportation, the Government of Ontario or any other government official relating to the *Owner* entering into this *Contract* with the *Contractor*.
  - .2 it will take reasonable steps to ensure that its officials and employees do not extort, accept or pay bribes or illicit payments, charge or accept fees that are not legally due or are in excess of those legally due, or unreasonably delay or obstruct the granting of permits, licences, or other such approvals in relation to the project. If the *Contractor* becomes aware of an actual or attempted bribe, extortion, delay or obstruction relating to this *Contract*, the *Contractor* shall report the incident to the *Owner* immediately.
  - .3 it is unaware of any forced labour or child labour being used at any step of the production of goods produced, purchased or distributed by it in Canada or elsewhere or for the production of goods imported by the *Contractor*.
  - .4 it has undertaken the appropriate due diligence to ensure its business and its supply chains do not use forced labour or child labour, including an assessment of its business and supply chains that may carry a risk of forced labour or child labour being used and the management of the risk. If applicable, the *Contractor* shall comply with the reporting requirements under the *Fighting Against Forced Labour and Child Labour in Supply Chains Act*, S.C. 2023 c.9.
- 14.5.2 In compliance with its international obligations or with United Nations obligations, Canada imposes



restrictions on trade, financial transactions or other dealings with a foreign country or its nationals. These sanctions may be implemented by regulation under such acts as the *United Nations Act*, the *Special Economic Measures Act (SEMA)*, or the *Export and Import Permits Act*. The text of any such regulations is published in the Canada Gazette, Part II. It is the only text which is authoritative. The *Contractor* shall comply with any such regulations that are in force on the effective date of the *Contract* and will require such compliance by its first-tier *Subcontractors*. The *Owner* relies on such undertaking from the *Contractor* to enter into this *Contract*, and any breach of such undertaking shall entitle the *Owner* to terminate this *Contract* for default and to recover damages from the *Contractor*, including excess re-procurement costs.

#### **GC 14.6 COMMUNICATIONS**

- 14.6 The *Owner* or the Government of Ontario will lead and make any announcements relating to this *Contract* and the *Work*. The *Contractor* shall not make any announcement of any kind, including press releases, social media posts, public declarations, or any form of publication or announcement, in relation to this *Contract* or the *Work* unless prior written consent is given by the *Owner*. Should the *Contractor* be contacted by any media outlet or other person or entity wishing to make any form of publication or announcement, or seeking any information, in relation to this *Contract* or the *Work*, the *Contractor* shall provide no comment and shall immediately notify the *Owner*. The *Contractor* shall immediately notify the *Owner* if it becomes aware of any publication or announcement relating to the *Contract* or the *Work*.

#### **GC 14.7 AUDIT**

- 14.7 The *Contractor* shall keep proper and accurate financial accounts and records, including but not limited to its contracts, invoices, statements, receipts, and vouchers in respect of the *Project* for a least six (6) years after the date that *Ready-for-Takeover of the Project* was achieved (the "*Audit Period*"). The *Owner* has the right to audit all such financial accounts and records associated with the *Project* and the *Contract Documents*, including *Submittals*, timesheets, reimbursable out of pocket expenses, materials, goods and *Construction Equipment* claimed by the *Contractor*, at all reasonable times during the term of the *Contract* and the *Audit Period* by providing *Notice in Writing* of its intention to conduct the audit. The *Contractor* shall provide full access to the records to the *Owner* for the purpose of the audit.

#### **GC 14.8 GENERAL**

- 14.8.1 Nothing contained in this *Contract* shall be deemed or construed by the parties nor by any third party as creating the relationship of principal and agent, landlord and tenant, or of partnership or of joint venture between the parties.
- 14.8.2 In addition to those provisions which are expressly stated to survive the termination or expiration of this *Contract*, the provisions of this *Contract* that are by their nature intended to survive termination or expiration of this *Contract* shall continue in full force and effect subsequent to and notwithstanding termination or expiration until or unless they are satisfied.
- 14.8.3 This *Contract* may be executed with electronic signatures or may be executed and delivered by electronic transmission and the parties may rely upon all such signatures as though they were original signatures. This *Contract* may be executed in counterpart and all such counterparts shall, for all purposes, constitute one agreement binding on the parties."

## Schedule “A” to the Supplementary Conditions

### Requirements for a “Proper Invoice”

To satisfy the requirements for a *Proper Invoice*, the *Contractor’s* application for payment must satisfy the following criteria:

- .1 is in the form of a written bill, invoice, application for payment, or request for payment;
- .2 is in writing;
- .3 contains the *Contractor’s* name, telephone number and mailing address and contact information of the *Contractor’s* project manager;
- .4 contains the title of the *Project* and the *Owner’s* contract number or purchase order number under which the work was performed and the related request for qualification, tender, or request for proposal number, as applicable;
- .5 contains the date the written bill, invoice, application for payment, or request for payment is being issued by the *Contractor*;
- .6 identifies the period of time in which the Work, labour, services, *Products* and/or materials were supplied to the *Owner*;
- .7 reference to the provisions of the *Contract* under which payment is being sought (e.g. progress payment / milestone, holdback, final payment, etc.);
- .8 a description, including quantities where appropriate, of the labour, services, *Products*, or materials, or a portion thereof, that were supplied and form the basis of the *Contractor’s* request for payment;
- .9 the amount the *Contractor* is requesting to be paid by the *Owner*, set out in a statement, based on the schedule of values *Accepted* under paragraph 5.2.5, separating out any statutory or other holdbacks, set-offs and HST;
- .10 with each application for payment after the first, a written statement that all accounts for labour, services, subcontracts, materials, equipment, *Products*, and other indebtedness which may have been incurred by the *Contractor* and for which the *Owner* might in any way be held responsible have been paid in full up to the previous application for payment, except for amounts properly retained as a holdback or as an identified amount in dispute;
- .11 with the applications for payment of holdback and for final payment, a *Statutory Declaration* in the form provided by the *Owner* attached as Schedule B stating that all accounts for labour, services, subcontracts, materials, equipment, *Products*, and other indebtedness which may have been incurred by the *Contractor* and for which the *Owner* might in any way be held responsible have been paid in full up to the previous application for payment, except for amounts properly retained as a holdback or as an identified amount in dispute;
- .12 a current Workplace Safety Insurance Board Clearance Certificate;
- .13 the progress report required under GC 3.4 CONSTRUCTION SCHEDULE, in the form provided by the *Owner* attached as Schedule C;
- .14 an updated *Construction Schedule* in native and .pdf formats;
- .15 if requested by the *Owner*, a current and valid certificate(s) of insurance for the insurance required under GC 11.1 – INSURANCE;
- .16 the following statement: “Provided this *Proper Invoice* complies with the requirements of the *Contract* and provided no *Notice of Non-Payment* is issued by the *Owner*, payment is due within 28 days from the date this *Proper Invoice* is received by the *Owner*.”;
- .17 the name, title, telephone number and mailing address of the person at the place of business of the *Contractor* to whom payment is to be directed;
- .18 in the case of the *Contractor’s* application for final payment;
  - (a) sufficient evidence that the *Contractor* has delivered all warranties to the *Owner*;

- (b) sufficient evidence that the *Place of the Work* has been left in a clean and tidy condition, including evidence that any remaining materials, tools, equipment, temporary work, and waste products and debris have been removed from the *Place of the Work*;
  - (c) landfill waybills for the disposal of the waste products, debris and excess soil removed from the *Place of Work* in accordance with the *Waste Management Plan*; and
  - (d) an executed, original, full and final release of all claims that may arise as a result of the *Work*, which full and final release executed by the *Contractor* shall be in a form approved by the *Owner*;
- .19 information identifying the authority, whether in the *Contract Documents* or otherwise, under which the services or materials were supplied;
- .20 any other information that is prescribed in Article A-3, if any, or identified by the *Owner* as required;
- .21 the amount invoiced to date;
- .22 the percentage of the *Contract Price* invoiced; and
- .23 the individual value of *Change Orders* approved during the invoice period and the cumulative value of *Change Orders* for the *Project*.

**Schedule "B" to the Supplementary Conditions**



**Statutory Declaration of Progress Payment Distribution by Contractor**

To be made by the Contractor **prior to payment**

as a condition for release of holdback.

The last application for progress

payment for which the Declarant has

received payment is No. \_\_\_\_\_

dated \_\_\_\_\_.

**Identification of Contract:**

Name of Contract (Location and description of the Work as it appears in the Contract Documents)

Date of Contract : Day : \_\_\_\_\_ Month : \_\_\_\_\_ Year : \_\_\_\_\_

**Name of Owner: Ontario Northland Transportation Commission**

**Name of Contractor:**

**Name of Declarant:**

**Position or Title:** (of office held with Contractor)

**Declaration**

I solemnly declare that, as of the date of this declaration, I am an authorized signing officer, partner or sole proprietor of the Contractor named in the Contract identified above, and as such have the authority to bind the Contractor, and have personal knowledge of the fact that all accounts for labour, subcontracts, products, services, and construction machinery and equipment which have been incurred directly by the Contractor in the performance of the work as required by the Contract, and for which the Owner might in any way be held responsible, have been paid in full as required by the Contract up to and including the latest progress payment received, as identified above, except for:

Holdback monies properly retained,

Payments deferred by agreement, or

Amounts withheld by reason of legitimate dispute which have been identified to the party or parties, from who payment has been withheld.

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 \_\_\_\_\_

City/Town Province

on \_\_\_\_\_.

Date

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

\_\_\_\_\_  
A Commissioner for Oaths or Notary Public

## Schedule “C” to the Supplementary Conditions

### Project Status Report

Project Title:

Reporting Period:

Date:

Project Details:

Planned Budget: Indicate the original contract value

Current Approved Budget: Indicate the original contract value plus approved change orders

Planned Completion: Indicate the contract schedule completion date

Current Project Completion: Fill in revised date if schedule extension approved through change order

Planned Project Percent Complete: How far should they have progressed by this date?

Actual Project Percent Complete: What is their actual percent complete?

Executive Summary

Provide a summary of what happened during the period, any concerns, risks or wins and plans for the upcoming period.

Work Completed in the Period

List

List

List

List

List

Work Planned for Next Period

List

List

List

List

Issues and Concerns

Use this area to identify any concerns related to the project.

Status of Progress

Include a graph to show progress or eliminate this section.

**Schedule “D” to the Supplementary Conditions**

**DUTY TO NOTIFY/EMERGENCY WORKS NOTIFICATION FORM**

**ONTC DUTY TO NOTIFY / EMERGENCY WORKS NOTIFICATION FORM**

**SUBMISSION REQUIREMENTS**

Contact DFO By Phone 1-855-852-8320 **AND** submit this form to [fisheriesprotection@dfo-mpo.gc.ca](mailto:fisheriesprotection@dfo-mpo.gc.ca)

Submit this form to the consultant and the ONTC Project Manager: Esmail Zougari, [esmail.zougari@ontarionorthland.ca](mailto:esmail.zougari@ontarionorthland.ca) and to ONTC Legal : [legal@ontarionorthland.ca](mailto:legal@ontarionorthland.ca)

MNRF Office: Contact Area MNRF Office

**PART 1: NOTIFICATION DETAILS**

Type of Notification:    ☐ DUTY TO NOTIFY    ☐ EMERGENCY WORK

Date of Notification:

Time of Notification:

ONTC Contract #:

DFO PATH File # (if applicable):

**PART 2: REPORTING INFORMATION**

Name of Person Reporting:

Name of Field Contact:

Telephone #:

Telephone #:

Email:

Email:

**PART 3: INCIDENT INFORMATION**

Bank failure    ☐ Culvert failure

Erosion and Sediment Control Measures Failure    ☐ Beaver dam breach

Other (specify):    ☐ Hwy shoulder failure

Date of Incident:

Time of Incident:

Location of Site:

Geographic Coordinates (Lat/Long):

Nearest Community (city/town):

Name of Waterbody(ies):

Type (watercourse, lake/pond, ditch):

Indicate if any of the following impacts have occurred or are about to occur:

Fish Kill (if yes, approximately how many):\_\_\_\_\_    ☐ Sediment deposition in channel

Bank failure    ☐ Obstruction of fish passage through:

Modification of flows    ☐ Channel    ☐ Culvert

Other (specify):



<p>Immediate Actions Taken:</p> <p>(Describe the activities/works that are being / have been immediately implemented. e.g. mitigation measures, damming / pumping etc.)</p>	
<p>Photos: <input type="checkbox"/> Attached</p> <p>(Where feasible, it is recommended that the photos be submitted with the form or as follow up)</p>	
<b>PART 4: EMERGENCY WORKS</b>	
<p>Description of Proposed Emergency Works:</p> <p>(Be as specific as possible. Describe what work will be undertaken within the next two weeks.</p> <p>E.g. culvert replacement (include existing and new culvert diameter / length / type), slope restoration (include material / method),:</p>	
<p>Mitigation measures:</p> <p>(Describe what measures have been or will be implemented to address the immediate issue. E.g. sediment fence, turbidity curtain, check dam, fish salvage etc.):</p>	
<p>Indicate which of the works will be followed (if applicable):</p> <p>Beaver Dam Removal    <input type="checkbox"/> Culvert Maintenance</p> <p>Bridge Maintenance    <input type="checkbox"/> Like-for-like culvert replacement</p> <p>Ditch maintenance within 30 m of a    <input type="checkbox"/> Temporary watercourse crossing waterbody</p> <p>Riparian vegetation maintenance in existing right-of-way</p>	
<p>The Emergency Works are (check one):</p> <p>Temporary (additional work will be required)    <input type="checkbox"/> Final (no additional work required)</p>	
<p>Proposed Start Date: (YYYY/MM/DD)</p>	<p>Proposed End Date: (YYYY/MM/DD)</p>
<b>PART 5: OTHER AGENCIES NOTIFIED</b>	
<p>Other Agency(ies) Notified: Yes <input type="checkbox"/>    No <input type="checkbox"/></p>	<p>Agency(ies) Notified:</p>
<p>Date Notified:</p>	<p>Incident Report No. (if issued by notified Authority):</p>

**END OF SUPPLEMENTARY CONDITIONS**

## APPENDIX B - RFP PARTICULARS

### A. THE DELIVERABLES

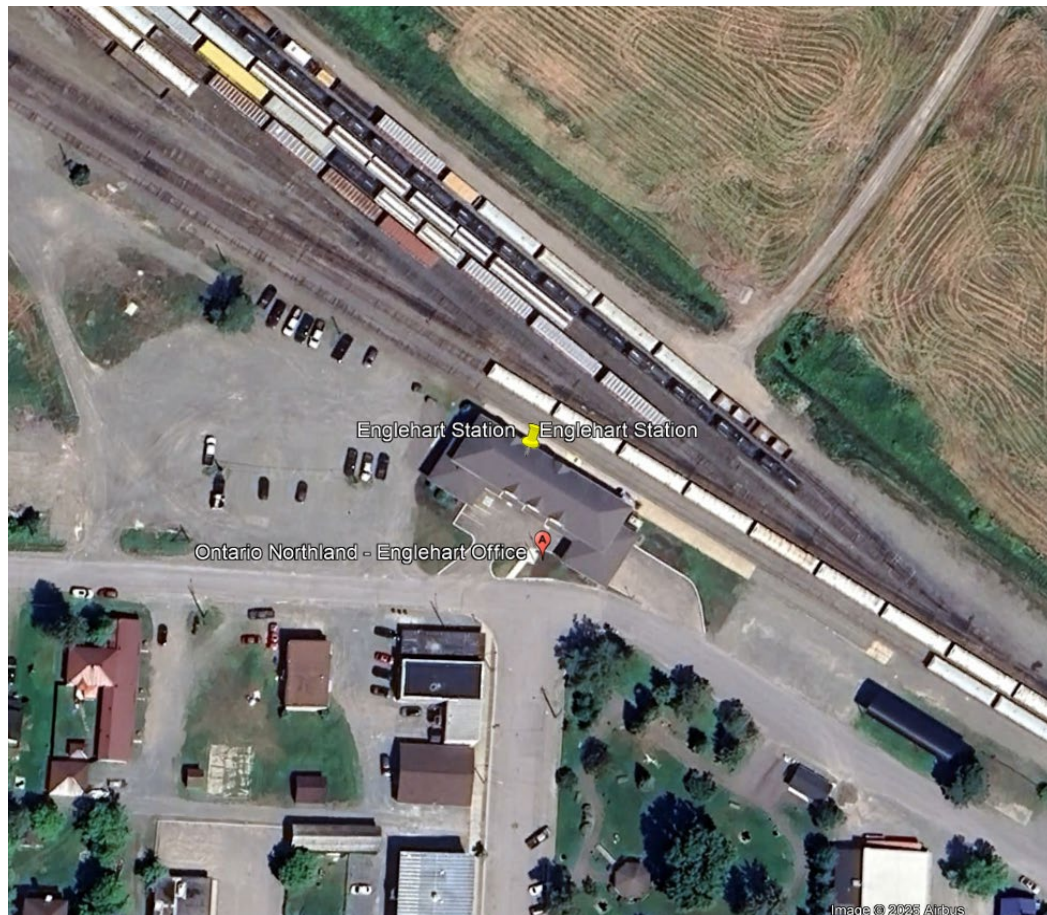
#### Scope Of Services

##### Summary:

- The Englehart Station is a facility located at 1 Railway Street, Englehart, ON. This building is a single-story structure with a basement that contains office spaces, a railway station, and a critical rail traffic control system. The rail traffic control system is currently backed up during power outages by a battery bank system, and a generator plug that connects to a portable power source. All other equipment in the building, including lighting, office computers, heating, and cooling are completely off during this time. To ensure employee comfort and building operation, backup power shall be provided for the whole building. It is recommended that a new permanent and automatic transfer switch be provided to back up the whole building.

##### Project Location:

GPS Coordinates: 47.8265944945692, -79.87310775030925



Project Map - Aerial View

## General Requirements:

*Note: The following list of items is to be used as a guideline only and may not include all the tasks to complete the work.*

1. The Contractor will be required to complete the work in accordance with all applicable federal, provincial, and municipal laws.
2. The Contractor shall coordinate Work with the owner's representative.
3. The Contractor will be required to obtain and pay for all necessary permits, fees, and ministry notifications required for the project including, but not limited to, the following:
  - Filing notice of project with the Ontario Ministry of Labour.
  - Registering as Constructor with the Ontario Ministry of Labour.
4. Building Permit will not be required for this work. All other permits required for the work are to be obtained by the contractor.
5. The Contractor shall provide qualified personnel to perform the work.
6. Construction activities should be conducted on weekdays between 7 am to 5 pm. Working outside these hours can be done but if only approved by ONTC Representative post submitting a request at least 3 days ahead of time to ONTC Representative for approval.
7. The Contractor will be required to secure their work area (create construction islands) for the duration of the project. The Contractor will be responsible for all activities inside this construction island, including health and safety. The Contractor shall coordinate their work with ONTC to ensure that disruption to work being done by ONTC employees in the area outside of the construction island is not interrupted. Access by the Contractor will be restricted to the work area (construction island) only.
8. The Contractor shall establish a site-use plan acceptable to ONTC providing an organized, safe, and efficient means of personnel transport, material handling, storage/laydown areas, access points and methods of access, and limits of construction within the premises.
9. The Contractor shall make every reasonable effort to contain any dust or fumes so that adjacent work areas are not contaminated during the project.
10. The Contractor shall clean up and demobilize areas upon completion of the work.
11. The Contractor shall supply all necessary tools, machinery, and equipment to perform the work including, but not limited to, forklifts, mobile cranes, hoisting equipment, scaffolding, ladders, man lifts, temporary lighting, heating, welding machines, ventilation, consumables, and any other material or equipment required to complete the work. The

Contractor shall provide all necessary vehicles and qualified personnel to transport people and materials.

12. The Contractor shall remove all demolished material from ONTC property and pay for all disposal fees, with the exception of excavated material.
13. The Contractor will have access to the construction island, 24 hours per day, seven days per week. The Contractor will be required to coordinate their hours of work with ONTC and maintain a record of all persons accessing the site that at a minimum includes the name of the person, time-in, time-out and their site contact with the Contractor.
14. Supply their own on-site facilities, including washrooms and an eating area.
15. Supply all personal protective equipment (PPE) and consumable supplies as required to meet all applicable legislation, ONTC policies and Contractor Policies.

**Note: Safety glasses with side shields, safety boots, hard hats, and high visibility clothing must be worn at all times on ONTC property. Any employees not wearing the required PPE will be immediately escorted off ONTC property.**

16. Designate a site supervisor who will be responsible for managing the project and be responsible for on-site safety, including all sub-contractors and suppliers. This site supervisor will be the single point of contact for the duration of the project. This site supervisor will be required to communicate with ONTC supervision to ensure the work is completed safely with minimal impact on the operation of the facility.
17. Coordinate required site inspections with ONTC Representative.
18. Purchase and deliver to the site all Contractor supplied materials, equipment, facilities, and manpower necessary to accomplish the work within the schedule.
19. Any road closure request shall be submitted to the ONTC for approval 5 business days ahead of any closure.
20. The Contractor shall be aware of all high voltage equipment in the building. Be familiar with proper equipment shut down procedures and follow "Lock Out and Tag Out" procedures. Understand the effect on light sources for work involving power outages and be responsible for temporary light sources required to complete their work safely.
21. Provide regular updates to ONTC project manager, including daily progress reports.
22. Any changes or deviation must be agreed to and approved by ONTC.
23. All shop drawings, submittals/approvals, and schedule changes must be submitted through AutoDesk, which is set up and provided by ONTC.

24. The Prime Consultant on this project is Piotrowski Consultants. Coordinate with Piotrowski Consultants for all construction contract administration services. Main point of contact at Piotrowski is Ryan Macvicar, [rmacvicar@piotrowskiconsultants.ca](mailto:rmacvicar@piotrowskiconsultants.ca), Ph: 705-472-2536

### **Exclusions:**

Electrical Conduits have already been installed during the Northlander Platform project. Refer to Ganett Flemming Drawing for further details (Appendix H). This work shall be excluded from the price.

### **Deliverables:**

#### **Preconstruction Phase:**

1. Notice of project.
2. Registration of Constructors Form 1000.
3. Site use plan (laydown area, parking to be used, temporary facilities).
4. Health and Safety project specific plan.
5. Project risk assessment.
6. Construction schedule.
7. Shop Drawings and Material cut sheets.

#### **Construction Phase:**

1. Daily report with photos documenting progress and any issues.
2. Safety inspection report.
3. Project logs.

#### **Close-out Phase**

1. Proper disposal slips.
2. Project Records. (Certificates, Warranties, and other documentation)
3. Substantial completion form and certificate of publication.
4. As-builts.

### **Schedule of services:**

Construction to start on **June 2<sup>nd</sup>, 2026**, and be completed by **September 30th, 2026**.

**Note: All Shop Drawings shall be submitted immediately and approved upon contract award, due to the long lead times for electrical and generator equipment.**

## **B. MATERIAL DISCLOSURES**

### **1. Examination of Site**

Proponents are required to satisfy themselves as to existing conditions of the site and must take all site conditions into account in preparing their proposals.

### **2. Contractor Health and Safety**

The successful proponent must be familiar and comply with the Occupational Health and Safety Act (OHSA) and ONTC's Policies.

### **3. Liquidated Damages**

The per diem rate calculated in relation to Section 6 - Article A-10 of the Supplementary Conditions is \$500 for each calendar day of delay beyond the prescribed date for Ready-for-Takeover until Ready-for-Takeover is achieved and certified, pursuant to the terms of the Contract.

## **C. MANDATORY SUBMISSION REQUIREMENTS**

### **1. Submission Form (Appendix C)**

Each proposal must include a Submission Form (Appendix C) completed and signed by an authorized representative of the proponent.

### **2. Pricing**

Each proposal must include pricing information that complies with the instructions set out below in Section G of this Appendix B.

### **4. Bid Security**

**4.1** Proponents shall provide with their Proposal, Bid Performance Security in one of the following forms:

- (a) Irrevocable stand-by Letter of Credit ("**LOC**"); or
- (b) Bid bond

(the "**Bid Performance Security**").

The Bid Performance Security shall be:

- (a) in the Proponent's own name;
- (b) if a bid bond, issued by a surety licensed to conduct surety and insurance business in Ontario;

- (c) in a form satisfactory to ONTC;
- (d) for a term of at least ninety (90) calendar days after the submission deadline;  
and
- (e) in the amount of ten percent (10%) of the total bid price excluding HST.

The Bid Performance Security is for the benefit of ONTC and will be retained by ONTC to compensate ONTC for the damages it will suffer if the successful proponent fails to provide the Contract Securities (defined in Section 3.2, below) and evidence of insurance and other documents required by this RFP or by the final agreement, or fails to execute the final agreement within the time required by the RFP documents.

The Bid Performance Security of the successful proponent will be returned after the successful proponent delivers to ONTC compliant Contract Securities and evidence of insurance and other documents required by this RFP or by the final agreement and the successful proponent has executed the final agreement, all within the time required by the RFP documents.

The Bid Performance Security of all other proponents shall be returned to the proponents upon the occurrence of the earlier of:

- (a) execution by both parties of the final agreement between ONTC and the successful proponent;
- (b) the expiry of the 90-day period following the submission deadline;
- (c) the cancelation of the RFP process without an award of the contract; or
- (d) the disqualification of all Proposals.

#### **4.2 Agreement to Bond**

The proponent shall provide with its proposal an agreement to bond issued by a surety company undertaking to provide a fifty percent (50%) Performance Bond and a fifty percent (50%) Labour and Material Bond (the “Contract Securities”) in the form prescribed by the *Construction Act*, both to be provided to ONTC by the Successful Proponent following award of the contract.

**4.3** Proposals not accompanied by the required Bid Performance Security and the required agreement to bond will be declared non-compliant.

**4.4** The Proponent shall include the actual cost of all bonds, with no mark-up, in the Price Proposal.

#### **4. Other Mandatory Submission Requirements**

Bidders must be an Ontario business as set out and acknowledged in the Submission Form (Appendix C).

## D. MANDATORY TECHNICAL REQUIREMENTS

Not Applicable.

## E. PRE-CONDITIONS OF AWARD

The selected proponent must satisfy the following conditions and provide the following information with ten (10) days of the notice of selection:

- (a) The performance bond and the labour and material bond described in the RFP Documents. The form of such bonds shall comply with the requirements prescribed in the *Construction Act*. Refer to the link below for the appropriate form (Form 31 and 32).

<https://ontariocourtforms.on.ca/en/construction-lien-act-forms/>

- (b) Certificates of insurance as specified in the Supplementary Conditions;
- (c) Executed Contractors Health and Safety Responsibility Agreement;
- (d) Respondent's Health and Safety, and Environmental Policies; and
- (e) A current Clearance Certificate issued by the Workplace Safety and Insurance Board, if applicable.

## F. EVALUATION CRITERIA

The following sets out the categories, weightings, and descriptions of the rated criteria of the RFP. Proponents who do not meet a minimum threshold score for a category will not proceed to the next stage of the evaluation process.

Item	Criteria	Weighting	Minimum Threshold
<b>1. TECHNICAL PROPOSAL</b>			
<b>1.0</b>	<b>Category 1: Experience and Qualifications</b>	<b>35</b>	<b>17.5</b>
1.1	Company Profile	5	
1.2	Project Team	15	
1.3	Project Profiles	15	
<b>2.0</b>	<b>Category 2: Schedule and Proposed Approach</b>	<b>25</b>	<b>12.5</b>
2.1	Schedule	10	
2.2	Proposed Approach	15	
<b>3.0</b>	<b>Category 3: Technical Solution &amp; Compliance</b>	<b>10</b>	<b>n/a</b>
<b>3.1</b>	Health, Safety and Environmental	10	



	<b>Sub-Total</b>	<b>70</b>	
<b>50% Minimum Threshold to be obtained in Category 1 (17.5/35) and Category 2 (12.5/25) to Proceed to Stage 2 - Pricing Proposal. Proposals which do not meet this minimum threshold may not be considered further.</b>			
<b>2. PRICING PROPOSAL</b>			
	<b>Pricing</b>	<b>40</b>	<b>n/a</b>
	<b>Total Points</b>	<b>110</b>	<b>n/a</b>

### **Technical Proposal Content Requirements**

The proponent shall provide a written proposal in PDF format. The proposal to undertake the project shall include a clear outline, including the general items listed below, but also include other considerations based on the proponent's understanding of the project. Failure to provide the requested information will negatively affect the scoring of the proposal in the evaluation process.

All submissions shall utilize the headings in the Technical Proposal Requirements table provided below, and in the order presented, which align with the Evaluation Criteria. All submissions shall also address the information requirements under each heading. **Pricing is not to be provided in the Technical Proposal.**

<b>ITEM #</b>	<b>DESCRIPTION</b>
	<b>Title Page</b>
	<b>Table of Contents</b>
<b>1.0</b>	<b>Experience and Qualifications</b>
<b>1.1</b>	Proponents shall provide a Company Profile indicating the length of time (number of years) the company has been providing similar services. Include company history, office location(s), corporate operating philosophy and description of the specific services offered and specialties. Proponents shall also demonstrate a minimum of five (5) years' experience in related work with a proven track record of successfully delivering construction projects.  Proponents shall include a company profile for any and all Subcontractors being used for the completion of the project.
<b>1.2</b>	Proponents shall provide an organizational chart and full detailed resumes of key personnel, including the roles listed below, details of the roles and responsibilities of the proponent and any of its agents, employees, and sub-contractors who will be involved in providing the deliverables, together with the identity of those who will be performing those roles and their <b><u>relevant respective expertise</u></b> .

	<p>Proponents must designate named individuals for each of the following key personnel roles and provide brief description identifying the role and responsibilities of each key personnel, with respect to the below services requested:</p> <ul style="list-style-type: none"> <li>• Site Supervisor</li> </ul> <p><u>Key Responsibilities:</u> A Site Supervisor must be on-site at all times. The Site Supervisor(s) will be directly overseeing all work, including subcontractors, safety, and quality control. They are responsible for ensuring all labour, safety requirements are complied with, and ensuring the work site is cleaned each workday. Will be the single point of contact for the site. Shall communicate with the owner as required to ensure work is completed with no impact on owner operations.</p>
1.3	<p>Proponents shall provide a minimum of three (3) project profiles that can speak to experience in similar generator projects, including value, scope, materials, and construction methods that have been completed within the last ten (10) years. The project descriptions shall include:</p> <ul style="list-style-type: none"> <li>a) Client name and contact details</li> <li>b) Project scope and value</li> <li>c) Scheduled vs. actual start/end dates</li> <li>d) Description of work performed and use of subcontractors</li> <li>e) Outcomes (e.g., completed on schedule/budget)</li> </ul> <p><i>ONTC may, in its sole discretion, confirm the Respondent's experience in the projects identified by contacting the named contacts above.</i></p>
<b>2.0</b>	<b>Schedule and Proposed Approach</b>
2.1	<p>Proponents shall submit their Schedule in Gantt Chart Format and demonstrate that all milestone dates and completion dates align with the Deliverables as detailed below. Proponents are required to identify the critical path in their Schedule and describe it in their Proposed Approach:</p> <p>The Schedule must be structured into logical stages/phases and further broken down by work packages. Each work package shall include a Work Breakdown Structure (WBS) outlining all major and minor activities, sequencing, task durations, dependencies, resource allocations and Subcontractors (if applicable) involved. In addition, the schedule may include or indicate any overlaps and coordination with subcontractors.</p> <p><i>Note: The dates below do not list all milestones for the project. The dates are provided instead to meet ONTC's high-level deadlines and proponents are responsible to add additional stages and align their schedules accordingly.</i></p> <ul style="list-style-type: none"> <li>• Kick-off Date: June 1, 2026</li> <li>• Mobilization Date: June 8, 2026</li> <li>• Substantial Completion Date: September 16, 2026</li> </ul>

	<ul style="list-style-type: none"> <li>Final Completion Date: September 30, 2026</li> </ul>
2.2	<p>Proponents shall provide a detailed written narrative outlining their proposed approach for the completion of the project. The narrative should be clear, logical, and include sufficient detail with estimated durations for each task. Proponents shall demonstrate how they will minimize disruptions to ongoing operations.</p> <p>Should a proponent propose an earlier completion date, explain the approach and how you will meet all ONTC specifications without impacting operations.</p> <p>Proponents to provide a description of their project management and communication plans throughout the project. Proponents are to describe their site-use plan, including management of the construction island, coordination with ONTC, and access control.</p> <p>Proponents shall describe what processes will be used for daily progress reports, safety inspections, monthly progress schedules, and communication with the ONTC Project Manager.</p>
3.0	<p><b>Health, Safety and Environmental</b></p>
	<p>Proponents shall complete the Contractor Health and Safety Responsibility Agreement and the Contractor Safety Pre-Qualification Form attached at <u>Appendix E</u> and provide associated supporting documents (i.e., WSIB Safety Record, Current Clearance Certificate, and training and certification records, Past environmental and safety records and Hazardous Material List).</p> <p>Proponents shall provide proof of proper qualifications and training (Electrical, Mechanical).</p> <p>Proponents shall also provide a copy of their Health, Safety and Environmental Protection Policy.</p> <p><i>Proponents must pass the Contractor Safety Pre-Qualification. Failure to pass may result in disqualification from the procurement process.</i></p>

## G. PRICE EVALUATION METHOD

Pricing is worth **40 points** of the total score.

Pricing will be scored based on a relative pricing formula using the rates set out in the pricing form. Each proponent will receive a percentage of the total possible points allocated to price, which will be calculated in accordance with the following formula:

$$\text{lowest price} \div \text{proponent's price} \times \text{weighting} = \text{proponent's pricing points}$$

### Instructions on How to Provide Pricing

- (a) Proponents should submit their pricing information by completing the attached pricing form and including it in their proposals.

- (b) Rates must be provided in Canadian funds, inclusive of all applicable duties and taxes except for HST, which should be itemized separately.
- (c) Unless otherwise indicated in the requested pricing information, rates quoted by the proponent must be all-inclusive and must include all labour and material costs, all travel and carriage costs, all insurance costs, all costs of delivery, all costs of installation and set-up, including any pre-delivery inspection charges, and all other overhead, including any fees or other charges required by law.

### **Required Pricing Information**

Please complete Schedule A - Schedule of Prices which is attached separately as Appendix D.

## APPENDIX C - SUBMISSION FORM

### 1. Proponent Information

Please fill out the following form, naming one (1) person to be the proponent's contact for the RFP process and for any clarifications or communication that might be necessary.	
Full Legal Name of Proponent:	
Any Other Relevant Name under which Proponent Carries on Business:	
Street Address:	
City, Province/State:	
Postal Code:	
Phone Number:	
Company Website (if any):	
Proponent Contact Name and Title:	
Proponent Contact Phone:	
Proponent Contact Email:	

### 2. Sub-Contractor Information

The Bidder shall state all Subcontractor(s) and type of Work proposed to be used for this project. Bidders shall not indicate "TBD" (To Be Determined) or "TBA" (To Be Announced) or similar wording and shall not indicate multiple Subcontractor names for any Subcontractor category in their list of Subcontractors. The Bidder shall state only one (1) subcontractor for each type of work.

#### List of Sub-Contractors

In the spaces provided below, please list those subcontractors you intend to use:

☐ By checking this box, I confirm that there are no Subcontractor(s) and the Bidder shall perform the project with their **"OWN FORCES"**.

Item	Organization	Contact Name	E-mail	Phone
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				

## 2. Building Ontario Businesses Initiative

“Ontario business” means a business that meets the requirements below:

1. The business is a supplier, manufacturer or distributor of any business structure that conducts its activities on a permanent basis in Ontario; and
2. The business either,
  - i. has its headquarters or main office in Ontario, or
  - ii. has at least 250 full-time employees in Ontario at the time of the applicable procurement process.

Please select one of the following correct statement/s that describes your organization:

- ☐ Yes, my organization is an “Ontario business” as defined above.
- ☐ No, my organization is not an “Ontario business” as defined above.

## 3. Offer

The proponent has carefully examined the RFP documents and has a clear and comprehensive knowledge of the Deliverables required under the RFP. By submitting a proposal, the proponent agrees and consents to the terms, conditions, and provisions of the RFP, including the Form of Agreement, and offers to provide the Deliverables in accordance therewith at the rates set out in its proposal.

## 4. Rates

The proponent has submitted its rates in accordance with the instructions in the RFP. The proponent confirms that it has factored all of the provisions of Appendix A, including insurance and indemnity requirements, into its pricing assumptions and calculations.

## 5. Addenda

The proponent is deemed to have read and accepted all addenda issued by ONTC prior to the Deadline for Issuing Addenda. The onus is on proponents to make any necessary amendments to their proposals based on the addenda.

## 6. Communication with Competitors

For the purposes of this RFP, the word "competitor" includes any individual or organization, other than the proponent, whether or not related to or affiliated with the proponent, who could potentially submit a response to this RFP.

Unless specifically disclosed below under Disclosure of Communications with Competitors, the proponent declares that:

- (a) it has prepared its proposal independently from, and without consultation, communication, agreement, or arrangement with any competitor, including, but not limited to, consultation, communication, agreement, or arrangement regarding:

- (i) prices;

- (ii) methods, factors, or formulas used to calculate prices;
  - (iii) the quality, quantity, specifications, or delivery particulars of the Deliverables;
  - (iv) the intention or decision to submit, or not to submit, a proposal; or
  - (v) the submission of a proposal which does not meet the mandatory technical requirements or specifications of the RFP; and
- (b) it has not disclosed details of its proposal to any competitor and it will not disclose details of its proposal to any competitor prior to the notification of the outcome of the procurement process.

### **Disclosure of Communications with Competitors**

If the proponent has communicated or intends to communicate with one (1) or more competitors about this RFP or its proposal, the proponent discloses below the names of those competitors and the nature of, and reasons for, such communications:

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### **7. No Prohibited Conduct**

The proponent declares that it has not engaged in any conduct prohibited by this RFP.

### **8. Conflict of Interest**

The proponent must declare all potential Conflicts of Interest, as defined in Section 3.4.1 of the RFP. This includes disclosing the names and all pertinent details of all individuals (employees, advisers, or individuals acting in any other capacity) who (a) participated in the preparation of the proposal; **AND** (b) were employees of ONTC within twelve (12) months prior to the Submission Deadline.

If the box below is left blank, the proponent will be deemed to declare that (a) there was no Conflict of Interest in preparing its proposal; and (b) there is no foreseeable Conflict of Interest in performing the contractual obligations contemplated in the RFP.

Otherwise, if the statement below applies, check the box.

- ☐ The proponent declares that there is an actual or potential Conflict of Interest relating to the preparation of its proposal, and/or the proponent foresees an actual or potential Conflict of Interest in performing the contractual obligations contemplated in the RFP.

If the proponent declares an actual or potential Conflict of Interest by marking the box above, the proponent must set out below details of the actual or potential Conflict of Interest:

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## 9. Disclosure of Information

The proponent hereby agrees that any information provided in this proposal, even if it is identified as being supplied in confidence, may be disclosed where required by law or by order of a court or tribunal. The proponent hereby consents to the disclosure, on a confidential basis, of this proposal by ONTC to the advisers retained by ONTC to advise or assist with the RFP process, including with respect to the evaluation this proposal.

## 10. Proposal Irrevocable

The proponent agrees that its proposal shall be irrevocable for the Irrevocability Period specified in the RFP, running from the moment the Submission Deadline has passed.

## 11. Execution of Agreement

The proponent agrees that in the event its proposal is selected by ONTC, in whole or in part, it will finalize and execute the Agreement in the form set out in Appendix A to this RFP in accordance with the terms of this RFP.

## 12. Travel

To the extent that travel expenses are expressly provided for under the written agreement for the Deliverables, the proponent hereby acknowledges that travel expenses must be approved in advance by ONTC and must be in compliance with the Management Board of Cabinet Travel, Meal & Hospitality Expenses Directive, January 2020 (<https://www.ontario.ca/page/travel-meal-and-hospitality-expenses-directive-2020>)."

---

Signature of Proponent Representative

---

Name of Proponent Representative

---

Title of Proponent Representative

---

Date

I have the authority to bind the proponent.



## APPENDIX D - SCHEDULE OF PRICES

## APPENDIX E - MANDATORY SITE VISIT

### A. Site Visit Registration Form

**Reference Number:** RFP 2025 112

**Title:** Englehart Station Backup Generator Project

**Submitted To:** ONTARIO NORTHLAND TRANSPORTATION COMMISSION

Please confirm that you plan to attend the Mandatory Virtual Respondents' Meeting by emailing a completed copy of this **Registration Form** to [nicole.laplante@ontarionorthland.ca](mailto:nicole.laplante@ontarionorthland.ca), prior to Tuesday, December 16, 2025 at 4:00 p.m.

**Failure to submit this form by the time required may result in ONTC not being able to accommodate your attendance. PROPOSALS SUBMITTED BY RESPONDENTS THAT FAILED TO ATTEND THE RESPONDENTS' MANDATORY MEETING WILL BE DECLARED NON-COMPLIANT AND WILL BE REJECTED.**

**Date of Meeting:** Wednesday, December 17, 2025

**Time of Meeting:** at 2:00 p.m.

**Location:** via Teams Conference Call

**COMPANY NAME:** \_\_\_\_\_

**CONTACT NAME:** \_\_\_\_\_

**ADDRESS:** \_\_\_\_\_

**TELEPHONE:** \_\_\_\_\_

**EMAIL:** \_\_\_\_\_

**NUMBER OF PERSONS ATTENDING:** \_\_\_\_\_

ACCOMMODATION: ONTARIO NORTHLAND IS AN EQUAL OPPORTUNITY ORGANIZATION. ACCOMMODATION IS AVAILABLE FOR RESPONDENT'S WITH DISABILITIES THROUGHOUT THE PROCUREMENT PROCESS. IF ACCOMMODATION IS REQUIRED, PLEASE CONTACT [nicole.laplante@ontarionorthland.ca](mailto:nicole.laplante@ontarionorthland.ca).

## APPENDIX F - HEALTH, SAFETY AND ENVIRONMENTAL

### A. Health and Safety Policy



<b>DATE FORMALIZED</b> April 2016  <b>REVISED</b> February 2023	<b>Health and Safety Policy</b>
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#### POLICY STATEMENT

In keeping with our value of *Safety. Full Stop.* Ontario Northland Transportation Commission (ONTC) / Nipissing Central Railway (NCR) is committed to providing a safe and healthy work environment. Safety is core to everything we do. We don't settle for less, for our people or our customers, even when operating pressures make it difficult to do so.

As part of developing a safety culture, we will collectively strive to prevent accidents and incidents through a risk-based approach with the goal to continuously improve. Employees are required to report safety concerns immediately and can do so without fear of reprisal, while management ensures all employees receive quick follow-up.

We will adopt the latest in systems to improve the reporting, investigation, and implementation of corrective actions, close-out, and trend analysis of accidents and incidents. We will communicate safety and encourage engagement at all levels of the organization, such as during tailgates, briefings, and meetings.

The success of ONTC/NCR safety programs will be ensured through the collective and cooperative efforts of all, including management, employees, unions, and Workplace Health and Safety Committees. All ONTC/NCR members will jointly participate in safety, health and loss prevention initiatives to ensure a safe and healthy workplace for all employees.

A handwritten signature in black ink, appearing to read "Chad Evans".

**Chad Evans**  
**President and CEO**

*Safety. Full Stop.*

## B. Contractor Health and Safety Responsibility Agreement

In submitting this Proposal, I/We, on behalf of, \_\_\_\_\_  
(legal name of company)

certify the following:

- (a) I/We have a health and safety policy and will maintain a program to implement such policy as required by clause 25(2) (j) of the *Occupational Health and Safety Act*, R.S.O. 1990, c.O.1, as amended, (the "OHSA").

The requirements in (a) do not apply to employers with five (5) or less employees.

- (b) With respect to the Services being offered in this Proposal, I/We and on behalf of our proposed sub-consultants, acknowledge the responsibility to, and shall:

- (i) fulfill all of the obligations under the OHSA and ensure that all work is carried out in accordance with the OHSA and its regulations;
- (ii) ensure that adequate and competent supervision is provided as required under the OHSA to protect the health and safety of workers; and
- (iii) provide information and instruction to all employees to ensure they are informed of the hazards inherent in the work and understand the procedures for minimizing the risk of injury or illness.

- (c) I/We agree to take precautions reasonable in the circumstances for the protection of worker health and safety, as required under the OHSA.

Dated at \_\_\_\_\_ this \_\_\_\_\_ day of \_\_\_\_\_, 202\_\_.

An Authorized Signing Officer

\_\_\_\_\_

(Key Contact)

(Title)

\_\_\_\_\_

(Telephone Number)

\_\_\_\_\_

(Firm's Name)

\_\_\_\_\_

(Firm's Address)

\_\_\_\_\_

## C. Contractor Safety Pre-Qualification Form

**1. Company Identification:**

Company Name: \_\_\_\_\_

Telephone: \_\_\_\_\_

Mailing Address: \_\_\_\_\_

Fax: \_\_\_\_\_

E-mail: \_\_\_\_\_

 ONTC  
Use

**2. Form of Business:**

Sole

☐

Proprietor

☐

Partnership:

☐

Corporation

**3. Officers:**

Years with the Company

President / CEO \_\_\_\_\_

Vice President \_\_\_\_\_

Treasurer \_\_\_\_\_

Who is the manager most responsible for health and safety?

Name: \_\_\_\_\_

Title: \_\_\_\_\_

How many years has your business operated under its current name? \_\_\_\_\_

5. Under Current Management Since (Date) \_\_\_\_\_

**6. Parent Company Information**

Parent Name: \_\_\_\_\_

City: \_\_\_\_\_

Province / State: \_\_\_\_\_

Postal / Zip Code: \_\_\_\_\_

Subsidiaries: \_\_\_\_\_

**7. Insurance Contact Information**

Title: \_\_\_\_\_

Telephone: \_\_\_\_\_

Fax: \_\_\_\_\_

Insurance

8. Carriers: \_\_\_\_\_

Type of Coverage: \_\_\_\_\_

Telephone \_\_\_\_\_

**9. Organization:**

Describe the nature of the work your company specialized in:

☐

\_\_\_\_\_

☐

\_\_\_\_\_

☐

\_\_\_\_\_

☐

\_\_\_\_\_

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\_\_\_\_\_

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☐

\_\_\_\_\_

☐

\_\_\_\_\_

☐

\_\_\_\_\_

10 Are any of the above services that you perform normally subcontracted to others?

☐ Yes

☐ No

**11. Health and Safety Performance**

- |   |                              |                             |  |
|---|------------------------------|-----------------------------|--|
| a) Are any of the above services that you perform normally subcontracted to others?   | <input type="checkbox"/> Yes | <input type="checkbox"/> No |  |
| b) Can you provide a Workplace Safety & Insurance Clearance Certificate?  | <input type="checkbox"/> Yes | <input type="checkbox"/> No |  |
| c) Is your company experience rated (CAD-7, NEER)? If yes attach CAD-7 reports for the last 3 years and go to item e). If no, complete item d).   | <input type="checkbox"/> Yes | <input type="checkbox"/> No |  |
| d) Has an employee of your company suffered a fatal accident or "critical injury" as defined by the <u>Ontario Occupational Health &amp; Safety Act</u> ? Please provide for the last 3 years: i) total number of lost time accidents by rate group, ii) total number medical aid accidents, iii) total number of hours worked by each rate group | <input type="checkbox"/> Yes | <input type="checkbox"/> No |  |
| e) Has your company ever been subjected to a Workwell Audit? If yes, what was your final score? _____   | <input type="checkbox"/> Yes | <input type="checkbox"/> No |  |
| f) Are there judgements, claims or suits pending or outstanding against your company?   | <input type="checkbox"/> Yes | <input type="checkbox"/> No |  |
| g) Have you received any regulatory (MOL, MOE, etc.) orders and/or prosecutions in the last 3 years? If yes, provide details of all prosecution and fines for the past 3 years on a separate sheet.   | <input type="checkbox"/> Yes | <input type="checkbox"/> No |  |
| h) Do you have involvement in provincial safety associations such as the Infrastructure Health & Safety Association (IHSA) and/or Workplace Safety & Prevention Services (WSPS)? If yes, please name:   | <input type="checkbox"/> Yes | <input type="checkbox"/> No |  |

**12. Health and Safety Program and Procedures:**

- |   |                              |                             |  |
|---|------------------------------|-----------------------------|--|
| a) Do you have a written health and safety policy? If yes, include a copy.      | <input type="checkbox"/> Yes | <input type="checkbox"/> No |  |
| b) Do you have a written health and safety program?                             | <input type="checkbox"/> Yes | <input type="checkbox"/> No |  |
| c) If so, are the following elements addressed?                                 | <input type="checkbox"/> Yes | <input type="checkbox"/> No |  |
| i. Participation by all levels in the organization                              | <input type="checkbox"/> Yes | <input type="checkbox"/> No |  |
| ii. Accountabilities & responsibilities for managers, supervisors and employees | <input type="checkbox"/> Yes | <input type="checkbox"/> No |  |
| iii. Adequate resourcing for meeting health and safety requirements             | <input type="checkbox"/> Yes | <input type="checkbox"/> No |  |
| iv. Hazard identification and control   | <input type="checkbox"/> Yes | <input type="checkbox"/> No |  |
| v. Health and safety performance measurement and evaluation                     | <input type="checkbox"/> Yes | <input type="checkbox"/> No |  |
| vi. Corrective actions implementation   | <input type="checkbox"/> Yes | <input type="checkbox"/> No |  |

**13. Health and Safety Program: Does the health and safety program include procedures and practice documents such as:**

- |   |                              |                             |  |
|---|------------------------------|-----------------------------|--|
| a) Hazardous Energy Control, Lock-out – Tag-out | <input type="checkbox"/> Yes | <input type="checkbox"/> No |  |
|---|------------------------------|-----------------------------|--|

## Contractor Safety Pre-Qualification Form

b) Confined Space Entry	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
c) Working at Heights, Fall Protection	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
d) Personal Protective Equipment (PPE)	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
e) Portable / Electric Power Tools			
f) Vehicle Safety	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
g) Compressed Gas Cylinders	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
h) Electrical Equipment Grounding Assurance	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
i) Powered Industrial Vehicles (forklifts, cranes, etc.)	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
j) Heavy Construction Equipment (excavators, backhoes, bulldozers, etc.)	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
k) Excavation and Trenching	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
l) Housekeeping	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
m) Accident / Incident Reporting and Investigation	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
n) Hazard / Unsafe Condition Identification, Reporting and Communication	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
o) Workplace Hazardous Materials information System (WHMIS)	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
p) Emergency Action Plan / Evacuation Plan	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
q) Spill Response / Reporting	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
r) Respiratory Protection	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
s) Designated Substances Management	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
t) Waste Staging / Disposal	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
u) Traffic Control	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
v) Hearing Conservation	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
14. Do you have a policy/procedure for terminating contracts of subcontractors who do not comply with the requirements of the <u>Occupational Health &amp; Safety Act</u> , associated regulations and / or company safety rules?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
15. Do your employees read, write and understand English to the degree that they can safely perform their tasks without the aid of an interpreter? ( <i>If no, provide a description of your plan to assure that they can safety perform their tasks</i> )	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
16. Do you have personnel certified in Emergency First Aid and CPR on site? If yes, provide copies of certificates of training for site personnel proposed for the project?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
17. Do you have First Aid kits available to your staff?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
18. Does your company use a formalized Health and Safety Plan for conducting large projects?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
19. Does the company conduct pre-placement medical examinations?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
20. Is task-adequate PPE provided to workers?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	



## Contractor Safety Pre-Qualification Form

21. Are employees trained in PPE care, use and maintenance?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<div style="border: 1px solid black; height: 30px; width: 100%;"></div>
22. Do you have a corrective actions process for addressing individual health and safety performance deficiencies	<input type="checkbox"/> Yes <input type="checkbox"/> No	<div style="border: 1px solid black; height: 60px; width: 100%;"></div>
23. Equipment and Manuals:		
a. Do you conduct inspections on operating equipment (e.g. excavators, cranes, forklifts, vehicles, etc.) as per regulatory requirements?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<div style="border: 1px solid black; height: 30px; width: 100%;"></div>
b. Do you maintain operating equipment in compliance with regulatory requirements?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<div style="border: 1px solid black; height: 30px; width: 100%;"></div>
c. Do you maintain applicable pre-use inspection and maintenance certification records for operating equipment?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<div style="border: 1px solid black; height: 30px; width: 100%;"></div>
d. Are records available upon request	<input type="checkbox"/> Yes <input type="checkbox"/> No	<div style="border: 1px solid black; height: 30px; width: 100%;"></div>
24. Subcontractors		
a. Do you use health and safety performance criteria in the selection of contractors?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<div style="border: 1px solid black; height: 30px; width: 100%;"></div>
b. Do you require your subcontractor to have a written health and safety program?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<div style="border: 1px solid black; height: 30px; width: 100%;"></div>
c. Are your subcontractors included in	<input type="checkbox"/> Yes <input type="checkbox"/> No	<div style="border: 1px solid black; height: 30px; width: 100%;"></div>
i. health and safety orientation	<input type="checkbox"/> Yes <input type="checkbox"/> No	<div style="border: 1px solid black; height: 30px; width: 100%;"></div>
ii. health and safety meetings	<input type="checkbox"/> Yes <input type="checkbox"/> No	<div style="border: 1px solid black; height: 30px; width: 100%;"></div>
iii. workplace inspections	<input type="checkbox"/> Yes <input type="checkbox"/> No	<div style="border: 1px solid black; height: 30px; width: 100%;"></div>
iv. health and safety audits	<input type="checkbox"/> Yes <input type="checkbox"/> No	<div style="border: 1px solid black; height: 30px; width: 100%;"></div>
d. Does the company have a policy for the termination of contracts of subcontractors who do not comply with the Occupation Health and Safety Act, regulations under the Act, contractor rules, programs, protocols policies or procedures?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<div style="border: 1px solid black; height: 60px; width: 100%;"></div>
e. Does the company have a progressive discipline policy for employees and subcontractors?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<div style="border: 1px solid black; height: 30px; width: 100%;"></div>
25. Health and Safety Training		
a. Are you aware for the regulatory training requirements for your employees?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<div style="border: 1px solid black; height: 30px; width: 100%;"></div>
b. Have your employees received the required health and safety training?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<div style="border: 1px solid black; height: 30px; width: 100%;"></div>
c. Do you have specific health and safety training for supervisors?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<div style="border: 1px solid black; height: 30px; width: 100%;"></div>
d. Do you keep records of health and safety training for employees?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<div style="border: 1px solid black; height: 30px; width: 100%;"></div>
e. Are records of health and safety training available on request?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<div style="border: 1px solid black; height: 30px; width: 100%;"></div>
26. Job Skills		
a. Have employees been trained in appropriate job skills?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<div style="border: 1px solid black; height: 30px; width: 100%;"></div>
b. Are employee job skills certified where required by regulation or industry standard?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<div style="border: 1px solid black; height: 30px; width: 100%;"></div>

**Contractor Safety Pre-Qualification Form**

- c. Are certificates available upon request? ☐ Yes ☐ No
27. Health and Safety Supervision
- a. Does the company have a health & safety coordinator? ☐ Yes ☐ No
- b. Who is the highest ranking safety professional in the company ☐ Yes ☐ No
- \_\_\_\_\_

*I agree that the above information is true and correct to the best of my knowledge. I also agree to follow all terms and conditions of the Contractor Safety Program at all times while performing work for ONTC. I understand that supporting documentation may be requested for due diligence verification purposes.*

Name: (Please  
print) \_\_\_\_\_  
Signature: \_\_\_\_\_

Title: \_\_\_\_\_  
Date: \_\_\_\_\_

## APPENDIX G - TECHNICAL SPECIFICATIONS

### A. SPECIFICATIONS

SECTION	TITLE
<b>Ontario Northland Transportation Commission</b>	
<b>Div 00</b>	
	Available Project Information
<b>Div 01</b>	
01 11 00	Summary of Work
01 14 00	Work Restrictions
01 31 19	Project Meetings
01 32 00	Construction Progress Documentation
01 32 16.16	Construction Progress Schedule - Critical Path
01 32 33	Photographic Documentation
01 33 00	Submittal Procedures
01 35 29	Health and Safety Requirements
01 35 35	Fire Safety Requirements
01 41 00	Regulatory Requirements
01 43 00	Quality Assurance
01 45 00	Quality Control
01 51 00	Temporary Utilities
01 52 00	Construction Facilities
01 56 00	Temporary Barriers and Enclosures
01 57 00	Temporary Controls
01 61 00	Common Product Requirements
01 71 00	Examination and Preparation
01 73 00	Execution
01 74 00	Cleaning
01 74 19	Waste Management and Disposal
01 77 00	Closeout Procedures
01 78 00	Closeout Submittals
01 79 00	Demonstration and Training
01 91 13	General Commissioning Requirements
<b>Pitrowski Consultants Limited</b>	
21 05 01	Mechanical General Requirements
23 05 29	Pipe Hangers and Supports
23 11 23	Pipes, Valves and Fittings - Gas
26 05 00	General Electrical Requirements
26 05 20	Wire and Box Connections 0 - 1000 V
26 05 21	Wires and Cables 0 - 1000 V
26 05 28	Grounding - Secondary
26 05 29	Hangers and Supports for Electrical Systems

## APPENDIX G - TECHNICAL SPECIFICATIONS - *cont'd*

SECTION	TITLE
26 05 32	Outlet Boxes, Conduit Boxes and Fittings
26 05 34	Conduits, Conduit Fastenings and Conduit Fittings
26 05 44	Installation of Cables in Trenches
26 12 20	Load Bank Connection Cabinet
26 24 02	Service Entrance Board
26 24 17	Panelboards - Breaker Type
26 28 21	Moulded Case Circuit Breakers
26 28 23	Disconnect Switches - Fused and Non-Fused Up To 1000V
26 32 14	Power Generation - Natural Gas
26 36 23	Automatic Load Transfer Equipment

## 1 GENERAL

### 1.01 REFERENCE STANDARDS

- .1 Canadian Construction Documents Committee (CCDC)
  - .1 CCDC 2-2020, Stipulated Price Contract.

### 1.02 DEFINITIONS

- .1 Available Project Information: information identified in this section, of any type, and in any form, and identified as Reference Documents. Available Project Information, or any part thereof, does not form part of the Contract Documents unless specifically incorporated into Contract Documents by means of copying, transcribing, or referencing, or is listed in the Agreement as a Contract Document.
- .2 Contractor: synonymous with Respondent

### 1.03 USE AND RELIANCE UPON AVAILABLE PROJECT INFORMATION

- .1 Available Project Information is made available to Respondents for the purpose of disclosing information that is available to the Consultant and Owner.
- .2 Per CCDC, Available Project information is made available to Respondents to fulfill the Owner's duty to disclose all relevant Project information to Respondents.
- .3 Do not consider the Available Project Information as a representation or warranty that the information is necessarily accurate, complete, or appropriate.
- .4 Respondents are responsible for interpreting and forming their own conclusions about the Available Project Information, including consideration of the time the document was created. Respondents are encouraged to obtain specialist advice if necessary. The Owner and Consultant assume no responsibility for interpretations or conclusions made.
- .5 In the event there is a conflict between the Contract Documents and the recommendations contained in the Available Project Information, the Contract Documents shall govern.

### 1.04 AVAILABLE PROJECT INFORMATION

- .1 The following Available Project Information is not incorporated into the Contract Documents, but is made available to Respondents:

Refer to Appendix B - The Deliverables

- .2 The following Available Project Information is incorporated into the Contract Documents:

Refer to Appendix B - The Deliverables

**RELATED INSTRUCTIONS**

- .1 Report any irregularities or changed surface conditions at the Place of the Work to the Owner a minimum of 7 days before RFP close.

**2 PRODUCTS**

**2.01 NOT USED**

- .1 Not Used.

**3 EXECUTION**

**3.01 NOT USED**

- .1 Not Used.

**END OF SECTION**

## **1 GENERAL**

### **1.01 REFERENCE STANDARDS**

1. Canadian Construction Documents Committee (CCDC)
  - .1 CCDC 2-2020, Stipulated Price Contract.

### **1.02 RELATED REQUIREMENTS**

- .1 Refer to Specification Index for Sections applicable to this work.

### **1.03 WORK COVERED BY CONTRACT DOCUMENTS**

- .1 Work of this Contract includes the following:

Refer to Appendix B - The Deliverables
- .2 The Summary of Work provided above is for reference only:
- .3 Refer to Appendix B - The Deliverables

### **1.04 SUBMITTALS**

- .1 Submit for review and Acceptance in accordance with Section 01 33 00 - Submittal Procedures.
- .2 In addition to Submittals identified throughout the Specifications, submit the following:
  - .1 Submit Project Construction Schedule in accordance with Section 01 32 16.16 - Construction Progress Schedule.
  - .2 Submit Construction Waste Management Plan highlighting recycling and salvage requirements in accordance with Section 01 74 19 - Waste Management And Disposal.
  - .3 Submit site-specific Health and Safety Plan in accordance with Section 01 35 29.06 - Health and Safety Requirements.
  - .4 Submit a Construction Project Management Plan, including communication, risk, and Quality Management Plans.

### **1.05 WORK BY OTHERS**

- .1 The Work under this Contract shall be performed by the Contractor.
- .2 Contractor shall co-operate with other contractors retained by the Owner in carrying out their respective works and carry out instructions from the Owner and the Consultant. Refer to Contract Documents for additional requirements.

### **1.06 WORK SEQUENCE**

- .1 Construct Work in a manner that accommodates Owner's and public continued and/or intermittent use of premises during construction. Refer to Section 01 14 00 - Work Restrictions.
- .2 Co-ordinate Construction Schedule and Owners use of premises during construction.

- .3 Do not close off Owner or public usage of premises until use of one stage of Work will provide alternate usage.
- .4 Maintain fire access/control.
- .5 Protect workers and public safety.
- .6 Work near rail tracks shall be preapproved by the Owner and completed as per Owner's procedures and policies.

#### **1.07 CONTRACTOR USE OF PREMISES**

- .1 Contractor shall establish a Construction Area where the Contractor assumes the role of Constructor and will be responsible for the Construction Area until Ready for Takeover. The Contractor will be required to secure the Construction Area for the duration of the Project. The Contractor will be responsible for all activities inside the Construction Area, including health and safety. The Contractor shall coordinate the Work with the Owner to ensure that work being done by the Owner in the areas outside of the Construction Area is not interrupted. Access by the Contractor shall be restricted to the Construction Area only.
- .2 In some circumstances, Contractor shall coordinate and limit its access to Construction Area to allow:
  - .1 Owner occupancy.
  - .2 Partial owner occupancy.
  - .3 Work by other contractors or utilities providers.
  - .4 Public usage.
  - .5 Third Party Property Owner occupancy and use.
- .3 Co-ordinate use of premises under the direction of the Owner.
- .4 Refer to Section 01 51 00 - Temporary Utilities, Section 01 52 00 - Construction Facilities and Section 01 56 00 - Temporary Barriers and Enclosures, for temporary facilities, access roads and parking areas, traffic regulations, and utilities.

#### **1.08 OWNER OCCUPANCY**

- .1 Owner may occupy premises (adjacent buildings, railway tracks) during the entire construction period for execution of normal operations.
- .2 Co-operate with the Owner in scheduling of the Work to minimize conflict and to facilitate Owner occupancy and usage of the premises.

#### **1.09 Products Supplied by Others**

- .1 Contractor is responsible for receiving, unloading, if required, and handling Products Supplied by Others at the project site; setting or installing the Products in place; making any required connections to the mechanical, plumbing, electrical systems, and any other systems; and disposal of shipping or packing materials. Owner and/or Consultant and Contractor shall jointly inspect the Products for damage upon delivery to the Place of the Work. If this inspection determines that the



furnished Products are damaged or defective, the Owner will arrange for the necessary replacement or repairs. Contractor is responsible for protecting the Products Supplied by Others from damage during storage and handling and is responsible for damage caused to those Products during storage and handling.

- .2 Contractor to install all Products Supplied by Others in accordance with the manufacturer's installation instructions and the design Drawings, Specifications and Contract Documents.
- .3 Contractor to review manufacturer's installation instructions and advise the Consultant of any discrepancies or issues in a timely manner to avoid any potential delays.
- .4 Contractor to obtain manufacturer and Consultant approval before making any modification to Products Supplied by Others.
- .5 Upon completion of the installation of the Products Supplied by Others, the Contractor, the Consultant and/or the Owner will inspect the Work. Manufacturers and or Suppliers may participate in the inspection as required by their contract obligations. Upon Acceptance, the Contractor will provide a workmanship warranty in accordance with the Contract Documents.

#### 1.10 ALTERATIONS, ADDITIONS OR REPAIRS TO EXISTING BUILDING AND STRUCTURES

- .1 Execute Work with least possible interference or disturbance to premises, site, Owner operations, occupants, public and normal use of premises. Arrange with the Consultant and Owner to facilitate execution of Work.
- .2 Use only elevators existing in the building for moving workers and material.
  1. Investigate the status of existing elevators in building(s) to determine if they are functional and safe for moving workers and materials before the Work starts.
  2. Provide the required protection for passenger elevators walls and obtain the Owner approval before using these elevators.
  3. Accept liability for damage, safety of equipment and overloading of existing equipment.

#### 1.11 EXISTING SERVICES

- .1 Notify the Owner, the Consultant, Third Party Property Owners when applicable, and utility companies of intended interruption of existing services and obtain required permissions when applicable.
- .2 Where Work involves breaking into or connecting to existing services, provide the Owner at least five (5) Working Days' notice of necessary interruptions of mechanical or electrical service during the Work. Minimize the duration of interruptions. Carry out Work at times as directed by Authorities Having Jurisdiction and the Owner to ensure minimum disturbance to pedestrian and vehicular traffic and the Owner operations.
- .3 Provide alternative safe and protected routes for personnel, pedestrian and vehicular traffic.
- .4 Establish location and extent of service lines in the Place of the Work before starting Work. Notify the Consultant of findings.
- .5 Submit schedule for Acceptance by the Consultant ten (10) Working Days before any scheduled work for any shut-down or closure of active service or facility including power and communications services. Adhere to Accepted schedule and provide notice to affected parties. Refer to Section 01

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14 00 - Work Restrictions.

- .6 Provide temporary services when directed by the Owner to maintain critical operations, building and tenant services. Refer to Section 01 14 00 - Work Restrictions.
- .7 Provide adequate bridging over trenches which cross sidewalks or roads to permit normal traffic.
- .8 Where unknown services are encountered, immediately advise the Consultant and confirm findings in writing.
- .9 Protect, relocate or maintain existing active services. When inactive services are encountered, cap off in a manner approved by Authorities Having Jurisdiction and the Consultant.
- .10 Record locations of maintained, re-routed and abandoned service lines.
- .11 Construct barriers, as required, in accordance with Section 01 56 00 - Temporary Barriers and Enclosures.
- .12 Locate and trace existing underground services before any excavation.
- .13 Any damage to existing services during the Work will be the responsibility of the Contractor.

## 1.12 DOCUMENTS REQUIRED

- .1 Maintain at the Place of the Work, one copy of each document as follows:
  - .1 Contract Documents.
  - .2 Contract Drawings.
  - .3 Technical Specifications.
  - .4 Accepted Shop Drawings, Product data and samples.
  - .5 List of Outstanding Shop Drawings.
  - .6 Change Orders.
  - .7 Other Contract Amendments.
  - .8 Field Test Reports.
  - .9 Copy of Accepted Construction Schedule.
  - .10 Health and Safety Plan and Other safety related documents.
  - .11 As-Built Drawings.
  - .12 Other documents as specified.

## 2 EXECUTION

### 2.01 General Requirements:

- .1 Contractor will be required to complete the Work in accordance with applicable federal, provincial, and municipal laws.

- .2 The Contractor shall designate a Project Manager with overall responsibility for the Work. The Contractor will also designate a site supervisor who will be responsible for managing the Work at each site and be responsible for on-site safety, including all Sub-contractors and Suppliers. The site supervisor will be the single point of contact at each site. This site supervisor will be required to communicate with the Consultant and Owner as required to ensure the Work is completed safely with no impact on Owner operations.
- .3 The Contractor will be required to coordinate their hours of work with the Owner.
- .4 The Contractor's employees, Subcontractors, and Suppliers will be required to sign in and sign out every time they enter or leave the Place of the Work using a sign-in/sign-out log book which will be held by the site supervisor in charge of that site.
- .5 Contractor shall supply all necessary tools, machinery, and equipment to perform the Work including, but not limited to, forklifts, mobile cranes, hoisting equipment, scaffolding, ladders, man lifts, temporary lighting, heating, welding machines, ventilation, consumables, and any other material or equipment required to complete the Work. The Contractor shall provide all necessary vehicles and qualified personnel to transport people and materials.

**END OF SECTION**

## **1 GENERAL**

### **1.01 REFERENCE STANDARDS**

1. Canadian Construction Documents Committee (CCDC)
  - .1 CCDC 2-2020, Stipulated Price Contract.

### **1.02 RELATED REQUIREMENTS**

- .1 Canadian Rail Operating Rules.
- .2 ONTC Contractor/Subcontractor Policy.
- .3 Contractors Working On ONTC Property Near Railway Tracks.
- .4 Railway Flagging Protection Policy
- .5 Section 01 73 00 - Execution

### **1.03 ACCESS AND EGRESS**

- .1 Design, construct and maintain temporary "access to" and "egress from" Construction Areas, including stairs, runways, ramps or ladders and scaffolding, independent of finished surfaces and in accordance with the applicable laws of Authorities Having Jurisdiction.

### **1.04 USE OF SITE AND FACILITIES**

- .1 Execute Work with least possible interference or disturbance to normal use of premises. Make arrangements with Consultant to facilitate Work as stated.
- .2 Where premises are not owned by the Owner or are leased to Third Party Property Owners, provide written notification of access and planned Work to the Consultant (10) Working Days prior to the Work commencing.
- .3 Maintain existing services to building and provide for safe and protected access for people and vehicles.
- .4 Where security is reduced by the Work provide temporary means to maintain security.
- .5 Closures: protect the Place of the Work temporarily until permanent enclosures are completed.
- .6 Carry out Work Monday to Friday during hours of 7:00 am to 5:00 pm. Work outside of these hours, including on weekends, shall be pre-approved. Submit a request to the Owner for review and approval to work outside these hours a minimum of five (5) Working Days prior to the work commencing.

**1.05 SPECIAL REQUIREMENTS**

- .1 Ensure Contractor's personnel on site are familiar with and obey the policies and safety, fire, traffic and security regulations and have completed the ONTC site orientation training.
- .2 Keep within limits of Work and avenues of ingress and egress.
- .3 **Additional requirements:**
  - .2 Construct Work in stages and in a manner that accommodates the Owner's continued and/or intermittent use of premises during construction.
  - .3 ONTC operations shall not be interrupted. Coordinate with Consultant to facilitate the execution of the work with minimal disruption.
  - .4 Arrange and obtain Consultant approval for any temporary utility outages a minimum of seven (7) Working Days prior to the commencement date of the Work, including details about the Work to be completed and the schedule for the Work. Provide temporary power services to ensure no outages to maintain critical operations, building and tenant services.
  - .5 Limit access to the Construction Area.
  - .6 Employ just-in-time delivery methods to minimize required storage and laydown space.
  - .7 Arrange and obtain Owner approval to access ONTC building to complete Work under this Contract. Submit a request to Owner and the Consultant a minimum of seven (7) Working Days prior to the proposed commencement date for the Work, including details about the Work to be completed, the schedule for the Work and a list of Contractor employees and Subcontractors and Suppliers involved in the Work.
  - .8 Do not move Products and Construction Equipment through the building, unless authorized by the Owner.
  - .9 Park vehicles in locations approved by Consultant.
  - .10 Where the excavation, cutting and/or patching is required closely or immediately adjacent to, and/or drilling into, the existing building foundation assess impact and provide for Acceptance a site plan which demonstrates structure is not affected and specifies reinstatement prior to undertaking the Work.
  - .11 Contractor shall not access Third Party leased land without prior approval by the Owner. Submit a request to Owner and the Consultant a minimum of seven (7) Working Days prior to the proposed commencement date for the Work, including details about the Work to be completed, the schedule for the Work and a list of Contractor employees and Subcontractors and Suppliers involved in the Work.
  - .12 Park vehicles in locations approved by the Consultant and Third-Party Property Owner.
  - .13 Where the excavation, cutting and/or patching is required closely or immediately adjacent to, and/or drilling into, the existing building foundation assess impact and provide for Acceptance a site plan which demonstrates structure is not affected and specifies reinstatement prior to undertaking the Work.

- .14 Inform Owner and the Consultant of large deliveries and arrange the delivery in a manner that will not affect ONTC operations or the safety of public.
- .15 Obey site traffic rules and speed limits.

#### **1.06 SMOKING ENVIRONMENT**

- .1 Comply with smoking and vaping restrictions. Smoking and vaping are not permitted.

#### **1.07 VIDEO SURVEILLANCE:**

- .1 Video surveillance cameras are installed on Ontario Northland-owned and leased property to ensure the safety and security of passengers, employees, visitors, assets, infrastructure and the public. In accordance with the Freedom of Information and Protection of Privacy Act (FIPPA), the use of video surveillance cameras is carried out in a manner that respects and minimizes privacy intrusion. Recorded video footage only is protected, used or disclosed for investigative purposes related to a health and safety matter, a railway occurrence or for an incident of suspected crime, property damage, motor vehicle damage or personal injury.

#### **1.08 COMMUNICATION PROHIBITION:**

- .1 Owner will lead and make any announcements relating to the Work. The Contractor shall not make any announcement of any kind, including press releases, social media posts, public declarations, or any form of publication or announcement, in relation to the Work unless prior written consent is given by Owner. If the Contractor is contacted by any media outlet or other person or entity wishing to make any form of publication or announcement or seeking any information in relation to the Work, the Contractor shall not provide any information and shall refer the person to Owner and immediately notify Owner.

**END OF SECTION**

## **1 GENERAL**

### **1.01 REFERENCE STANDARDS**

- .1 Canadian Construction Documents Committee (CCDC)
- .1 CCDC 2-2020, Stipulated Price Contract.

### **1.02 RELATED REQUIREMENTS**

- .1 Section 01 33 00 – Submittal Procedures.

### **1.03 ADMINISTRATIVE**

- .1 Schedule and administer project meetings throughout the progress of the Work in accordance with the Specifications and at the call of the Owner or the Consultant.
- .2 Prepare agenda for meetings.
- .3 Unless otherwise specified in Specification sections, distribute written notice of each meeting five (05) Working Days in advance of meeting date to the Owner, the Consultant and any other meeting participants.
- .4 Provide physical space at one of the Places of Work and make arrangements for meetings.
- .5 The Consultant will chair the meetings.
- .6 Record the meeting minutes. Include significant proceedings and decisions. Identify actions by parties.
- .7 Reproduce and distribute copies of minutes within three (03) Working Days after meetings and transmit to meeting participants and, affected parties not in attendance, the Owner and the Consultant.
- .8 Representatives of the Contractor, Subcontractor and suppliers attending meetings shall be qualified and authorized to act on behalf of the party each represents.

### **1.04 PRECONSTRUCTION MEETING**

- .1 Within (10) Working Days after award of Contract and before Contractor mobilization to the Place of the Work, request a meeting of parties in contract to discuss and resolve administrative procedures and responsibilities related to the Work.
- .2 The Owner, Consultant, Contractor, major Subcontractors, field inspectors and supervisors and other parties, as applicable and at their discretion, will be in attendance.
- .3 Arrange with the Consultant the time and location of meeting and notify parties concerned minimum five (5) Working Days before meeting.
- .4 Agenda to include, but not limited to:
  - .1 Appointment of official representative of participants in the Work.
  - .2 Construction Schedule: in accordance with Section 01 32 00 – Construction Progress Documentation.

- .3 Schedule of submission of Shop Drawings. Submit Submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .4 Requirements for temporary facilities, site signage, offices, storage sheds, utilities, site set-up/Utility connections, laydown areas, fences in accordance with Section 01 52 00 - Construction Facilities.
- .5 Delivery schedule of specified equipment in accordance with Specifications.
- .6 Site security in accordance with Section 01 56 00 - Temporary Barriers and Enclosures.
- .7 Proposed changes, Change Orders, procedures, Acceptance required, approvals required, mark-up percentages permitted, time extensions, overtime, and administrative requirements.
- .8 Products Supplied by Others
- .9 Record As-Built Drawings in accordance with Section 01 33 00 - Submittal Procedures.
- .10 Operations and Maintenance manuals in accordance with Section 1 78 00 - Closeout Submittals.
- .11 Take-over procedures, Acceptance, and warranties in accordance with Section 01 78 00 - Closeout Submittals.
- .12 Monthly progress, claims, administrative procedures, photographs, holdbacks, commissioning, and training.
- .13 Appointment of inspection and testing agencies or firms.
- .14 Insurances, transcript of policies.
- .15 Site Safety and Fire protection in accordance with section 01 35 29.06 Health And Safety Requirements.
- .16 Existing conditions and ONTC site use/operations.
- .17 Cleaning and Waste Management
- .18 Invoicing and payment procedures
- .19 Lines of Communication, use of Social Media and distribution List.

## 1.05 PROGRESS MEETINGS

- .1 During course of Work and up to the completion date, schedule regular monthly progress meetings.
- .2 Contractor, major Subcontractors involved in Work, the Owner, and the Consultant are to be in attendance. Other parties may attend subject to the agreement of the Consultant.
- .3 Agenda to include, but not limited to, the following:
  - .1 Review, approval of minutes of previous meeting.
  - .2 Review of Work progress since previous meeting.



- .3 Field observations, problems, conflicts.
- .4 Problems which impede Construction Schedule.
- .5 Review of off-site fabrication delivery schedules.
- .6 Corrective measures and procedures to regain baselined Construction Schedule.
- .7 Proposed revisions to Construction Schedule.
- .8 Progress against Construction Schedule, during succeeding work period.
- .9 Review Submittal schedules: expedite as required.
- .10 Maintenance of quality standards.
- .11 Review proposed changes for effect on Construction Schedule and on completion date.
- .12 Safety concerns and issues.
- .13 Open items, Request For Information (RFI) and Supplemental Instructions (SI).
- .14 Other business.

#### **1.06 COMMISSIONING MEETINGS**

- .1 Arrange pre-commissioning meetings for the commissioning of equipment and systems in accordance with 01 91 13 – General Commissioning Requirements. The Owner, the Consultant and Contractor commissioning team shall be in attendance.
- .2 The meeting's intent is to ensure all parties are fully aware of the Commissioning expectations and requirements.
- .3 Meeting Agenda to include, but not limited to:
  - .1 Review Commissioning plan, Specification, and process.
  - .2 Review Commissioning documentation.
  - .3 Review all factory testing that will be required.
  - .4 Review training requirement/schedule.
  - .5 Discuss future Commissioning meetings.
  - .6 Issues/risks.

#### **1.07 SUBSTANTIAL COMPLETION MEETINGS:**

- .1 Arrange pre-Substantial Completion meetings. The Contractor, the Owner and the Consultant shall be in attendance.

**1.08 OTHER MEETINGS:**

- .1 The Contractor shall, as directed by the Consultant, attend Project coordination meetings, which may be required in addition to the specific meetings listed herein. Meetings may include topics related to site and railway safety, orientation and training, design compliance, Work progress and issues, installation of Products Supplied by Others, coordination of Subcontractors, quality, delivery and Acceptance activities, warranty, dispute resolution, and environmental issues.
- .2 Arrange meetings with the Consultant to coordinate large deliveries and in advance of complex installation.

**END OF SECTION**

## **1 GENERAL**

### **1.01 SUMMARY**

- .1 This Section specifies Contractor's responsibilities for the preparation and submission of Construction Schedule updates, progress reports and other documentation related to tracking progress of the Work.
- .2 The purpose of submitting construction progress documentation is to:
  - .1 Inform the Owner and the Consultant of actual progress versus planned progress, and;
  - .2 Provide assurance that scheduling issues are being proactively identified and addressed in a timely manner, and that planned progress is being maintained as closely as possible.

### **1.02 REFERENCE STANDARDS**

- .1 Canadian Construction Documents Committee (CCDC)
  - .1 CCDC 2-2020, Stipulated Price Contract.

### **1.03 RELATED SECTIONS**

- .1 Section 01 31 19 - Project Meetings.
- .2 Section 01 33 00 - Submittal Procedures.
- .3 Section 01 77 00 - Closeout Procedures.
- .4 Section 01 32 00.16 - Construction Progress Schedule – Critical Path Method (CPM).

### **1.04 SUBMISSION**

- .1 Submit, for review and Acceptance a Construction Schedule within ten (10) Working Days from Contract award. The Construction Schedule shall be based on the Contractor's initial schedule submitted at the RFP phase. Notify the Consultant of any major changes from the initial schedule.
- .2 Submit schedules in PDF and Excel files. Submit via email unless otherwise requested.
- .3 Consultant will review the Construction Schedule and return review copy within ten (10) Working Days after receipt.
- .4 If changes are required, resubmit, the Construction Schedule for Acceptance within five (5) Working Days after return of review copy.
- .5 The Accepted Construction Schedule shall be baselined and all progress updates shall be made against this version. The baselined Accepted Construction Schedule shall not be changed without the agreement of the Consultant and shall be subject to review and Acceptance prior to becoming the new baselined Construction Schedule.
- .6 Submit updated progress schedule with each monthly construction report in accordance with clause 2.2 of this section.
- .7 Distribute copies of revised schedule to:

- .1 Job site offices.
- .2 Subcontractors.
- .3 Other concerned parties.
- .8 Instruct recipients to report to Contractor within five (5) Working Days any problems anticipated by timetable shown in the schedule.

### **1.05 CONSTRUCTION SCHEDULE UPDATES**

- .1 Show projected percentage of completion of each item as of the last date of the month.
- .2 Indicate progress of each activity to date of submission schedule.
- .3 Show changes occurring since previous submission of Construction Schedule:
  - .1 Major changes in scope.
  - .2 Activities modified since previous submission.
  - .3 Revised projections of progress and completion.
  - .4 Other identifiable changes.
- .4 Provide a narrative report to define:
  - .1 Problem areas, anticipated delays, and impact on schedule.
  - .2 Corrective action recommended and its effect.
  - .3 Effect of changes on schedules of other prime contractors.
- .5 Schedules shall be continuous, and logic driven without using hard constraints, Lags and Leads.

## **2 PRODUCTS:**

### **2.01 DAILY CONSTRUCTION REPORTS:**

- .1 Prepare a daily construction report recording the following information concerning events at Project Site and include progress photos as applicable:
  - .1 List of subcontractors at Project Site.
  - .2 Approximate count of personnel at Project Site.
  - .3 Equipment at Project Site.
  - .4 Material Deliveries.
  - .5 Accidents/Incidents/Near Misses.
  - .6 Meetings and Significant Decisions.
  - .7 Unusual and emergency Events.
  - .8 Stoppages, Delays, Shortages, and Losses.
  - .9 Orders and requests of Authorities Having Jurisdiction.
  - .10 Change Orders received and implemented.

- .11 Construction Work Change Directives received and implemented.
- .12 Services Connected and Disconnected.
- .13 Equipment or System Tests and Startups.
- .14 Partial Completions and Occupancies.
- .15 Substantial Completions Authorized.
- .16 Progress made in Work that day
- .2 Submit daily reports at the end of each shift to ONTC and the Consultant.
- .3 A report shall be submitted for each Work site.

## 2.02 MONTHLY CONSTRUCTION REPORTS:

- .1 Monthly progress reports shall be prepared by the Contractor and submitted to the Consultant in the form of an electronic copy of the relevant Construction Schedule files to demonstrate how the Work is actually progressing and the planned and detailed sequencing of the Work at the time of the report. The cut-off date for the monthly progress report shall be the last date of the month and the report shall be submitted no later than ten (10) Working Days after the cut-off date.
- .2 Each monthly progress report shall be in a format acceptable to the Owner, and shall be arranged according to the following headings and sub-headings:
  - .1 Executive Summary.
    - 1. Activity to (date).
    - 2. Forecast activity to (date).
  - .2 Project Cost Information:
    - 1. Budget Summary.
    - 2. Cash Allowance Log.
    - 3. Change Order Log.
  - .3 Project Data:
    - 1. Project Schedule.
    - 2. Shop Drawing Log.
    - 3. Site Inspection Log.
    - 4. Site Testing Log.
  - .4 Risk and Critical Issues Log.
  - .5 Site Photos.
- .3 Each monthly progress report shall include:
  - .1 An updated schedule showing progress against the baselined Accepted Construction Schedule, comparing actual and target progress for all milestones and activities. Sort activities by activity identification number and accompany with descriptions. List early and late start and finish dates together with durations, codes and float.

- .2 Criticality report listing activities and milestones with up to five (5) days of total float used as first sort for ready identification of near critical paths through entire project. List early and late starts and finishes dates, together with durations, codes and float for critical activities.
- .3 Progress report in early start sequence, listing for each trade, activities due to start, to be underway, or finished within two months from monthly update date. List activity identification number, description and duration. Provide columns for entry of actual start and finish dates, duration remaining and remarks concerning action required.
- .4 A schedule narrative, including:
  1. Detailed descriptions of progress, including each stage of procurement, fabrication, delivery to site, construction, installation, and testing;
  2. Discussion of the basis for any work sequencing, logic, interdependencies or original activity duration revisions incorporated into an updated progress schedule; and
  3. Comparisons of actual and planned progress, with a brief commentary on any actual or forecast delays or problems that might have an impact on the completion. date of the Work, and a discussion of the measures being (or to be) adopted to overcome these.
  4. Charts showing the status of Submittals, permits and approvals, utility relocations, purchase orders, manufacturing/fabrication and construction.
  5. For each fabricated item, the name and location of the fabricator, percentage progress, and the actual or expected dates of commencement of fabrication, Contractor's inspections, tests and delivery.
  6. Progress photographs taken, prepared, and submitted in formats specified, all in accordance with Section 01 32 33 - Photographic Documentation.
  7. Request For Information (RFI) log.
- .5 Timely submission of updates is of significant and crucial importance to the management of this project. Lack of or late receipt of updates diminishes their value to the Owner and the Consultant. Therefore, if the Contractor fails to submit any progress schedule or required revision to a progress schedule within the prescribed time period, the Owner, in its sole discretion, may hold back subsequent progress payments until the updated schedule is submitted or the revision is accepted.
- .6 The monthly progress reports and progress schedules will be used by the Owner and the Consultant to monitor the Contractor's performance against the baselined Accepted Construction Schedule.

### **2.03 RECORDING ACTUAL SITE CONDITIONS ON AS-BUILT DRAWINGS**

- .1 Obtain from Consultant an electronic copy of the construction Drawings for the purpose of creating As-built drawings.
- .2 Record information on a set of black line opaque drawings.
- .3 Use marking pens, maintaining separate colours for each major system, for recording information.

- .4 Clearly label each As-Built Drawing as "AS-BUILT DRAWING". Record information concurrently with construction progress. Do not conceal Work until required information is recorded.
- .5 Record actual construction including:
  - .1 Measured depths of elements of foundation in relation to finish first floor datum;
  - .2 Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements;
  - .3 Measured locations of pipes, ducts, conduits, outlets, fixtures, access panels, and appurtenances, referenced to visible and accessible features of construction;
  - .4 Field changes of dimension and detail;
  - .5 Changes made by Change Orders and Supplemental Instructions;
  - .6 References to Shop Drawings, where Shop Drawings show more detail.
  - .7 Referenced Standards to related Shop Drawings and modifications.
  - .8 Details not on original Contract drawings.
- .6 Do not use As-Built Drawings for construction purposes.
- .7 Following construction, Contractor shall prepare As-Built Record Drawings in accordance with Section 01 78 00 Closeout Submittals.

#### **2.04 MATERIAL LOCATION REPORTS:**

- .1 At bi-weekly intervals, prepare and submit a comprehensive list of materials delivered to and stored at Place of the Work. List shall be cumulative, showing materials previously reported plus items recently delivered. Include with list a statement of progress on and delivery dates for materials or items of equipment fabricated or stored away from Project site.
- .2 Indicate the following categories for stored materials:
  - .1 Material stored prior to previous report and remaining in storage.
  - .2 Material stored prior to previous report and since removed from storage and installed.
  - .3 Material stored following previous report and remaining in storage.

### **3 EXECUTION**

#### **3.01 CONTRACTOR'S CONSTRUCTION SCHEDULE**

- .1 Contractor's Construction Schedule Updating: At weekly intervals, update schedule to reflect actual construction progress and activities.
- .2 Distribution: Distribute copies of Accepted Construction Schedule to the Owner, Consultant, Subcontractors, testing and inspecting agencies, and other parties identified by Contractor with a need-to-know schedule responsibility.
  - .1 Post copies in Project meeting rooms and temporary field offices.

- .2 When revisions are made, distribute updated schedules to the same parties and post in the same locations. Delete parties from distribution when they have completed their assigned portion of the Work and are no longer involved in performance of construction activities.

**END OF SECTION**



## **1 GENERAL**

### **1.01 REFERENCE STANDARDS**

- .1 Project Management Institute (PMI Standards)
  - .1 A Guide to the Project Management Body of Knowledge (PMBOK Guide) - [Fifth Edition].
  - .2 Practice Standard for Scheduling - [2011].
- .2 AACE International Recommended Practice 37R-06 entitled, "Schedule Levels of Detail – As Applied in Engineering, Procurement and Construction".
- .3 Canadian Construction Documents Committee (CCDC)
  - .1 CCDC 2-2020, Stipulated Price Contract.

### **1.02 RELATED REQUIREMENTS**

- .1 Section 01 32 00 – Construction Progress Documentation

### **1.03 DEFINITIONS**

- .1 Activity: Distinct, scheduled portion of work performed during course of a project.
- .2 Activity Duration: time in calendar units between start and finish of a scheduled activity. See also Duration.
- .3 Assumption: factor in planning process that is considered true, real, or certain without proof or demonstration.
- .4 Bar Chart (Gantt Chart): graphic display of schedule-related information.
  - .1 In typical bar chart, schedule activities or work breakdown structure components are listed down left side of chart, dates are shown across the top, and activity durations are shown as date-placed horizontal bars.
- .5 Baseline: approved version of a work product that can be changed only through formal change control procedures and is used as a basis for comparison.
- .6 Budget: approved estimate for a project or work breakdown structure component or schedule activity.
- .7 Cash Flow: projection of progress payment requests based on cash loaded construction schedule.
- .8 Change Control: process whereby modifications to documents, deliverables, or baselines associated with a project are identified, documented, approved, or rejected.
- .9 Completion Milestones: they are firstly [Interim Certificate] [Substantial Completion] and secondly Final Certificate.
- .10 Constraint: scheduled limiting factor that effects execution of a project, program, portfolio, or process.

- .11 Contract: mutually binding agreement that obligates a seller to provide a specified product or service or result and obligates a buyer to pay for it.
- .12 Control: comparing actual performance with planned performance, analyzing variance, assessing trends, to effect process improvements, evaluating possible alternatives, and recommending appropriate corrective action as needed.
- .13 Corrective Action: intentional activity that realigns performance of project work with project management plan.
- .14 Critical Path: sequence of activities that represents longest path through a project, which determines shortest possible duration.
- .15 Critical Path Activity: activity on critical path in a project schedule.
- .16 Critical Path Method (CPM): method used to estimate minimum project duration and determine amount of scheduling flexibility on logical network of paths within schedule model.
- .17 Data Date: point in time when the status of the project is recorded.
- .18 Decomposition: technique used for dividing and subdividing project scope and project deliverables into smaller, more manageable parts.
- .19 Deliverable: unique and verifiable product, result, or capability to perform a service that is required to be produced to complete a process, phase, or project.
- .20 Duration: total number of work periods (not including holidays or other non-working periods) required to complete a schedule activity or work breakdown structure component.
  - .1 Usually expressed as workdays or work weeks.
- .21 Early Finish Date (EF): in Critical Path Method, earliest possible point in time when uncompleted portions of schedule activity can finish based on schedule network logic, data date, and schedule constraints.
  - .1 Early finish dates can change as Project progresses and changes are made to Project plan.
- .22 Early Start Date (ES): in Critical Path Method, earliest possible point in time when uncompleted portions of a schedule activity can start based on schedule network logic, data date, and schedule constraints.
  - .1 Early start dates can change as Project progresses and changes are made to Project Plan.
- .23 Execute: directing, managing, performing, and accomplishing project work; providing deliverables, and providing work performance information.
- .24 Finish Date: point in time associated with a schedule activity's completion.
  - .1 Usually qualified by one of following: actual, planned, estimated, scheduled, early, late, baseline, target, or current.
- .25 Float: (also known as slack) amount of time a schedule activity can be delayed without delaying early start date of a successor or violating a schedule constraint.
  - .1 This resource is available to both [PWGSC] and Contractor.

- .26 Forecast: estimate or prediction of conditions and events in project future based on information and knowledge available at time of forecast.
  - .1 Information is based on projects past performance and expected future performance, and includes information that could impact project in future, such as estimate at completion and estimate to complete.
- .27 Gantt Chart: see Bar Chart.
- .28 Impact Analysis: schedule analysis technique that adds a modeled delay to an accepted construction schedule to determined possible outcome of that delay on project completion.
- .29 Imposed Date: a fixed date imposed on a schedule activity or schedule milestone, usually in form of a “start no earlier than” and “finish no later than” date.
- .30 Lag: amount of time whereby a successor activity is required to be delayed with respect to a predecessor activity.
- .31 Late Finish Date (LF): in critical path method, latest possible point in time when uncompleted portions of a schedule activity can finish based on schedule network logic, project completion date, and schedule constraints.
- .32 Late Start Date (LS): in critical path method, latest possible point in time when uncompleted portions of a schedule activity can start based on schedule network logic, project completion date, and schedule constraints.
- .33 Lead: amount of time whereby a successor activity can be advanced with respect to a predecessor activity.
- .34 Logic Diagram: see Project network diagram.
- .35 Logical Relationship: dependency between two activities or between an activity and a milestone.
- .36 Master Schedule: summary-level schedule that identifies major deliverable; work breakdowns structure components, and key schedule milestones.
- .37 Milestone: significant point or event in a project, program, or portfolio.
- .38 Monitor: collect project performance data with respect to a plan, procedure performance measures, and report and disseminate performance.
- .39 Network: see Project Schedule Network Diagram.
- .40 Non-Critical Activities: activities which when delayed, do not affect specified Contract duration.
- .41 Project Control System: fully computerized system utilizing commercially available software packages.
- .42 Project Management: application of knowledge, skills, tools, and techniques, to project activities to meet project requirements.
- .43 Project Management Plan: approved document that describes how project will be executed, monitored, and controlled.
  - .1 Primary uses of Project Management Plan are to document planning assumptions and decisions, facilitate communication among stakeholders, and document approved scope,

cost, and schedule baselines.

- .2 Project Management Plan may be summary or detailed.
- .44 Project Management Planning: development and maintenance of Project Management Plan.
- .45 Project Management Planning, Monitoring and Control System: overall system operated to enable monitoring of Project Work in relation to established milestones.
- .46 Project Schedule: planned dates for performing activities and planned dates for meeting milestones.
- .47 Project Schedule Network Diagram: graphical representation of logical relationships among project schedule activities.
  - .1 Always drawn from left to right to reflect Project chronology.
- .48 Project Scope: work performed to deliver a product, service, or result with specified features and functions.
- .49 Quantified days duration: Working Days based on 5 day work week, discounting statutory holidays.
- .50 Risk: uncertain event or condition that, if it occurs, has positive or negative effect on one or more project objectives.
- .51 Schedule: see Project Schedule.
- .52 Schedule Data: collection of information for describing and controlling schedule.
- .53 Scope: see Project Scope.
- .54 Start Date: point in time associated with activity's start, usually qualified by one of following: actual, planned, estimated, scheduled, early, late, target, baseline, or current.
- .55 Work Breakdown Structure (WBS): hierarchical decomposition of total scope of work to be carried out by project team to accomplish project objectives and create the required deliverables.

## **1.04 ADMINISTRATIVE REQUIREMENTS**

- .1 Scheduling:
  - .1 Ensure that planning process is iterative and results in generally top-down processing with more detail being developed as planning progresses, and decisions concerning options and alternatives are made.
  - .2 Ensure Construction Schedule efficiencies through monitoring of Project in detail to ensure integrity of Critical Path, by comparing actual completions of individual activities with their scheduled completions, and review progress of activities that has started but are not yet completed.
  - .3 Monitor sufficiently often so that causes of delays can immediately be identified and mitigated.
- .2 Project monitoring and reporting:

- .1 Keep team aware of changes to schedule, and potential consequences as Project progresses.
- .2 Use narrative reports to provide advice on seriousness of challenges and measures to overcome them.
- .3 Begin narrative reporting with statement on general status of Project followed by summarization of delays, potential problems, corrective measures and Project status criticality.
- .3 Critical Path Method (CPM) Requirements:
  - .1 Ensure Construction Schedule is practical and remains within specified Contract duration.
  - .2 Submit Construction Schedule for Acceptant. If rejected, as schedule is deemed impractical by Consultant, revise and resubmit, until Acceptance is achieved.
  - .3 Change to Contract Duration:
    - .1 .1 Acceptance of Construction Schedule showing scheduled Contract duration shorter than specified Contract duration does not constitute a change to Contract.
    - .2 .2 Duration of Contract may only be changed through bilateral Agreement.
  - .4 Consider the Construction Schedule deemed practical by the Consultant, showing Work completed in less than specified Contract duration, to have float.
  - .5 First Milestone on Construction Schedule will identify start Milestone with an Early Start, "ES", constraint date equal to Award of Contract date.
  - .6 Calculate dates for completion of milestones from plan and Schedule using specified time periods for Contract.
  - .7 Calculations on updates such that if early finish of Ready for Takeover falls later than specified Contract duration then float calculation to reflect negative float.
  - .8 Delays to non-critical activities with float may not be basis for time extension.
  - .9 Do not use float suppression techniques such as software constraints, preferential sequencing, special lead/lag logic restraints, extended activity times or imposed dates other than required by Contract Documents.
  - .10 Allow for adverse weather conditions normally anticipated and show in Construction Schedule.
    - .1 Specified Contract duration has been predicated assuming normal amount of adverse weather conditions appropriate for the location of the Work.
  - .11 Provide necessary crews and manpower to meet schedule requirements for performing Work within specified Contract duration.

.1 Simultaneous use of multiple crews on multiple fronts on multiple critical paths may be required.

.12 Arrange participation on and off site of Subcontractors and suppliers, as required by the Consultant, for purpose of network planning, scheduling, updating and progress monitoring.

.1 Acceptance by the Consultant of original networks and revisions do not relieve Contractor from duties and responsibilities required by Contract Documents.

### **1.05 ACTION AND INFORMATIONAL SUBMITTALS**

.1 Submit impact analysis of schedule for changes that result in extension of contract duration.

.1 Include draft Construction Schedule update and report as outlined in article "PROGRESS MONITORING AND REPORTING".

### **1.06 QUALITY ASSURANCE**

.1 Use experienced personnel, fully qualified in planning and scheduling to provide services from start of construction to Ready for Takeover, including Commissioning.

### **1.07 WORK BREAKDOWN STRUCTURE (WBS)**

.1 Prepare construction Work Breakdown Structure (WBS) within five (5) Working Days of contract award.

.1 Develop WBS through at least five levels: project, stage, element, sub-element and work package.

### **1.08 PROJECT MILESTONES**

.1 Contractor shall include appropriate Milestones in accordance with the scope contained in the Contract Documents. At minimum, Milestones should be included, by station, for Shop Drawing start and end, construction start and end, testing and commissioning start and end, Substantial Performance of the Work and Ready for Takeover.

### **1.9 DETAILED CONSTRUCTION SCHEDULE**

.1 Provide detailed project Construction Schedule (CPM logic driven) within ten (10) Working Days of Contract award date showing activity sequencing, interdependencies and duration estimates. In addition to the Milestones listed in 1.09.1, include listed activities as follows:

.1 Sequence for Shop Drawings.

.2 Samples.

- .3 Submittals and Consultant review period.
- .4 Procurement.
- .5 Construction.
  - .1 Site clearing.
  - .2 Site utilities.
  - .3 Foundation Work.
  - .4 Special Subcontractor Work.
  - .5 Equipment delivery and Installations.
  - .6 Finishes.
- .6 Installation.
- .7 Site works.
- .8 Testing.
- .9 Commissioning and Acceptance.
- .10 Line Closures and flagging
- .11 Any required permits
- .12 Installation of Protection of Finishings – Owner review prior to installation
- .2 Schedule should be Level 3, in form of a horizontal bar chart. “Level 3” means the level of detail required for a Project Control Schedule as set out in the AACE International Recommended Practice 37R-06 entitled, “Schedule Levels of Detail – As Applied in Engineering, Procurement and Construction”.
- .3 Detail CPM schedule to cover the activities in detail from Contract award date to Substantial Performance of the Work and Ready for Takeover.
- .4 Clearly show sequence and interdependence of construction activities and indicate:
  - .1 Start and completion of all items of Work, their major components, and interim milestone completion dates.
  - .2 Activities for procurement, delivery, installation and completion of each major piece of equipment, materials and other supplies, including:
    - .1 Time for Submittals, resubmittals and review.
    - .2 Time for fabrication and delivery of manufactured Products for Work.
    - .3 Delivery of Products Supplied by Others
    - .4 Interdependence of procurement and construction activities.

- .3 Include sufficient detail to assure adequate planning and execution of Work. Activities duration should be less than ten (10) Working Days.
- .6 Provide level of detail for Project activities such that sequence and interdependency of Contract Document tasks are demonstrated and allow co-ordination and control of Project activities. Show continuous flow from left to right.
- .7 Ensure activities with no float are calculated and clearly indicated on logical CPM construction network system as being, whenever possible, continuous series of activities throughout length of Project to form "Critical Path". Increased number of critical activities is seen as indication of increased risk.
- .8 Insert Change Orders in appropriate and logical location of Construction Schedule. After analysis, clearly state and report to Consultant for review effects created by insertion of new Change Order.

#### **1.10 REVIEW OF CONSTRUCTION DETAIL SCHEDULE**

- .1 Submit Construction Schedule in accordance with 01 32 00 Construction Progress Documentation.
- .2 Submittal of Construction Schedule indicates that it meets Contract Document requirements and will be executed generally in sequence.

#### **1.11 COMPLIANCE WITH DETAIL SCHEDULE**

- .1 Comply with Accepted Construction Schedule.
- .2 Proceed with significant changes and deviations from scheduled sequence of activities that cause delay, only after written receipt of Acceptance by Consultant.
- .3 Identify activities that are behind schedule and causing delay. Provide measures to regain slippage.
  - .1 Corrective measures may include:
    - .1 Increase of personnel with more experience/qualifications on site for effected activities or work package.
    - .2 Increase in materials and equipment.
    - .3 Overtime work and additional work shifts.
- .4 Submit to Consultant, justification, Construction Schedule data and supporting evidence for approval of extension to Contract completion date or interim milestone date when required. As part of supporting evidence, include:
  - .1 Written submission of proof of delay based on revised activity logic, duration and costs, showing time impact analysis illustrating influence of each change or delay relative to approved Construction Schedule.



- .2 Prepared schedule indicating how change will be incorporated into overall logic diagram. Demonstrate perceived impact based on date of occurrence of change and include status of construction at that time.
- .3 Other supporting evidence requested by Owner and Consultant.
- .4 Do not assume approval of Contract extension prior to receipt of written Acceptance from Owner.
- .5 In event of Contract extension, display in Construction Schedule that scheduled float time available for Work involved has been used in full without jeopardizing earned float.
  - .1 Consultant will determine and advise Contractor number of allowable days for extension of Contract based on Construction Schedule updates for period in question, and other factual information.
  - .2 Construction delays affecting Construction Schedule will not constitute justification for extension of the Ready for Takeover date.

## **1.12 PROGRESS AND REPORTING**

- .1 On an ongoing basis, the Contractor shall keep the Construction Schedule on job site to show "Progress to Date". Arrange participation on and off site of Subcontractors and suppliers, as, and when necessary, for purpose of network planning, scheduling, updating and progress monitoring. Inspect Work with Consultant and or Owner at least once monthly to establish progress on each current activity shown on applicable networks.
- .2 Update and reissue project Work Breakdown Structure and relevant coding structures as project develops and changes.
- .3 Perform Construction Schedule update monthly with status dated (Data Date) on last date of month. Update to reflect activities completed to date, activities in progress, logic and duration changes.
- .4 Do not automatically update actual start and finish dates by using default mechanisms found in project management software.
- .5 Submit to Consultant copies of updated Construction Schedule.
- .6 Requirements for monthly progress monitoring and reporting are basis for progress payment request.
- .7 As part of the monthly progress report, in accordance with 01 32 00 – Construction Progress Documentation, include a written report based on the updated Construction Schedule, showing Work performed to date, comparing Work progress to planned, and presenting current forecasts. Report summarize progress, defining problem areas and anticipated delays with respect to Work schedule, and critical paths. Explain alternatives for possible schedule recovery to mitigate potential delay. Include in report:
  - .1 Description of progress made.

- .2 Pending items and status of: permits, Shop Drawings, Change Orders, possible time extensions.
- .3 Status of Contract Ready for Takeover and Milestones.
- .4 Current and anticipated problem areas, potential delays and corrective measures.
- .5 Review of progress and status of Critical Path activities.

**END OF SECTION**

## **1 GENERAL**

### **1.01 REFERENCE STANDARDS**

- .1 Canadian Construction Documents Committee (CCDC)
  - .1 CCDC 2-2020, Stipulated Price Contract.

### **1.02 MEASUREMENT AND PAYMENT**

- .2 Separate measurement or payment will not be made for Work required under this section. All costs in connection with the Work specified herein will be considered to be included with the related item of Work or incidental to the Work.

### **1.03 FREQUENCY OF PHOTOGRAPHIC DOCUMENTATION**

- .1 The Contractor shall take photographs as indicated in Specification sections, at all construction milestones as identified in the Accepted Construction Schedule, and at each of the following stages of construction:
  - .1 Before commencement of clearing and demolition;
  - .2 Upon completion of clearing and demolition;
  - .3 Upon completion of excavation
  - .4 Upon completion of foundation and concrete work.
  - .5 Delivery and installation of Structural steel.
  - .6 Building Envelope Construction (roof, walls, doors, windows, etc.)
  - .7 Upon completion of any remedial Work.
  - .8 Upon completion of the Work.
  - .9 Anytime a problem arises that may result in a potential claim and the problem can be illustrated by photographs.
- .2 Furnish at least three different views or vantage points of each milestone and stage of construction. Furnish an average of 20 photographs each month until completion of the Work. Location of views shall be as agreed with the Consultant.
- .3 Contractor shall take photos at each shift and include photos in the daily report in accordance with section 01 32 00-Construction Progress Documentation.
- .4 Submit photos to the Consultant with the monthly progress reports in accordance with section 01 32 00-Construction Progress Documentation and other reports in accordance with Specification sections and Contract Documents.
- .5 Transfer photos to the Owner at the end of the Project.

### **1.04 QUALITY AND QUANTITY OF PHOTOGRAPHS**

- .1 All photographs shall be digital photographs in pdf, jpg or png format with the following requirements:
  - .1 Minimum resolution: 1024 x 768 pixels.

- .2 Colors: 24 Bits per Pixel.
  - .3 Maximum File size of 3MB.
- .2 Digital photographs provided shall use the following file naming convention:
- PYYMMDDLOCATIONSEQ.EXT
- P = Photograph
  - YYMMDD = Date in Year, Month, Day format
  - LOCATION = (8 Characters maximum) Location taken, either by BART 3-character alpha numeric + 5, or Milepost by line designation. (e.g. M90, C40-west, A1MP32-1, etc.)
  - SEQ = Sequential number from 001 to 999.
  - EXT = File extension (e.g. pdf, jpg, or png).
- .3 If flash drives are used to store photos they shall be labeled to include the Contract number and the date the photographs were taken.

#### 1.05 IDENTIFICATION OF PHOTOGRAPHS

- .1 The following information shall be furnished for each digital photograph in a manner approved by the Owner.
- .1 Title of Contract and Contract Number;
  - .2 Site location.
  - .3 Identification of subject shown;
  - .4 Station point of camera and direction of view;
  - .5 Time and date taken.

#### 1.06 VIDEO RECORDINGS

- .1 The Contractor shall provide video recordings to supplement Contract photographs of certain construction milestones as identified in the Accepted Construction Schedule, and events as indicated herein:
- .1 Start of construction, including clearing and demolition operations, as applicable;
  - .2 Highlights of all formal inspections; and
  - .3 Highlights of the final inspection and acceptance by the Owner and Consultant and Authority having jurisdiction.
  - .4 Video recordings shall be at minimum standard definition (480p).
- .2 Video recordings shall include an unobtrusive time and date indicator on the film, accurately depicting the time and date when the photography was performed.
- .3 If flash drives are used to store videos they shall be labeled to include the Contract number and the date the video was taken.
- .4 Individual digital video files shall use the file naming convention indicated above, paragraph 1.03.2, however the filename shall be modified such that the first character shall be "V" for video instead of "P".

END OF SECTION

## **1 GENERAL**

### **1.01 REFERENCE STANDARDS**

- .1 Canadian Construction Documents Committee (CCDC)
  - .1 CCDC 2-2020, Stipulated Price Contract.

### **1.02 RELATED REQUIREMENTS**

- .1 Section 01 32 33 – Photographic Documentation
- .2 Section 01 43 00 - Quality Assurance.

### **1.03 ADMINISTRATIVE REQUIREMENTS**

- .1 Submit to the Consultant Submittals listed in Specifications for review and Acceptance. Submit promptly and in orderly sequence to not cause delay in Work. Failure to submit in ample time is not considered sufficient reason for extension of Contract Time and no claim for extension by reason of such default will be allowed.
- .2 Do not proceed with Work affected by Submittal until review is complete and Acceptance has been provided.
- .3 Present Shop Drawings, Product data, samples and mock-ups in SI Metric units.
- .4 Where items or information is not produced in SI Metric units converted values are acceptable.
- .5 Review Submittals before submission to the Consultant. Stamp Submittals as "Approved by Contractor" prior to submitting to the Consultant. This review represents that necessary requirements have been determined and verified, or will be, and that each Submittal has been checked and coordinated with requirements of Work and Contract Documents and Contractors own quality procedures. Submittals not stamped, signed, dated and identified as to specific Project will be returned without being examined and considered rejected.
- .6 Notify the Consultant, in writing at time of submission, identifying deviations from requirements of Contract Documents stating reasons for deviations.
- .7 Verify site measurements and affected adjacent Work are coordinated.
- .8 Keep one Accepted copy of each Submittal on site.

### **1.04 SHOP DRAWINGS, PRODUCT DATA AND OTHER SUBMITTALS**

- .1 Refer to CCDC 2 GC 3.8 Shop Drawings and Supplementary General Conditions.
- .2 Refer to Specifications for all other required Submittals.
- .3 Submit for review and Acceptance Shop Drawings stamped and signed by professional engineer licensed in Province of Ontario, Canada.
- .4 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

- hr/>
- installed. Indicate cross references to Contract Drawings and Specifications.
- .5 Allow ten (10) Working Days for Consultant review of each Submittal, unless otherwise specified.
  - .6 Adjustments requested on Shop Drawings by the Consultant are not intended to change Contract Price. If adjustments affect value of Work, state such in writing to the Consultant and do not proceed with Work. Such adjustment shall be approved by a Change Directive or Change Order issued by the Owner in accordance with the Contract Documents.
  - .7 Make changes in Shop Drawings as the Consultant may require, consistent with Contract Documents. When resubmitting, notify the Consultant in writing of revisions other than those requested.
  - .8 Accompany Submittals with transmittal letter containing:
    - .1 Date.
    - .2 Project title and number.
    - .3 Contractor's name and address.
    - .4 Identification and quantity of each Shop Drawing, Product data, and sample.
    - .5 Other pertinent data.
  - .9 Submittals to include:
    - .1 Date and revision dates.
    - .2 Project title and number.
    - .3 Name and address of:
      - .1 Subcontractor.
      - .2 Supplier.
      - .3 Manufacturer.
    - .4 Contractor's stamp, signed by Contractor's authorized representative certifying approval of submissions, verification of site measurements and compliance with Contract Documents.
    - .5 Details of appropriate portions of Work as applicable:
      - .1 Fabrication.
      - .2 Layout, showing dimensions, including identified site dimensions and clearances.
      - .3 Setting or erection details.
      - .4 Capacities.
      - .5 Performance characteristics.
      - .6 Standards.
      - .7 Operating weight.
      - .8 Wiring diagrams.
      - .9 Single line and schematic diagrams.

- .10 Material being supplied, all connections, attachments, anchorages and locations of exposed fastenings as applicable.
  - .11 Typical and special installation conditions, including setting or erection details.
  - .12 Relationship to adjacent work.
  - .13 Copy of associated Project warranty.
- .10 After the Consultant review and Acceptance, distribute copies.
- .11 Submit electronic copy of Shop Drawings for requirements requested in Specifications and as the Consultant may reasonably request. Submit electronic copies of Product data sheets or brochures for requirements requested in Specifications and as requested by the Consultant where Shop Drawings will not be prepared due to standardized manufacture of Product.
- .1 Product data: manufacturers' catalogue sheets, MSDS sheets, brochures, literature, performance charts and diagrams used to illustrate standard manufactured products or any other specified information.
  - .2 Delete information not applicable to Project.
  - .3 Supplement standard information to provide details applicable to Project.
  - .4 Cross-reference Product data information to applicable portions of Contract Documents.
- .12 Submit electronic copies of test reports for requirements requested in Specifications and as requested by the Consultant.
- .1 Report signed by authorized official of testing laboratory that material, Product or system identical to material, Product or system to be provided has been tested in accord with specified requirements.
- .13 Submit electronic copies of certificates for requirements requested in Specifications and as requested by the Consultant.
- .1 Statements printed on manufacturer's letterhead and signed by responsible officials of manufacturer of Product, system or material attesting that product, system or material meets Specification requirements.
  - .2 Certificates must be dated after the award of the Contract, complete with the Project name.
- .14 Submit electronic copies of manufacturers' instructions for requirements requested in Specifications and as requested by the Consultant.
- .1 Pre-printed material describing installation of Product, system or material, including special notices and Safety Data Sheets concerning impedances, hazards and safety precautions.
- .15 Submit electronic copies of manufacturer's site reports for requirements requested in Specifications and as requested by the Consultant.
- .1 Material describing installation of Product, system or material, including special notices and Material Safety Data Sheets concerning impedances, hazards and safety precautions.
- .16 Documentation of the testing and verification actions taken by manufacturer's representative to confirm compliance with manufacturer's standards or instructions.



- .17 Submit electronic copies of Operation and Maintenance Data for requirements requested in Specifications and as requested by Owner, after a review of an electronic copy has been completed and Accepted by the Consultant.
  - .1 Submit four (04) hard copies, unless otherwise specified, of reviewed and Accepted Operation and Maintenance Data.
- .18 Delete information not applicable to Project.
- .19 Supplement standard information to provide details applicable to Project.
- .20 If upon review by the Consultant, no major corrections are requested, electronic copies will be returned as Accepted or Accepted with comments (in the case of minor corrections) and fabrication and installation of Work may proceed. Requested minor corrections shall be made in a timely manner. If Shop Drawings are rejected, noted copy will be returned and resubmission of corrected Shop Drawings for review and Acceptance, through same procedure indicated above, must be performed before fabrication and installation of Work may proceed.
- .21 Acceptance of the Shop Drawings does not mean confirmation that the Submittal does not include errors or omissions, defects or deficiencies.

#### **1.05 SAMPLES**

- .1 Submit for review and Acceptance samples in duplicate as requested in respective Specifications. Label samples with origin and intended use.
- .2 Deliver samples prepaid to the Consultant at the address provided during the Pre-Construction Meeting.
- .3 Notify the Consultant in writing at the time of submission of deviations in samples from the requirements of Contract Documents. Deviations may be rejected and the Contractor shall resubmit either a sample compliant with the Contract Documents or an alternative sample with written deviations.
- .4 Where colour, pattern or texture is criterion, submit full range of samples.
- .5 Adjustments made on samples by the Owner or the Consultant are not intended to change Contract Price. If adjustments affect value of Work, state such in writing to the Consultant and do not proceed with Work. Such adjustment shall be approved by a Change Directive or Change Order issued by the Owner.
- .6 Make changes in samples which the Consultant may require, consistent with Contract Documents.
- .7 Reviewed and Accepted samples will become standard of workmanship and material against which installed Work will be verified.

#### **1.06 MOCK-UPS**

- .1 Erect mock-ups in accordance with section 01 43 00 - Quality Assurance.

#### **1.07 PHOTOGRAPHIC DOCUMENTATION**

- .1 Submit electronic colour digital photography in accordance with section 01 32 33 –

Photographic Documentation, Contract Documents, and as directed by the Consultant.

- .2 Provide photographs in the requested format to demonstrate progress and how deficient items identified within the Consultant review and inspection reports have been corrected.

**END OF SECTION**

## 1 GENERAL

### 1.01 REFERENCE STANDARDS

- .1 Canada Labour Code, Part 2, Canada Occupational Safety and Health Regulations
  - .1 R.S.C., 1985, c. L-2
- .2 Province of Ontario
  - .1 Occupational Health and Safety Act and Regulations for Construction Projects, R.S.O. [1990, c.0.1, as amended and O. Reg. 213/91 as amended] - Updated August 8, 2023.
- .3 National Building Code of Canada (NBC):
  - .1 Part 8, Safety Measures at Construction and Demolition Sites.
- .4 The Canadian Electric Code (as amended)
- .5 Canadian Standards Association (CSA) as amended:
  - .1 CSA Z797-2009 Code of Practice for Access Scaffold.
  - .2 CSA S350-M1980 (R2003) Code of Practice for Safety in Demolition of Structures.
  - .3 CSA Z462- Workplace Electrical Safety Standard.
- .6 National Fire Code of Canada 2015 (as amended)
  - .1 Part 5 – Hazardous Processes and Operations and Division B as applicable and required.
- .7 American National Standards Institute (ANSI):
  - .1 ANSI A10.3, Operations – Safety Requirements for Powder-Actuated Fastening Systems.
- .8 Canadian Construction Documents Committee (CCDC)
  - .1 CCDC 2-2020, Stipulated Price Contract.

### 1.02 RELATED REQUIREMENTS

- .1 Section 01 31 19 – Project Meetings
- .2 Section 01 33 00 - Submittal Procedures
- .3 Section 01 35 43 – Fire Safety Requirements
- .4 Section 01 51 00 - Temporary Utilities
- .5 Section 01 56 00 - Temporary Barriers and Enclosures

- .6 ONTC Contractor Subcontractor Policy.
- .7 ONTC Electrical Safety Policy.

### **1.03 ACTION AND INFORMATIONAL SUBMITTALS**

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Submit for Acceptance Project-specific Health and Safety Plan within seven (7) Working Days after Contract award and fifteen (15) Working Days prior to commencement of Work on site. Health and Safety Plan must include:
  - .1 Results of site-specific safety hazard assessment.
  - .2 Results of safety and health risk or hazard analysis for site tasks and operation found in work plan.
  - .3 Emergency Procedures.
- .3 The Consultant's review and Acceptance of Contractor's final Health and Safety plan should not be construed as approval and does not reduce the Contractor's overall responsibility for construction Health and Safety.
- .4 Submit electronic copies of Contractor's authorized representative's work site health and safety inspection reports to the Owner and the Consultant, and Authority Having Jurisdiction (AHJ) when required.
- .5 Submit to the Owner and the Consultant copies of reports or directions issued by health and safety inspectors of the Authority Having Jurisdiction (AHJ).
- .6 Submit to the Owner and the Consultant electronic copies of incident and accident reports.
- .7 Submit to the Consultant WHMIS Safety Data Sheets (SDS) and all other documentation required by Workplace Hazardous Materials Information System (WHMIS) requirements. Include and update the Health and Safety Plan as required.
- .8 Medical Surveillance: where prescribed by legislation, regulation or safety program, submit to the Consultant certification of medical surveillance for site personnel prior to commencement of Work, and submit additional certifications for any new site personnel.
- .9 On-site Contingency and Emergency Response Plan: address standard operating procedures to be implemented during emergency situations.

### **1.04 FILING OF NOTICE**

- .1 File Notice of Project with Provincial authorities prior to beginning of Work.
- .2 Provide copies of all notices to the Consultant.
- .3 Contractor shall agree to install proper site separation and identification in order to maintain time and space at all times throughout life of Project.

## 1.05 SAFETY ASSESSMENT

- .1 Conduct a site-specific hazard assessment based on review of Contract Documents, required Work, and Project site. Identify any known and potential health risks and safety hazards.
- .2 Develop written site-specific Health and Safety Plan based on hazard assessment prior to beginning site Work and continue to implement, maintain, and enforce plan until final demobilization from site. Health and Safety Plan must address project specifications and , include, but not be limited to, the following:
  - .1 Primary requirements:
    - .1 Contractor's and ONTC safety policy.
    - .2 Identification of applicable compliance obligations.
    - .3 Definition of responsibilities for Project safety; include an organization chart for Project with safety responsibilities clearly indicated.
    - .4 General safety rules for Project.
    - .5 Job-specific safe work procedures.
    - .6 Inspection policy and procedures.
    - .7 Incident reporting and investigation policy and procedures.
    - .8 Occupational Health and Safety Committee/Representative procedures.
    - .9 Occupational Health and Safety meetings.
    - .10 Occupational Health and Safety communications and record keeping procedures.
  - .2 Summary of health risks and safety hazards resulting from analysis of hazard assessment, with respect to site tasks and operations which must be performed as part of the Work.
  - .3 List hazardous materials to be brought on site as required by Work.
  - .4 Indicate engineering and administrative control measures to be implemented at the Place of Work for managing identified risks and hazards.
  - .5 Identify personal protective equipment (PPE) to be used by workers.
  - .6 Identify personnel and alternates responsible for site safety and health.
  - .7 Identify personnel training requirements and training plan, including site orientation for new workers.
- .3 Develop the plan in collaboration with all Subcontractors. Ensure that work/activities of Subcontractors are included in the hazard assessment and are reflected in the plan.

- .4 Revise and update Health and Safety Plan as required, and re-submit for Acceptance in accordance with 01 33 00 – Submittal Procedures
- .5 Review and Acceptance: the review and Acceptance of site-specific Health and Safety Plan shall not relieve the Contractor of responsibility for errors or omissions in final site-specific Health and Safety Plan or of responsibility for meeting all requirements of construction and Contract Documents.

#### **1.06 MEETINGS**

- .1 Schedule and administer Health and Safety meeting with the Owner and the Consultant prior to commencement of Work. This meeting shall be included in the Pre-construction Meeting.
- .2 Attend all subsequent Health and Safety meetings called by the Owner or the Consultant.

#### **1.07 REGULATORY REQUIREMENTS**

- .1 Conduct the Work in accordance with Section 01 41 00 - Regulatory Requirements.

#### **1.08 PROJECT/SITE CONDITIONS**

- .1 Work at site may involve contact with:
  - .1 Public.
  - .2 ONTC employees.
  - .3 Other contractors and consultants.
  - .4 Third Party Property Owner.
- .2 The Contractor is solely responsible for all utility detection and clearances prior to starting the Work.
- .3 The Contractor will not rely solely upon the Drawings or other information provided for utility locations.
- .4 Carry out any activities involving asbestos in accordance with applicable Provincial / Federal Regulations.
- .5 Removal and handling of asbestos will be in accordance with applicable Provincial / Federal Regulations.
- .6 Refer to reports in Attachment 1 to the Specifications for further site conditions and assessment reports for any noted hazardous or contaminated materials or substances present at Place of the Work. Contractor should their own assessments prior to commencing Work.

#### **1.09 GENERAL REQUIREMENTS**

- .1 In accordance with 01 56 00 – Temporary Barriers and Enclosures, provide safety barricades and

lights around work site as required to provide a safe working environment for workers and protection for pedestrian and vehicular traffic.

- .2 Ensure that non-authorized persons are not allowed to circulate in designated construction areas of the work site.
  - .1 Provide appropriate means by use of barricades, fences, warning signs, traffic control personnel, and temporary lighting as required.

#### 1.10 RESPONSIBILITY

- .3 Be responsible for health and safety of persons on site, safety of property on site and for protection of persons adjacent to site and environment to extent that they may be affected by conduct of Work.
- .4 Contractor will be responsible and **assume the role of Constructor** as described in the Ontario Occupational Health and Safety Act and Regulations for Construction Projects.
- .5 Comply with and enforce compliance by employees with safety requirements of Contract Documents, applicable federal, provincial, territorial and local statutes, regulations, and ordinances, and with site-specific Health and Safety Plan.
- .6 Provide first aid, hygiene, and medical facilities at the Place of the Work in accordance with requirements of provincial and local governmental occupational health, safety, and workers' compensation statutes, public health guidance publications (where warranted) and Contract Documents.

#### 1.11 COMPLIANCE REQUIREMENTS

- .1 Comply with Ontario Occupational Health and Safety Act, R.S.O. 1990, c. 0.1 and Ontario Regulations for Construction Projects, O. Reg. 213/91.
- .2 Comply with all Federal and Provincial laws relating to Health and Safety including Acts and Regulations as well as Lower Tier Municipality By-Laws.
- .3 Comply with all applicable industry safety standards.
- .4 Comply with legislative requirements for work performed including, but not limited to:
  - .1 Qualifications of workers;
  - .2 Training;
  - .3 Supervision, and;
  - .4 Use of onsite equipment.
- .5 Provide any and all personal protective equipment for Contractor's own workers where prescribed by legislation.

#### 1.12 UNFORSEEN HAZARDS

- .1 Should any unforeseen or peculiar safety-related factor, hazard or condition become evident during performance of the work, immediately stop work and advise Contractor's nominated Health and Safety Coordinator and follow procedures in accordance with Acts and Regulations of Province having jurisdiction and advise the Consultant verbally and in writing.

### **1.13 CONTRACTOR HEALTH AND SAFETY CO-ORDINATOR**

- .1 Employ and assign to Work, competent and authorized representative as Health and Safety Coordinator. Health and Safety Coordinator must:
  - .1 Be responsible for completing Contractor's Health and Safety Training Sessions and ensuring that personnel that do not successfully complete required training are not permitted to enter site to perform Work.
  - .2 Maintain a training record/log of Contractor employee including all Subcontractors, suppliers and other parties retained by the Contractor for the execution of the Work, at the jobsite and electronic copy, available for the Owner and the Consultant review at request.
  - .3 Be responsible for implementing, revising, enforcing daily and monitoring site-specific Contractor's site-specific Health and Safety Plan.
  - .4 Visit each Place of the Work regularly, at least biweekly or as required by health and safety laws and regulations, to ensure Work is being completed in compliance with Contractor's Health and Safety programs and all applicable laws and regulations.
- .2 Contractor's nominated site supervisor may complete some of daily tasks of the Health and Safety Coordinator provided the site supervisor has the proper qualifications to complete those tasks.

### **1.14 POSTING OF DOCUMENTS**

- .1 Ensure applicable items, articles, notices and orders are posted in conspicuous location on site in accordance with Acts and Regulations of Ontario having jurisdiction, and in consultation with the Consultant.
- .2 Post legible versions of the following documents on site:
  - .5 Site Specific Health and Safety Plan.
  - .6 Sequence of work.
  - .7 Emergency procedures.
  - .8 Site drawing showing Project layout, locations of the first-aid station, marshalling stations, and emergency transportation provisions.
  - .9 Notice of Project.
  - .10 Site plans.
  - .11 Notice as to where a copy of the Workers' Compensation Act and Regulations is available



on the work site for review by employees and workers.

- .12 Workplace Hazardous Materials Information System (WHMIS) documents.
- .13 WHMIS Safety Data Sheets (SDS).
- .14 List of names of Joint Health and Safety Committee members, or Health and Safety Representative, as applicable.
- .15 Others as required.

#### **1.15 CORRECTION OF NON-COMPLIANCE**

- .1 Immediately address health and safety non-compliance issues identified by Authority Having Jurisdiction (AHJ), the Consultant or by Owner.
- .2 Provide the Consultant with written report of action taken to correct non-compliance of health and safety issues identified.
- .3 The Owner or the Consultant may stop Work if non-compliance of health and safety regulations is not corrected. The Contractor/Subcontractors will be responsible for any costs arising from such a "stop work order".

#### **1.16 BLASTING**

- .1 Blasting or other use of explosives is not permitted without prior receipt of written instruction by the Owner.

#### **1.17 POWDER ACTUATED DEVICES**

- .1 Use powder-actuated devices only after receipt of written permission from Owner.

#### **1.18 ELECTRICAL SAFETY REQUIREMENTS**

- .1 Comply with authorities and ensure that, when installing new facilities or modifying existing facilities, all electrical personnel are completely familiar with existing and new electrical circuits and equipment and their operation.
- .2 Before undertaking any Work, coordinate required energizing and de-energizing of new and existing circuits with the Owner.
- .3 Maintain electrical safety procedures and take necessary precautions to ensure safety of all personnel working under this Contract, as well as safety of other personnel on site.

#### **1.19 ELECTRICAL LOCKOUT**

- .1 Develop, implement and enforce use of established procedures to provide electrical lockout and to ensure the health and safety of workers for every event where work must be done on any electrical circuit or facility.
- .2 Prepare the lockout procedures in writing, listing step-by-step processes to be followed by workers, including how to prepare and issue the request/authorization form. Have procedures available for

review upon request by the Owner or the Consultant.

- .3 Keep the documents and lockout tags at the site and list in a logbook for the full duration of the Contract. Upon request, make such data available for viewing by the Owner, the Consultant or by any authorized safety representative.

#### **1.20 WORK STOPPAGE**

- .1 Give precedence to safety and health of public and site personnel and protection of environment over cost and schedule considerations for Work.

**END OF SECTION**

## 1 GENERAL

### 1.01 REFERENCE STANDARDS

- .1 National Research Council of Canada (NRC):
  - 1. National Building Code of Canada (NBC).
  - 2. National Fire Code of Canada (NFC).
- .2 National Fire Protection Association (NFPA):
  - 1. NFPA 51B-[19], Standard for Fire Prevention During Welding, Cutting, and Other Hot Work.
- .3 Ontario Fire Code.
- .4 Ontario Occupational Health and Safety Act R.S.O 1990
- .5 O.Reg 213/91 Construction Projects
- .6 Canada Labour Code R.S.C., 1985 c L-2
- .7 Canada Occupational Health and Safety Regulations SOR/86-304
- .8 Canadian Construction Documents Committee (CCDC)
  - 1. CCDC 2-2020, Stipulated Price Contract.

### 1.02 RELATED REQUIREMENTS

- .1 Section 01 35 29.06 – Health and Safety Procedures
- .2 Section 01 33 00 – Submittal Procedures
- .3 Section 01 74 19 – Waste Management and Disposal
- .4 ONTC Contractor Subcontractor Policy
- .5 ONTC HOT WORK Program

### 1.03 CONSTRUCTION FIRE SAFETY

- .1 Contractor is responsible for construction fire safety in accordance with national and provincial codes, laws and regulations.

### 1.04 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit in accordance with Section 01 33 00 – Submittal Procedures.
- .2 Submit fire safety plan for Acceptance before construction commences.

### 1.05 REPORTING FIRES

- .1 Be aware at all times of nearest fire alarm pull station location, nearest telephone, and

emergency phone number.

- .2 Report fire incidents to Fire Department immediately in the following sequence:
  - .1 Activate nearest fire alarm pull station, if any.
  - .2 Telephone the Fire Department then Owner
    - .1 Telephone:911.
    - .2 Contact Owner at ONTC RTC Hotline # 1-800-558-4129.
- .3 Person activating fire alarm pull station to remain at main site entrance and direct Fire Department personnel to location of fire.
- .4 When reporting a fire by telephone, give location of fire, building name or number, and be prepared to give basic directions (e.g., northeast corner of base compound, visual reference points).
- .5 Promptly inform Owner and Consultant of fire incidents at Place of Work, regardless of size.

#### 1.06 FIRE SAFETY PLAN

- .1 Prepare a fire safety plan in cooperation with the local fire department and other applicable regulatory authorities for each Place of Work before beginning Work on site.
- .2 Submit fire safety plan to the Consultant for Acceptance who may submit to local fire department for their review.
- .3 Limit scope of fire safety plan to the Place of the Work only. Existing fire safety plans covering other existing buildings are not the responsibility of the Contractor.
- .4 Prepare fire safety plan in conformance with NFC. Include:
  - .1 Emergency procedures in case of fire, including:
    - .1 sounding fire alarm
    - .2 notifying fire department
    - .3 instructing occupants on procedures to follow when fire alarm sounds.
    - .4 evacuating occupants, including special provisions for persons requiring assistance
    - .5 confining, controlling, and extinguishing the fire.
  - .2 Appointment and organization of designated supervisory staff to carry out fire safety duties.
  - .3 Training of supervisory staff and other occupants in their responsibilities for fire safety
  - .4 Documents, including diagrams, showing type, location, and operation of building fire emergency systems.
  - .5 Holding of fire drills
  - .6 Control of fire hazards in the building
  - .7 Inspection and maintenance of building facilities provided for the safety of occupants.

- .5 Post fire safety plan at each entrance to Place of the Work or near each Place of the Work's health and safety board.
- .6 Review fire safety plan a maximum of every three (03) months to ensure it takes into account changes in the use and other characteristics of the building or site. Revise fire safety plan when it can be improved.

### 1.07 FIRE PROTECTION SYSTEM IMPAIRMENT

- .1 Maintain existing fire protection systems in an operational state at all times during construction.
- .2 Use of fire hydrants, standpipes, or hose systems for purposes other than firefighting is prohibited.
- .3 Existing fire protection and alarm systems will not be obstructed, shut off, disabled, or left inactive at end of each Working Day or shift without written authorization from the Owner.
- .4 Submit a written request to the Owner and the Consultant for approval ten (10) Working Days in advance of planned interruption of services. Submit written notification for operation including shutting down active fire protection system, including water supply, fire suppression, fire detection, and life safety systems.
- .5 Where an existing fire protection system that provides fire alarm monitoring becomes impaired in an existing building, provide a fire watch as directed by the Consultant.
- .6 Where systems are affected or impaired during the Work, conduct Work on fire protection system in accordance with NFC.

### 1.08 TEMPORARY PORTABLE FIRE EXTINGUISHERS

- .1 Provide portable extinguishers, or as otherwise directed by Fire Department.
- .2 Provide supplemental portable extinguishers to the following areas or as otherwise directed by Fire Department :
  - .1 Adjacent to hot works
  - .2 Areas where combustibles materials are stored
  - .3 Adjacent to areas where flammable liquids or gases are stored or handled
  - .4 Near or on internal combustion engines
  - .5 Adjacent to temporary oil fired or gas fired equipment
  - .6 Adjacent to bitumen heating equipment
  - .7 Adjacent to each roof installation or repair work area
- .3 Provide portable extinguishers classified and rated as 10-A:80B:C, minimum 20 pounds unless otherwise directed by the Fire Department.
- .4 Provide dry chemical type extinguishers unless otherwise required by hazard being protected.
- .5 Provide a sufficient number of portable extinguishers as per codes and laws requirements.
- .6 Inspect and maintain extinguishers in accordance with NFC.

### 1.09 ACCESS FOR FIRE FIGHTING

- .1 Provide and maintain access for firefighting operations in accordance with NFC.
- .2 Submit written request to the Owner and the Consultant for approval a minimum of ten (10) Working Days before operation of activities that may cause problems that might impede fire department equipment access and personnel response, including but not limited to:
  - .1 violation of minimum horizontal and overhead clearances
  - .2 erecting of barricades and digging of trenches.

Note: Access routes are intended for the movement of fire department vehicles around buildings. Access aisles and access paths are intended for the movement of fire department personnel inside a building.

- .3 Maintain a minimum 6.0-m clear horizontal width for access routes, or as otherwise directed by the Consultant.
- .4 Maintain a minimum 5.0-m vertical clearance for access routes, or as otherwise directed by the Consultant.

### 1.10 SMOKING RESTRICTIONS

- .1 Smoking is prohibited in buildings, including buildings under construction.
- .2 Obey posted signs and restrict smoking to only existing designated smoking areas. Obey posted smoking restrictions near existing buildings.
- .3 Provide a temporary approved non-combustible receptacle at each designated smoking area in accordance with the Fire Safety Plan.

### 1.11 WASTE MANAGEMENT

- .1 Manage waste in accordance with Section 01 74 19 – Waste Management and Disposal, and as follows:
  - .1 Minimize waste materials.
  - .2 Do not burn waste materials.
  - .3 Remove waste from Place of Work at end of each Working Day or shift, or more frequently when directed by Fire Department.
  - .4 Storage:
    - .1 Store oily waste in approved receptacles to ensure maximum cleanliness and safety.
    - .2 Deposit greasy or oily rags and materials subject to spontaneous combustion in approved receptacles. Remove at end of each Working Day.
  - .5 Provide temporary waste bins no closer than 3.0 m to buildings.

### 1.12 FLAMMABLE AND COMBUSTIBLE LIQUIDS

- .1 Handle, store, and use flammable and combustible liquids in accordance with NFC or as otherwise directed by the Fire Department.
- .2 Store flammable and combustible liquids such as gasoline, kerosene, and naphtha in quantities not exceeding 45 litres. Store in approved safety cans bearing Underwriters' Laboratory of Canada or Factory Mutual approved certification mark. Obtain written authorization from Owner for storage of quantities of flammable and combustible liquids exceeding 45 litres.
- .3 Transfer of flammable or combustible liquids within buildings or on jetties is prohibited.
- .4 Transfer of flammable or combustible liquids in vicinity of open flames or any type of heat-producing device is prohibited.
- .5 Use of flammable liquids having a flash point below 38 degrees C such as naphtha or gasoline as solvents or cleaning agents is prohibited.
- .6 Storing flammable and combustible waste liquids on site is prohibited. Remove daily or more frequently as directed by Fire Department.

### 1.13 QUESTIONS OR CLARIFICATION

- .1 Direct questions and requests for clarification on Fire Safety to the Consultant.
- .2 The Owner or the Consultant will obtain clarifications from Fire Department. Do not contact Fire Department directly for notification, authorization, or any requests unless situation constitutes an immediate emergency.

### 1.14 FIRE INSPECTION

- .1 Coordinate site inspections by Fire Department through the Consultant.
- .2 Allow Fire Fighter unrestricted access to Place of Work.
- .3 Cooperate with Fire Department during routine fire safety inspection of Place of work.
- .4 Immediately remedy unsafe fire situations observed by Fire Department.

**END OF SECTION**

## 1 GENERAL

### 1.01 SUMMARY

- .1 This Section references laws, bylaws, ordinances, rules, regulations, codes, orders of Authority Having Jurisdiction (AHJ), and other legally enforceable requirements applicable to the Work and that are or become enforced during performance of the Work.

### 1.02 REFERENCE STANDARDS AND REFERENCE DOCUMENTS

- .1 If specified referenced standards do not indicate an edition or version, the latest edition or revision issued by the publisher at the time of RFP closing shall apply, except as follows:
  - .1 If a particular edition or revision date of a specified standard is referenced in an applicable code or other regulatory requirement, the edition or version in the regulatory reference shall apply.
- .2 The specified reference standards establish minimum requirements. If Contract Documents indicate requirements that conflict with a reference standard, the more stringent requirements shall apply.
- .3 If multiple reference standards are specified and the standards establish different requirements, the most stringent requirement shall apply.
- .4 In case of discrepancy or uncertainties, refer to the Consultant for interpretation or clarification.
- .5 Canadian Construction Documents Committee (CCDC)
  - .1 CCDC 2-2020, Stipulated Price Contract.

### 1.03 CODES

- .1 Building Code: Perform Work in accordance with the Ontario Building Code including amendments up to the time of RFP closing and other codes of provincial or local application.
- .2 Fire Code: Perform Work in accordance with the Ontario Fire Code 2020 including amendments up to the time of RFP closing and other codes of provincial or local application.
- .3 If there is a conflict or discrepancy between codes, the most stringent requirements shall apply.
- .4 Specific design and performance requirements listed in Specifications and indicated on Drawings may exceed minimum requirements established by referenced Codes; these requirements will govern over the minimum requirements listed in the referenced Codes.

### 1.04 FEES

- .1 Except as otherwise specified, Contractor shall apply for, obtain, and pay fees associated with permits, licenses, certificates, and approvals required by regulatory requirements and Contract Documents, based on General Conditions of Contract and the following:



- .1 Regulatory requirements and fees in force at the time of RFP closing, and
- .2 A change in regulatory requirements or fees scheduled to become effective after the time of RFP closing and of which public notice has been given before the time of RFP closing.

## **2 PRODUCTS**

### **2.01 EASEMENTS AND NOTICES**

- .1 Owner will obtain permanent easements and rights of servitude that may be required for performance of the Work.
- .2 Contractor shall give notices required by regulatory requirements.

### **2.02 PERMIT REQUIREMENTS**

- .1 Construction Related Permits:
  - .1 If required, MTO Building and Land Use Permits will be obtained by the Owner.
  - .2 Obtain and pay for all other required Certificates, Licenses and other permits required by regulatory municipal, provincial or federal authorities to complete the Work.
  - .3 Contractor will require that specific Subcontractor[s] obtain and pay for permits required by authorities having jurisdiction (AHJ), where their work is affected by work requiring permits.
  - .4 Contractor shall display permits in a conspicuous location at the Place of the Work.
- .2 Occupancy Permits:
  - .1 Contractor shall apply for obtain and pay for any required permits and or certificates where required by AHJ.
  - .2 Contractor shall correct deficiencies in accordance with the Consultant's instruction. If a deficiency is not corrected, the Owner reserves the right to make correction and charge Contractor for costs incurred.
  - .3 Contractor shall turn all permits and certificates over to Owner.

**END OF SECTION**

## **1 GENERAL**

### **1.01 REFERENCE STANDARDS**

- .1 Canadian Construction Documents Committee (CCDC)
  - .1 CCDC 2-2020, Stipulated Price Contract.
- .2 ASTM International (ASTM):
  - .1 ASTM E329-[20]Standard Specification for Agencies Engaged in Construction Inspection, Testing, or Special Inspection
- .3 International Organization for Standardization (ISO):
  - .1 ISO 9001: [2015], Quality Management Systems – Requirements

### **1.02 SUMMARY**

- .1 This section describes administrative and procedural requirements for proactive Contractor activities to assure the quality of construction before and during execution of the Work.

### **1.03 RELATED REQUIREMENTS**

- .1 Section 01 33 00 – Submittal Procedures.
- .2 Section 01 45 00 – Quality Control

### **1.04 ADMINISTRATIVE REQUIREMENTS**

- .1 Contractor is responsible for self-performed testing and inspections and submittal of test reports to the Consultant.
- .2 The Owner may employ and pay for quality audit services performed through third-party observation and testing to validate the Contractor's performance of the Work and perform whole Work testing at completion of Project.
- .3 Contractor to provide a Quality management system that establishes a standardized approach to managing quality of materials and workmanship during the execution of Work in accordance with ISO 9001. The quality management system shall consist of plans, procedures, and organization necessary to produce complete the Work in compliance with the Contract Document requirements.

### **1.05 ACTION AND INFORMATION SUBMITTALS**

- .1 Submit in accordance with Section 01 33 00 – Submittal Procedures.
- .2 Submit a Quality Management Plan to the Consultant for review and Acceptance prior to Preconstruction meeting.

- .1 The plan shall identify personnel, procedures, control, instructions, test, records, and forms to be used. The Owner will consider an interim plan for the first twenty (20) Working Days of operation. The Contractor may begin mobilization during the interim period.
- .2 The Work will be permitted to begin only after Acceptance of the Quality Management Plan or Acceptance of an interim plan applicable to the portion of the Work to be started.
- .3 The Quality Management Plan shall include, as a minimum, the following to cover all Work both at the Place of the Work, and in off-site locations (such as manufacturing facilities), including Work by Subcontractors, fabricators, suppliers, and purchasing agents:
  - .1 A description of the quality control organization, including a chart showing lines of authority and acknowledgment that the quality control staff shall implement the three-phase control system for all aspects of the work specified. The staff shall include the person responsible for quality who shall report to the Contractor's project manager.
  - .2 The name, qualifications (in resume format), duties, responsibilities, and authorities of each person assigned a quality control function.
  - .3 A copy of the letter to the person responsible for quality signed by an authorized official of the firm which describes the responsibilities and delegates sufficient authorities to adequately perform the functions of person responsible for quality, including authority to stop work that is not in compliance with the Contract Documents. The person responsible for quality shall issue letters of direction to all other various quality control representatives outlining duties, authorities, and responsibilities. Copies of these letters will also be supplied to the Consultant.
  - .4 Procedures for scheduling, reviewing, certifying, and managing Submittals, including those of Subcontractors, offsite fabricators, suppliers, and purchasing agents. These procedures shall be in accordance with the Contract Documents.
  - .5 Control, verification, and acceptance testing procedures for each specific test to include the test name, specification paragraph requiring test, portion of the Work to be tested, test frequency, and person responsible for each test.
  - .6 Procedures for tracking preparatory, initial, and follow-up control phases and control, verification, and acceptance tests, including documentation.
  - .7 Procedures for tracking defects and deficiencies from identification through Acceptable corrective action. These procedures will establish verification that identified deficiencies have been corrected.
  - .8 Reporting procedures, including proposed reporting formats.
  - .9 A list of the definable features of Work. A definable portion of the Work is a task which is separate and distinct from other tasks and has separate control requirements. This list will be agreed upon with the Consultant during a coordination meeting.

- .10 Acceptance of the Contractor's Quality Management Plan is required prior to the start of the Work. Acceptance is conditional and will be predicated on satisfactory performance during the Work.
- .11 The Owner reserves the right to require the Contractor to make changes in its Quality Management Plan and operations, as necessary, to obtain the quality specified.
- .12 Refer to the Contract Documents for additional requirements.
- .4 Submit a detailed testing and inspections schedule for Acceptance to the Consultant in accordance with the Contractor's Quality Management Plan.
- .5 Submit certificates for Products, process and system for Acceptance by the Consultant.
- .6 Submit formal testing and inspections reports per ASTM E329 and as indicated in Specifications to the Consultant in accordance with the Contract Documents.
- .7 Submit one digital copy of each Quality Assurance inspection and test report to the Consultant, except where Specifications indicate otherwise.
- .8 Submit mill test certificates, as required, in technical Specifications and as indicated on Drawings.

#### **1.06 Quality Control Organization:**

- .1 The requirements for the quality control organization are a person responsible for quality and sufficient number of additional qualified personnel to ensure compliance to Contract Documents.
- .2 Provide a quality control organization which shall be available at all times during progress of the Work and with complete authority to take any action necessary to ensure compliance with the Contract Documents.

#### **1.07 QUALIFICATIONS**

- .1 Manufacturers' Qualifications:
  - .1 specializes in manufacturing the Products specified in the Specifications.
  - .2 minimum three (03) years documented experience with a record of successful performance.
- .2 Suppliers' Qualifications:
  - .1 authorized to distribute manufacturer's Products
  - .2 has capacity to supply required Products without delaying the Project
- .3 Fabricators' Qualifications:
  - .1 experienced in producing Products required for this Project
  - .2 successful record of in-service performance
  - .3 sufficient production capacity to fabricate required Products without delaying the

Project

- .4 Installer Qualifications:
  - .1 firm or individual experienced in design and installation, application, and erection of materials to the extent required for this Project
  - .2 successful record of in-service performance
- .5 Testing and Inspecting Agency Qualifications:
  - .1 accredited organizations by the Standards Council of Canada for testing and inspection
  - .2 capable of reliably performing testing of building products and inspections of construction activities in accordance with ISO 9001 and ASTM E329.
- .6 Licensed Professionals Qualifications:
  - .1 individual registered or licensed to practice their respective design profession as defined by the statutory requirements of the professional registration laws of the province, state or jurisdiction in which the Project is to be constructed.

## 1.08 CERTIFICATIONS

- .1 Ensure that certification of Products, processes, and systems includes physical and examination testing as specified in ASTM E329 SO 9001 to confirm compliance with Specifications requirements.

## 1.09 COORDINATION

- .1 Coordinate and schedule tests and inspections with accredited testing, inspection agencies as indicated in Contract Documents and in accordance with ASTM E329 requirements.
- .2 Coordinate Contractor's Quality Management system with the Consultant for reporting, scheduling access and incidental labor required by Quality Auditor's reports if required.
- .3 When attendance is required, notify the Consultant in advance before proceeding with tests and inspections, and additional tests and inspections as may be reasonably requested by the Consultant.
- .4 Coordinate testing and inspections schedule with Subcontractor, testing agencies, and other affected parties.

## 1.10 SITE SAMPLES

- .1 Testing agency is responsible for obtaining representative samples of those materials required to be tested and evaluated in accordance with the Contractual Documents.
- .2 Ensure testing agency performs sampling in accordance with ASTM E329.
  - .1 When sampling collection is required by testing agency, ensure proper protection, handling and storing of samples.

- .3 Testing agency to document procedures and appropriate techniques to select samples.
- .4 Record details of environmental conditions present during the sampling, such as rain or freezing weather that may affect testing of sample or interpretation of test results.

**END OF SECTION**

## **1 GENERAL**

### **1.01 REFERENCE STANDARDS**

1. Canadian Construction Documents Committee (CCDC)
  - .1 CCDC 2-2020, Stipulated Price Contract.

### **1.02 SUMMARY**

- .1 This Section describes administrative and procedural requirements for reactive activities to verify that completed Work conforms to Contract Documents requirements.
- .2 Having inspection and testing agencies employed by Contractor or the Owner does not relieve the Contractor of their responsibility to perform Work in accordance with Contract Documents.

### **1.03 ADMINISTRATIVE REQUIREMENTS**

- .1 Allow and coordinate access to Work on site, manufacturing off site, and fabrication off site with inspection and testing agencies, the Consultant and the Owner.
- .2 Retain and pay for inspection and testing that are designated for Contractor's own Quality Management Plan, and when testing and inspection are required by Authorities Having Jurisdiction (AHJ).
- .3 Provide advanced notice, minimum five (05) Working Days to the Consultant and to each inspection/testing agency for inspection and testing required by Contract Documents or by (AHJ).
- .4 Where Owner cooperation, input or participation is required to fully perform inspection and test activities, particularly in relation to the correct operation of Products Supplied by Other and installed by the Contractor, provide a minimum ten (10) Working Days' notice to the Consultant.
- .5 In advance of each test, notify appropriate agency and the Consultant in the order that attendance arrangements can be made.
- .6 Employment of inspection and testing agencies does not relax or remove responsibility to perform Work in accordance with Contract Documents.

### **1.04 ACTION AND INFORMATIONAL SUBMITTALS**

- .1 Submit in accordance with Section 01 33 00 – Submittal Procedures.
- .2 Submit schedule of testing and inspection activities to the Consultant, applicable Subcontractors, testing agencies, Owner, and other affected parties. Include the following:
  - .1 List each testing and inspection agency

- .2 Identify types of tests and inspections for each agency, and cross reference to applicable specification section number-title in Contract Documents
- .3 Description of test and inspection
- .4 Identify applicable reference standard
- .5 Identify test and inspection method
- .6 Indicate number of each test and inspection required
- .3 Submit one digital copy of each quality assurance inspection and test report to the Consultant, except where a technical Specification section indicates otherwise.
- .4 Submit reports for inspection and testing required by Contract Documents or by AHJ and performed by Contractor-retained inspection and testing agencies within ten (10) Working Days after inspection or test is completed, except where a technical Specification section indicates a different time period.
- .5 Submit one digital copy of each quality control inspection and test report to the Consultant, except where a technical Specification section indicates otherwise. Maintain copies available at Place of the Work in accordance with Section 01 78 00 - Closeout Submittals.
- .6 Deliver copies of quality control reports to Subcontractor of Work being inspected or tested.

#### **1.05 SITE QUALITY CONTROL PROCEDURES**

- .1 Provide labor, Construction Equipment, and temporary facilities to obtain and handle test samples and materials on site. Arrange for sufficient space to store and cure test samples.
- .2 Deliver samples and materials required for testing, as requested in technical Specification sections. Submit with reasonable promptness and in an orderly sequence to avoid delays in Work.
- .3 Before Project start, photograph Project site and existing conditions in accordance with Section 01 33 00 – Submittal Procedures.

#### **1.06 TESTING AND INSPECTION SERVICES**

- .1 The Owner may retain and pay for independent inspection and testing agencies to inspect, test, or perform other quality control reviews of parts of the Work, in addition to those carried by the Contractor.
- .2 Consultant may order any part of the Work to be reviewed or inspected if the Work is suspected to be not in accordance with Contract Documents. If, upon review such Work is found not in accordance with Contract Documents, the Contractor shall correct such Work and pay cost of additional review and correction.
- .3 Provide equipment required for executing inspection and testing by appointed agencies.
- .4 If defects are revealed during inspection and/or testing, appointed agency will request additional inspection and testing to ascertain full degree of defect. Correct defect and irregularities as advised



by Consultant at no cost to Owner. Pay costs for retesting and re-inspection.

.5 Quality control testing and inspection reports to include the following:

- .1 Project name and number
- .2 Testing/Inspection agency's name, address, telephone number, and website
- .3 Date of issuing report
- .4 Dates and locations of tests, inspections, or samples
- .5 Description of the Work and test and inspection method
- .6 Numbers and titles of associated Specification sections
- .7 Test and inspection data and interpretation of test results (e.g., pass or fail)
- .8 Ambient conditions at time of test, inspection, or sampling
- .9 Recommendations on re-testing and re-inspecting, if applicable.

**END OF SECTION**

## **1 GENERAL**

### **1.01 REFERENCE STANDARDS**

- .1 Canadian Construction Documents Committee (CCDC)
  - .1 CCDC 2-2020, Stipulated Price Contract.

### **1.02 ACTION AND INFORMATIONAL SUBMITTALS**

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.

### **1.03 TEMPORARY ELECTRICITY**

- .1 When Electrical power is not available at site, make all necessary arrangements and pay for all costs for a temporary electrical service of sufficient capacity to supply temporary lighting, operation of power tools, cranes and equipment for all construction, implementation, and inspection and testing purposes. Supply and install necessary temporary cables and other electrical equipment and make all temporary connections as required. If generators are used, they should be of the kind that minimize noise impact to surrounding areas and residents.
- .2 Arrange for connection with appropriate utility company. Pay costs for installation, maintenance, and removal.
- .3 When Electrical power supply is available at site and supply is metered to ONTC, subject to agreement of the Consultant, it may be provided for construction use at no cost. Contractor shall ensure their use shall not cause the overall use to exceed supply voltage and capacity. Connect to existing power supply in accordance with Canadian Electrical Code.
- .4 Electrical power systems installed under this Contract may be used for construction requirements only with prior approval from the Consultant if warranties are not affected. Repair damage to electrical system caused by the Contractor's use under this Contract.
- .5 Temporary power distribution wiring shall comply with Ontario Electrical Safety Code. Obtain inspection certificates for temporary electrical work.

### **1.04 TEMPORARY FIRE PROTECTION**

- .1 Provide and maintain temporary fire protection equipment during performance of Work in accordance with Section 01 35 35 – Fire Safety Protection.

### **1.05 TEMPORARY HEATING COOLING AND VENTILATING**

- .1 Provide temporary heating as required during construction period, including attendance, maintenance and fuel.
- .2 Construction heaters used inside building must be vented to outside or be of the flameless (vent free) type. Solid fuel salamanders are not permitted.

- .3 Provide temporary heat and ventilation in enclosed areas as required to:
  - .1 Facilitate progress of Work.
  - .2 Protect Work and Products against dampness and cold.
  - .3 Prevent moisture and condensation on surfaces.
  - .4 Provide ambient temperatures and humidity levels for storage, installation, and curing of materials.
  - .5 Provide adequate ventilation to meet health regulations for safe working environment.
- .4 Maintain minimum temperatures recommended by applicable codes and regulations in areas where construction is in progress.
- .5 Ventilating:
  - .1 Prevent accumulations of dust, fumes, mists, vapours, or gases in occupied areas during construction.
  - .2 Provide local exhaust ventilation to prevent harmful accumulation of hazardous substances into atmosphere of occupied areas.
  - .3 Dispose of exhaust materials in a manner that will not result in harmful exposure to persons.
  - .4 Ventilate storage spaces containing hazardous or volatile materials.
  - .5 Ventilate temporary sanitary facilities.
  - .6 Continue operating ventilation and exhaust system after cessation of work process until complete removal of harmful contaminants is ensured.
- .6 Permanent heating, ventilating, and air conditioning system of building must not be used.

#### 1.06 TEMPORARY LIGHTING

- .1 Provide and maintain temporary lighting throughout Project. Ensure level of illumination on all work area is suitable and will meet or exceed the requirement of Health and Safety regulations and as per applicable codes and standards.
- .2 Electrical lighting systems installed under this Contract may be used for construction requirements only with prior approval of the Consultant if warranties are not affected.
  - .1 Repair damage to lighting systems caused by use under this Contract.
  - .2 Replace lamps that have been used for more than [3] months.
- .3 Temporary lighting installed under this Contract shall not cause light nuisance and or adversely impact ONTC Operations and surrounding areas and properties. Make adjustments to the satisfaction of Owner.

#### 1.07 TEMPORARY SANITARY FACILITIES

- .1 Provide sanitary facilities in accordance with Occupational Health and Safety requirements in the

Place of the Work. Use of Owner's existing sanitary facilities or new sanitary facilities is not allowed.

**1.08 TEMPORARY TELECOMMUNICATIONS**

- .1 If required, provide and pay for temporary telephone, data hook up equipment necessary for own use and use of the Consultant.

**1.09 TEMPORARY WATER**

- .1 When available, Owner will provide water for construction use. Otherwise, the Contractor will be responsible for the water supply and all associated costs.
- .2 Arrange for connection with appropriate utility company and pay costs for installation, maintenance, and removal as required.

**2.01 INSTALLATION AND REMOVAL**

- .1 Provide temporary utilities to execute Work expeditiously.
- .2 Remove all such temporary utilities from site after use.
- .3 Be responsible for the careful and reasonable use of Owner-supplied utilities. Make good and remediate any damage caused by use under this contract.
- .4 Pay costs for installation, maintenance and removal.

**END OF SECTION**

## **1 GENERAL**

### **1.01 REFERENCE STANDARDS**

- .1 Canadian Construction Documents Committee (CCDC)
  - .1 CCDC 2-2020, Stipulated Price Contract.
- .2 Canadian General Standards Board (CGSB)
  - .1 CAN/CGSB 1.189-[00], Exterior Alkyd Primer for Wood.
  - .2 CGSB 1.59-[97], Alkyd Exterior Gloss Enamel.
- .3 CSA Group (CSA)
  - .1 CSA-A23.1/A23.2-[04], Concrete Materials and Methods of Concrete Construction/Methods of Test and Standard Practices for Concrete.
  - .2 CSA-0121-[M1978(R2003)], Douglas Fir Plywood.
  - .3 CAN/CSA-S269.2-[M1987(R2003)], Access Scaffolding for Construction Purposes.
  - .4 CAN/CSA-Z321-[96(R2001)], Signs and Symbols for the Occupational Environment.
- .4 U.S. Environmental Protection Agency (EPA) / Office of Water
  - .1 EPA 832R92005, Storm Water Management for Construction Activities: Developing Pollution Prevention Plans and Best Management Practices.

### **1.02 ACTION AND INFORMATIONAL SUBMITTALS**

- .1 Provide Submittals in accordance with Section 01 33 00 - Submittal Procedures.

### **1.03 INSTALLATION AND REMOVAL**

- .1 For each Place of the Work prepare site plan indicating proposed location and dimensions of the Construction Area to be fenced and used by Contractor, number of trailers if required, area for parking vehicles, avenues of ingress/egress to fenced area and details of fence installation. Construction Area shall be within the area indicated in the Contract Drawings. Submit site plan to Consultant for review and Acceptance.
- .2 Indicate use of supplemental or other staging areas.
- .3 Provide construction facilities in order to execute Work expeditiously.
- .4 After use remove from site all such work installed under this section 01 52 00 – Construction Facilities. Reinstate area to same or better state before start of Project.

### **1.04 HOISTING**

- .1 Provide, operate and maintain hoists, cranes required for moving of workers, materials and equipment. Make financial arrangements with Subcontractors for their use of hoists.
- .2 Hoists and cranes to be operated by qualified operator.

### 1.05 ELEVATORS

- .1 When applicable, permanent elevators are not to be used by Contractor, Subcontractor or supplier personnel or for transporting of materials unless approved by the Owner. Co-ordinate use with the Owner if use is permitted.
- .2 If use of elevators is approved by the Owner, provide protective coverings for finish surfaces of walls, floors and entrances.

### 1.06 SITE STORAGE/LOADING

- .1 Confine Work and operations of employees to the Construction Area. Do not unreasonably encumber premises with Products.
- .2 Do not load or permit to load any part of Work with weight or force that will endanger Work. Be solely responsible and liable for damages resulting from violation of this requirement.
- .3 Products shall be stored only in areas designated or approved by the Consultant and shall not be left on the ground or in undesignated areas.
- .4 Site storage and loading requirements to be in accordance with Ontario Occupational Health and Safety Act and Regulations for Construction Projects.

### 1.07 CONSTRUCTION PARKING

- .1 Parking may be permitted on site provided it does not disrupt performance of Work. Arrange with the Consultant and obtain approval before site usage. Show location of agreed parking on site plan.
- .2 Parking within the Construction Area shall be managed by the Contractor as long as it does not affect work performance or Safety.
- .3 Provide and maintain adequate access to Project sites.
- .4 Parking arrangements shall be in accordance with location specific restrictions contained in section 011400 – Work Restrictions.

### 1.08 TEMPORARY SECURITY

- .1 Contractor is responsible for the security of the Place of the Work and any off-site other locations used by the Contractor for the execution of the Contract such as off-site temporary storage spaces.
  - .1 Temporary Site Security:
    1. Site Fencing: Before beginning excavation and before construction activities begin, provide temporary site enclosure fencing with lockable gates to prevent unauthorized access.
    2. Extent of Fencing: To enclose entire Project site or a portion sufficient to accommodate construction activities as indicated on Drawings.
    3. Distribute gate keys to authorized personnel only. Supply Consultant and Owner with one set of keys each.
  - .2 Temporary Building Security:

1. Install temporary enclosure around partially completed areas of construction. Provide lockable entrances to prevent unauthorized access, vandalism, theft, and similar security violations.
2. Distribute building entrance keys to authorized personnel only. Supply Owner and Consultant with one set of keys each.

#### **1.09 OFFICES**

- .1 Provide one field office for the duration of the Work. The field office can be located within the Contractor Construction trailer and shall have proper heating, lighting, and ventilation and be of sufficient size to accommodate site meetings.
- .2 Provide one workspace in field office for use by the Owner and the Consultant.
- .3 Provide marked and fully stocked first-aid case in a readily available location.
- .4 Subcontractors to provide their own offices as necessary. Arrange with the Consultant location of these offices.
- .5 Maintain offices in a clean condition.

#### **1.10 EQUIPMENT, TOOL AND MATERIALS STORAGE**

- .1 Provide and maintain, in clean and orderly condition, lockable weatherproof storage space (seacans, sheds, etc.) for storage of tools, equipment and materials.
- .2 Locate materials not required to be stored in weatherproof storage space on site in manner to cause least interference with work activities.
- .3 Ensure all equipment, tools and materials (including salvaged material) are stored clear of the rail Right of Way in a position where it they will not interfere with train operations and employee movements. Ensure all equipment, tools and materials and are secured in such a manner that they cannot fall or be placed foul of the rail line.

#### **1.11 SANITARY FACILITIES**

- .1 Provide sanitary facilities for workforce in accordance with governing regulations and ordinances and in accordance with 01 51 00 – Temporary Facilities.
- .2 Post notices and take precautions as required by local health authorities. Keep area and premises in sanitary condition.

#### **1.12 CONSTRUCTION SIGNAGE**

- .1 No other signs or advertisements, other than warning signs, are permitted on site.
- .2 Signs and notices for safety and instruction in English Graphic symbols to CAN/CSAZ321.
- .3 Maintain approved signs and notices in good condition for duration of Project and dispose of offsite on completion of Project or earlier if directed by the Consultant.
- .4 Provide signage in compliance O. Reg. 213/91 CONSTRUCTION PROJECTS, Canada Occupational Health and Safety Regulations SOR/86-304, Ontario Occupational Health and Safety Act, R.S.O. 1990 and applicable laws and standards.

- .5 The Owner may supply or instruct the Contractor to supply other signs. Signs shall be installed by the Contractor. Specification of signage will be provided by the Owner. Any additional cost will be valued as per Contract Documents.

### **1.13 PROTECTION AND MAINTENANCE OF TRAFFIC**

- .1 Provide access and temporary relocated roads as necessary to maintain traffic.
- .2 Maintain and protect traffic on affected roads during construction period except as otherwise specifically directed by the Consultant.
- .3 Provide measures for protection and diversion of traffic, including provision of watch-persons and flag-persons, erection of barricades, placing of lights around and in front of equipment and work, and erection and maintenance of adequate warning, danger, and direction signs
- .4 Protect travelling public from damage to person and property.
- .5 Contractor's traffic on roads selected for hauling material to and from site to interfere as little as possible with public traffic.
- .6 Verify adequacy of existing roads and allowable load limit on these roads. Contractor shall be responsible for repair of damage to roads caused by construction operations.
- .7 Construct access and haul roads necessary only after obtaining the Consultant's approval.
- .8 Access roads: constructed with suitable grades and widths; sharp curves, blind corners, and dangerous cross traffic shall be avoided.
- .9 Provide necessary lighting, signs, barricades, and distinctive markings for safe movement of traffic.
- .10 Dust control: adequate to ensure safe operation at all times.
- .11 Location, grade, width, and alignment of construction and hauling roads: subject to approval by the Owner.
- .12 Lighting: to assure full and clear visibility for full width of access road and work areas during night work operations.
- .13 Provide snow removal during period of Work.
- .14 Remove, upon completion of Work, access roads designated by the Owner.

### **1.14 CLEAN-UP**

- .1 Remove construction debris, waste materials, packaging material from work site daily.
- .2 Clean dirt or mud tracked onto paved or surfaced roadways.
- .3 Store materials resulting from demolition activities that are salvageable.
- .4 Stack stored new or salvaged material not in construction facilities at a location approved by the Consultant.

### **2.01 TEMPORARY EROSION AND SEDIMENTATION CONTROL**

- .1 Provide temporary erosion and sedimentation control measures to prevent soil erosion and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways,



according to requirements of Authorities Having Jurisdiction, sediment and erosion control drawings, sediment and erosion control plan, specific to site, that complies with EPA 832/R-92-005 or requirements of Authorities Having Jurisdiction, whichever is more stringent.

- .2 Inspect, repair, and maintain erosion and sedimentation control measures during construction until permanent vegetation has been established.
- .3 Remove erosion and sedimentation controls and restore and stabilize areas disturbed during removal.

**END OF SECTION**

## **1 GENERAL**

### **1.01 REFERENCE STANDARDS**

- .1 Canadian Construction Documents Committee (CCDC)
  - .1 CCDC 2-2020, Stipulated Price Contract.
- .2 Canadian General Standards Board (CGSB)
  - .1 CGSB 1.59-[97], Alkyd Exterior Gloss Enamel.
  - .2 CAN/CGSB 1.189-[00], Exterior Alkyd Primer for Wood.
- .3 CSA Group (CSA)
  - .1 CSA-O121-[M1978(R2003)], Douglas Fir Plywood.

### **1.02 RELATED REQUIREMENTS**

- .1 Section 01 14 00 – Work Restrictions
- .2 Section 01 52 00 – Construction Facilities
- .3 Section 01 55 26 – Traffic Controls
- .4 Section 01 57 00 – Temporary Controls.
- .5 Section 01 74 00 – Cleaning
- .6 Section 01 74 19 – Waste Management and Disposal.

### **1.03 INSTALLATION AND REMOVAL**

- .1 Provide temporary controls in order to execute Work expeditiously.
- .2 Remove from site all such work after use.

### **1.04 HOARDING**

- .1 Unless otherwise specified, erect temporary site enclosures using self-supporting 1.8m high metal fence. Provide lockable truck gate(s). Maintain fence in good repair.
- .2 Provide barriers around trees and plants designated to remain. Protect from damage by equipment and construction procedures.

### **1.05 GUARD RAILS AND BARRICADES**

- .1 Provide secure, rigid guard rails and barricades as required by applicable Laws, codes and governing authorities.

### **1.06 WEATHER ENCLOSURES**

- .1 Provide weather tight closures to unfinished door and window openings, and other openings in floors and roofs.

## 1 GENERAL

### 1.01 SUMMARY

- .1 This Specification covers the requirements for temporary controls of soil erosion and sediment loss, control of pests, control of pollution entering the soil, prevention of pollution in stormwater, control of site dust, and site security.

### 1.02 REFERENCE STANDARDS

- .1 Canadian Construction Documents Committee (CCDC)
  - .1 CCDC 2-2020, Stipulated Price Contract.
- .2 The Contractor shall complete all Work relevant to this section in accordance with Ontario Provincial Standard Specification (OPSS):
  - .1 OPSS.PROV 804 – TEMPORARY EROSION CONTROL
  - .2 OPSS.PROV 805 – TEMPORARY SEDIMENT CONTROL
  - .3 Sections – Measurement for Payment and Basis of Payment are not used.

### 1.03 TEMPORARY PEST CONTROL

- .1 Perform pest control to minimize attraction and harboring of rodents, insects, and other pests. Perform extermination and control procedures at regular intervals.
- .2 Project shall be free of pests and their residues at Substantial Performance of the Work.
- .3 Perform pest control in accordance with integrated pest management principles with no hazardous or toxic substances released into stormwater or environment.

### 1.04 TEMPORARY ENVIRONMENTAL CONTROL

- .1 Use construction methods that comply with environmental regulations and minimize possible air, waterway, and subsoil contamination and pollution.
- .2 Meetings: Train persons on equipment fueling, spill prevention and response, good housekeeping protocols, material handling, and waste material handling before their first day on site.
- .3 Management:
  - .1 Monitor and repair leaks of polluting liquids on vehicles. Prevent leaks of antifreeze, brake fluid, diesel fuel, gasoline, oil, transmission fluid, and other liquids that may be harmful to the environment or storm drainage systems.
  - .2 Store petroleum products in clearly labelled sealed containers. Provide spill kits and impermeable tarps at fueling and maintenance areas.
  - .3 Supply a collection skid or similar material for waste materials.
  - .4 Tightly seal and store paint containers, sealers, and curing compounds in a protected location when not required. Prevent excess materials from discharging into storm drainage system.
  - .5 Prevent concrete trucks from discharging surplus concrete or drum wash water on site.
  - .6 Place absorbent materials to soak up excess form release agents. Replace absorbent materials when saturated.
  - .7 When applying fertilizer, minimize the discharge of pollutants into stormwater.

### 1.05 TEMPORARY SITE DUST CONTROL

- .1 Provide measures to prevent airborne dust to adjacent properties and walkways

according to requirements of AHJ and meeting requirements of authority having jurisdiction, including but not limited to the local municipality.

- .2 Create and implement a site-specific dust control plan.
- .3 Dust Control Windbreaks: Geotextile fabric attached to snow or temporary site fencing with fence posts and tie wires. Other measures will be considered.
- .4 If surface water taking in excess of 50,000 L/day is required for dust suppression or other activities, the contractor is to prepare an Environmental Activity and Sector Registry (EASR) as outlined in Ontario Regulation 63/16 (O. Reg.), made under the Environmental Protection Act, Registrations Under Part 11.2 of the Act – Water Taking.

## **1.06 TEMPORARY SECURITY**

- .1 Temporary Site Security:
  - .1 Site Fencing: Before beginning excavation and before construction activities begin, provide temporary site enclosure fencing with lockable gates to prevent unauthorized access.
  - .2 Extent of Fencing: To enclose entire Project site or a portion sufficient to accommodate construction activities as indicated on Drawings.
  - .3 Distribute gate keys to authorized personnel only. Supply Owner with one set of keys.
- .2 Temporary Building Security:
  - .1 Install temporary enclosure around partially completed areas of construction. Provide lockable entrances to prevent unauthorized access, vandalism, theft, and similar security violations.
  - .2 Distribute building entrance keys to authorized personnel only. Supply Owner with one set of keys.

## **1.07 ACTION AND INFORMATIONAL SUBMITTALS**

- .1 Submit information in accordance with Section 01 33 00 - Submittal Procedure.

# **2 PRODUCTS**

## **2.1 REGULATORY REQUIREMENTS**

- .1 Protect storm sewers and roadways in accordance with local municipal requirements.
- .2 Protect waterways and ground water in accordance with AHJ.
- .3 The Contractor is notified of the presence of existing utilities within Project limits, including but not limited to Bell, North Bay Hydro, Enbridge, Hydro One, Northern Ontario Wire. Care shall be taken during construction operations to avoid damages to the existing utilities. The Contractor shall provide protection and/or support to all existing utilities as required to facilitate their construction operations. The Contractor shall familiarize themselves with utility plans prior to undertaking works in these locations.

# **3 EXECUTION**

## **3.1 CLOSEOUT ACTIVITIES**

- .1 Remove temporary control measures shortly before Substantial Performance of the Work or when acceptable to the Owner.
- .2 Restore landscape areas that were damaged by temporary control measures.

## **3.2 MAINTENANCE**

- .1 Inspection and Maintenance:
  - .1 Inspect, repair, and maintain temporary control measures during construction.
  - .2 Inspect control measures weekly to prevent unwanted situations such as odours, mosquitoes, and weeds. Confirm control measures are working properly. Repair or replace when required.
  - .3 Repair silt fences and erosion control fabric when damaged.
  - .4 Perform non-routine inspection and maintenance arising from unplanned incidents such as repairs after severe weather and accidental damage.
  - .5 Record each inspection and maintenance event in a daily log. Keep a copy of logs at the Project site. Maintain permanent file of logs until final acceptance of the Work.

**END OF SECTION**

## 1 GENERAL

### 1.01 REFERENCE STANDARDS

- .1 Canadian Construction Documents Committee (CCDC)
- .1 CCDC 2-2020, Stipulated Price Contract.

### 1.02 RELATED REQUIREMENTS

- .1 Section 01 11 00 - Summary Of Work.
- .2 Section 01 45 00 - Quality Control.
- .3 Section 01 73 00 – Execution.

### 1.03 QUALITY

- .1 Products, materials, equipment and articles incorporated in Work shall be new, not damaged or defective, and of best quality for purpose intended. If requested, furnish evidence as to type, source and quality of Products provided.
- .2 Procurement policy is to acquire, in cost effective manner, items containing highest percentage of recycled and recovered materials practicable consistent with maintaining satisfactory levels of competition. Make reasonable efforts to use recycled and recovered materials in execution of Work.
- .3 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.
- .4 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.
- .5 Unless otherwise indicated in Specifications, maintain uniformity of manufacture for any particular or like item.
- .6 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.

### 1.04 AVAILABILITY

- .1 Immediately upon signing Contract, review Product delivery requirements and anticipate foreseeable supply delays for items. If delays in supply of Products are foreseeable, notify the Consultant of such, in order that substitutions or other remedial action may be authorized in ample time to prevent delay in performance of Work.
- .2 In event of failure to notify the Consultant at commencement of Work and should it subsequently appear that Work may be delayed for such reason, the Owner reserves right to substitute more

readily available products of similar character, at no increase in Contract Price or Contract Time.

#### **1.05 STORAGE, HANDLING AND PROTECTION**

- .1 Handle and store Products in a manner to prevent damage, adulteration, deterioration and soiling and in accordance with manufacturer's instructions when applicable.
- .2 Store packaged or bundled Products in original and undamaged condition with manufacturer's seal and labels intact. Do not remove from packaging or bundling until required in Work.
- .3 Store Products subject to damage from weather in weatherproof enclosures.
- .4 Store cementitious Products clear of earth or concrete floors, and away from walls.
- .5 Keep sand, when used for grout or mortar materials, clean and dry. Store sand on wooden platforms and cover with waterproof tarpaulins during inclement weather.
- .6 Store sheet materials, lumber, etc. on flat, solid supports and keep clear of ground. Slope to shed moisture.
- .7 Store and mix paints in heated and ventilated room. Remove oily rags and other combustible debris from site daily. Take every precaution necessary to prevent spontaneous combustion.
- .8 Remove and replace damaged Products at own expense and to satisfaction of the Consultant.
- .9 Touch-up damaged factory finished surfaces at own expense and to the Consultant satisfaction. Use touch-up materials to match original. Do not paint over name plates.

#### **1.06 TRANSPORTATION**

- .1 Pay costs of transportation of Products required in performance of Work, unless otherwise specified.
- .2 Transportation cost of Products Supplied By Others will be paid for by the Owner. Unload, handle, store and protect such Products.

#### **1.07 MANUFACTURER'S INSTRUCTIONS**

- .1 Unless otherwise indicated in 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.
- .2 Notify the Consultant in writing, of conflicts between Specifications and manufacturer's instructions, so that the Consultant will establish course of action.
- .3 Improper installation or erection of Products, due to failure in complying with these requirements, authorizes the Consultant to require removal and re-installation at no increase in Contract Price or Contract Time.

#### **1.08 QUALITY OF WORK**

- .1 Ensure quality of Work is of highest standard, executed by workers experienced and skilled in

respective duties for which they are employed. Immediately notify the Consultant if required Work is such as to make it impractical to produce required results.

- .2 Do not employ anyone unskilled in their required duties. The Owner and the Consultant reserve the right to require dismissal from site workers deemed incompetent or careless.
- .3 Decisions as to standard or fitness of Quality of Work in cases of dispute rest solely with the Consultant, whose decision is final.

#### **1.09 CO-ORDINATION**

- .1 Ensure co-operation of workers in laying out Work. Maintain efficient and continuous supervision.
- .2 Be responsible for coordination and placement of openings, sleeves and accessories.
- .3 Co-ordinate with the Consultant delivery times. Ensure to provide sufficient notices for large deliveries that may impact traffic or block roads.

#### **1.10 CONCEALMENT**

- .1 In finished areas conceal pipes, ducts and wiring in floors, walls and ceilings, except where indicated otherwise.
- .2 Before installation, inform the Consultant if there is interference. Install as directed by the Consultant.

#### **1.11 REMEDIAL WORK**

- .1 Perform remedial work required to repair or replace parts or portions of Work identified as defective or unacceptable. Co-ordinate adjacent affected Work as required.
- .2 Perform remedial work by specialists familiar with materials affected. Perform in a manner to neither damage nor put at risk any portion of Work.

#### **1.12 LOCATION OF FIXTURES**

- .1 Consider location of fixtures, outlets, and mechanical and electrical items indicated as approximate.
- .2 Inform the Consultant of conflicting installation and propose alternative solution for Acceptance.

#### **1.13 FASTENINGS**

- .1 Provide metal fastenings and accessories in same texture, colour and finish as adjacent materials, unless indicated otherwise.
- .2 Prevent electrolytic action between dissimilar metals and materials.
- .3 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.
- .4 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.



- .5 Keep exposed fastenings to a minimum, space evenly and install neatly.
- .6 Fastenings which cause spalling or cracking of material to which anchorage is made are not acceptable.

#### **1.14 FASTENINGS - EQUIPMENT**

- .1 Use fastenings of standard commercial sizes and patterns with material and finish suitable for service.
- .2 Unless otherwise specified, use heavy hexagon heads, semi-finished. Use No. 304 stainless steel for exterior areas.
- .3 Bolts may not project more than one diameter beyond nuts.
- .4 Use plain type washers on equipment, sheet metal and soft gasket lock type washers where vibrations occur. Use resilient washers with stainless steel.

#### **1.15 PROTECTION OF WORK IN PROGRESS**

- .1 Prevent overloading of parts of building or structures. Do not cut, drill or sleeve load bearing structural member, unless specifically indicated without written approval of the Consultant.

#### **1.16 EXISTING UTILITIES**

- .1 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/or building occupants] [and pedestrian and vehicular traffic].
- .2 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.

**END OF SECTION**

## 1 GENERAL

### 1.01 SECTION INCLUDES

- .1 Common requirements for installing, applying, and erecting Products. Includes procedures and Submittals for cutting and patching to existing conditions and required repairs arising from tests and destructive inspections.

### 1.02 REFERENCE STANDARDS

- 1. Canadian Construction Documents Committee (CCDC)
  - 1. CCDC 2-2020, Stipulated Price Contract.

### 1.03 RELATED REQUIREMENTS

- .1 Section 01 14 00 – Work Restrictions
- .2 Section 01 33 00 - Submittal Procedures.
- .3 Section 01 45 00 – Quality Control.

### 1.04 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Submit proof of anchor and fastener load carrying capacity for a work result, when requested.
- .3 Submit written request in advance of cutting or altering to existing conditions which may affect the following:
  - .1 structural integrity of existing elements: Submit structural details and calculations performed by a professional structural engineer registered or licensed in Province of Ontario, Canada for the Consultant review and Acceptance. Include evidence of unsatisfactory structural integrity of the elements according to the Consultant.
  - .2 integrity of weather-exposed and moisture-resistant elements.
  - .3 efficiency, maintenance, safety, or accessibility of operational elements.
  - .4 visual qualities of sight-exposed elements.
  - .5 Work of Owner or other contractor(s).
- .4 Submit a request for cutting or altering which includes:
  - .1 identification of the Project; and
  - .2 location and description of affected existing conditions including changes to structural elements, function of elements, and visual appearance of existing elements; and the

location and identification of utilities that will be temporarily out of service during cutting and patching activities.

- .5 Submit site plan drawings for each Place of the Work indicating relative location of various services and equipment upon the request of the Consultant.
- .6 Submit a work plan for review and Acceptance including:
  - .1 a statement why cutting or altering is unavoidable and describe alternatives to cutting and patching if available;
  - .2 a description of proposed Work and proposed Products;
  - .3 specific description of reinstatement activities following completion of the Work.
  - .4 the effect of cutting or altering on work by Owner or other contractors;
  - .5 written acknowledgment by other contractors affected by cutting or altering, if applicable; and
  - .6 proposed date(s) and time(s) Work will be executed.

## 1.05 QUALIFICATIONS

- .1 Engage a structural engineer licensed at the Place of Work, to submit details and calculations when altering existing structural elements.

## 2 PRODUCTS

### 2.01 MATERIALS

- .1 Patching Materials: If possible, use the same materials found in the existing conditions, except in fire-resistance rated materials and assemblies.
- .2 Materials visible from the floor area: Use materials that visually match existing adjacent surfaces and match existing functional performance.

## 3 EXECUTION

### 3.01 COMMON INSTALLATION/APPLICATION/ERECTION REQUIREMENTS

- .1 Fit several parts together, to integrate with other Work.
- .2 Remove and replace defective and non-conforming Work.
- .3 Unless otherwise indicated in 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.

- .4 Notify the Consultant in writing, of conflicts between Specifications and manufacturer's instructions, so that the Consultant can establish course of action.
- .5 Improper installation or erection of Products, due to failure in complying with these requirements, authorizes the Consultant to require removal and re-installation at no increase in Contract Price or Contract Time.
- .6 Provide openings in non-structural elements for penetrations of mechanical and electrical Work.
- .7 Conceal pipes, ducts and wiring in floor, wall, partition, and ceiling assemblies in finished areas, except as indicated otherwise.
- .8 In addition to the manufacturer's recommendations for safety, access, accessibility, and maintenance, locate equipment, fixtures, and distribution systems where it shall provide minimal interference and shall maximize on usable space.
  - .1 Location of equipment, fixtures, and outlets indicated on Drawings and in Specifications are approximate.
  - .2 Notify the Consultant of impending installation and obtain Acceptance for actual locations.

### 3.02 BRACING AND ANCHORING

- .1 Anchors and Fasteners: Unless otherwise indicated elsewhere:
  - .1 Provide any necessary anchors and fasteners to fasten each component securely for its intended purpose. Allow for building movement, including from thermal expansion and contraction of materials and assemblies.
  - .2 Prevent electrolytic reaction between dissimilar metals and materials.
  - .3 Provide hot-dip galvanized or stainless steel anchors and fasteners for securing exterior work;
  - .4 Locate anchors and fasteners within individual load limit or shear capacity. Ensure anchors and fasteners are permanently secured.
  - .5 Where exposed to view, evenly distribute anchors and fasteners in a single area; and
  - .6 Where exposed to view, provide metal anchors, fasteners, and related accessories with the same texture, colour, and finish as adjacent materials.
- .2 Non-Conforming Work: Anchors and fasteners installed which cause substrate cracks or spalling are not acceptable.

### 3.03 CUTTING AND PATCHING

- .1 Proceed with cutting and patching only after the review and Acceptance by the Consultant of all Submittals listed in Article 1.03, Actions and Informational Submittals.

- .2 Perform cutting, fitting, and patching including excavation and fill, to complete Work in accordance with related technical Specification sections.
- .3 Use special techniques to avoid damaging existing conditions that will remain, and which will result in proper surfaces to receive patching and finishing.
- .4 Employ original installer to perform cutting and patching for weather-exposed elements, moisture-resistant elements, and surfaces exposed to view.
- .5 Cut rigid materials using masonry saw, core drill, or other tool recommended by the Product manufacturer or applicable industry association. Pneumatic or impact tools are not allowed on masonry work without the approval of the Consultant.
- .6 Fit Work airtight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.
- .7 Refinish surfaces to match adjacent finishes. Refinish continuous surfaces to nearest intersection (e.g., edges of partition). Refinish assemblies by refinishing entire unit. Provide entire surface with uniform finish, colour, and texture.

**3.04 ADJUSTING**

- .1 Remove and replace patching that is visually unsatisfactory to the Consultant.

**END OF SECTION**

## 1 GENERAL

### 1.01 REFERENCE STANDARDS

- .1 Canadian Construction Documents Committee (CCDC)
  - .1 CCDC 2-2020, Stipulated Price Contract.

### 1.02 PROJECT CLEANLINESS

- .1 Maintain Place of the Work in tidy condition, free from accumulation of waste material and debris.
- .2 Remove waste materials from site at daily regularly scheduled times or dispose of as directed by the Consultant.
- .3 Do not burn waste materials on site.
- .4 Clear snow and ice from access to Place of the Work, bank/pile snow in designated areas only approved by Owner, or remove from site, as agreed upon at outset of Contract.
- .5 Make arrangements with and obtain permits from Authorities Having Jurisdiction (AHJ) for disposal of waste and debris.
- .6 Provide on-site steel containers for collection of waste materials and debris.
- .7 Provide and use marked separate bins for recycling. Refer to Section 01 74 19 - Waste Management and Disposal.
- .8 Dispose of waste materials and debris at appropriate off-site facilities.
- .9 Clean interior areas prior to start of finishing Work and maintain areas free of dust and other contaminants during finishing operations.
- .10 Store volatile waste in covered metal containers and remove from premises at end of each Working Day, unless authorized otherwise by the Consultant.
- .11 Provide adequate ventilation during use of volatile or noxious substances. Use of existing or new ventilation systems is not permitted for this purpose.
- .12 Use only cleaning materials recommended by manufacturer of surface to be cleaned, and as recommended by cleaning material manufacturer.
- .13 Schedule cleaning operations so that resulting dust, debris and other contaminants will not fall on wet, newly painted surfaces nor contaminate new or existing systems or facilities.

### 1.03 FINAL CLEANING

- .1 When Work is Substantially Performed remove surplus Products, tools, Construction Equipment not required for performance of remaining Work.
- .2 Remove waste products and debris other than that caused by others and leave Place of the Work clean and suitable for occupancy.

- .3 Prior to final review, remove remaining surplus Products, tools and Construction Equipment.
- .4 Remove waste materials from site at regularly scheduled times or dispose of as directed by Owner or the Consultant.
- .5 Do not burn waste materials on site.
- .6 Make arrangements with and obtain permits from Authorities Having Jurisdiction (AHJ) for disposal of waste and debris.
- .7 Clean and polish glass, mirrors, hardware, wall tile, stainless steel, chrome, porcelain enamel, baked enamel, plastic laminate, wood, and mechanical and electrical fixtures. Replace broken, scratched or disfigured glass.
- .8 Remove stains, spots, marks and dirt from decorative work, electrical and mechanical fixtures, furniture fitments, walls, floors and ceilings, and at exterior of building.
- .9 Clean lighting reflectors, lenses, and other lighting surfaces.
- .10 Vacuum, clean, and dust interiors, behind grilles, louvres and screens.
- .11 Wax, seal, shampoo or prepare floor finishes, as recommended by manufacturer.
- .12 Inspect finishes, fitments and equipment and ensure specified workmanship and operation.
- .13 Broom clean and wash exterior walks, steps and surfaces; rake clean other surfaces of grounds.
- .14 Remove dirt and other disfiguration from exterior surfaces.
- .15 Clean and sweep roofs, gutters, areaways, and sunken wells.
- .16 Sweep and wash clean paved areas.
- .17 Clean equipment and fixtures to sanitary condition; clean or replace filters of mechanical equipment.
- .18 Clean roofs, downspouts, and drainage systems.
- .19 Remove debris and surplus materials from crawl areas and other accessible concealed spaces.
- .20 Remove snow and ice from access to Place of the Work.

**1.04 WASTE MANAGEMENT AND DISPOSAL**

- .1 Separate waste materials for recycling in accordance with Section 01 74 19 - Waste Management and Disposal.

**END OF SECTION**

- .2 Close off floor areas where walls are not finished; seal off other openings; enclose building interior work for temporary heat.
- .3 Design enclosures to withstand wind pressure and snow loading.

#### **1.07 DUST TIGHT SCREENS**

- .1 Provide dust tight screens or insulated partitions to localize dust generating activities, and for protection of workers, finished areas of Work and public.
- .2 Maintain and relocate protection until such Work is complete.

#### **1.08 ACCESS TO SITE**

- .1 Provide and maintain access roads, sidewalk crossings, ramps and construction runways as may be required for access to Work.

#### **1.09 PUBLIC TRAFFIC FLOW**

- .1 Provide and maintain competent signal flag operators, traffic signals, barricades and flares, lights, or lanterns as required to perform Work and protect public.
- .2 Ensure public use of operational facilities is protected appropriately. Reference section 01 14 00 – Work Restrictions, for details of operational facilities.

#### **1.10 FIRE ROUTES**

- .1 Maintain access to property including overhead clearances for use by emergency response vehicles.

#### **1.11 PROTECTION FOR OFF-SITE AND PUBLIC PROPERTY**

- .1 Protect surrounding private and public property from damage during performance of Work.
- .2 Be responsible for damage incurred.

#### **1.12 PROTECTION OF FINISHES**

- .1 Provide protection for finished and partially finished finishes and equipment during performance of Work.
- .2 Provide necessary screens, covers, and hoardings.
- .3 Confirm with the Owner locations and installation of protection of finishes five (5) Working Days prior to installation.
- .4 Be responsible for damage incurred due to lack of or improper protection.

#### **1.13 WASTE MANAGEMENT AND DISPOSAL**

- .1 Separate waste materials for recycling in accordance with Sections 01 74 00 – Cleaning and 01 74 19 – Waste Management and Disposal.

**END OF SECTION**



## 1 GENERAL

### 1.01 SUMMARY

- .1 The Project shall generate the least amount of waste possible. Contractor shall implement processes to ensure the generation of as little waste as possible due to error, poor planning, breakage, mishandling, contamination, or other factors be employed by the Contractor.

### 1.02 REFERENCE STANDARDS

- .1 Canadian Construction Documents Committee (CCDC)
  - .1 CCDC 2-2020, Stipulated Price Contract.
- .2 ASTM International (ASTM)
  - .1 ASTM E1609 01, Standard Guide for Development and Implementation of a Pollution Prevention Program

### 1.03 DEFINITIONS

- .1 Clean Waste: Untreated and unpainted; not contaminated with oils, solvents, sealants or similar materials.
- .2 Construction and Demolition Waste: Solid wastes typically including building materials, packaging, trash, debris, and rubble resulting from construction, re-modeling , repair and demolition operations.
- .3 Hazardous: Exhibiting the characteristics of hazardous substances including properties such as ignitability, corrosiveness, toxicity, or reactivity.
- .4 Non-hazardous: Exhibiting none of the characteristics of hazardous substances, including properties such as ignitability, corrosiveness, toxicity, or reactivity.
- .5 Non-toxic: Not poisonous to humans either immediately or after a long period of exposure.
- .6 Recyclable: The ability of a product or material to be recovered at the end of its life cycle and remanufactured into a new product for reuse by others.
- .7 Recycle: To remove a waste material from the Project site to another site for remanufacture into a new product for reuse by others.
- .8 Recycling: The process of sorting, cleansing, treating and reconstituting solid waste and other discarded materials for the purpose of using the altered form; recycling does not include burning, incinerating, or thermally destroying waste.
- .9 Return: To give back reusable items or unused products to vendors for credit.
- .10 Reuse: To reuse a construction waste material in some manner on the Project site.
- .11 Salvage: To remove a waste material from the Project site to another site for resale or reuse by others.

- .12 Sediment: Soil and other debris that has been eroded and transported by storm or well production run off water.
- .13 Source Separation: The act of keeping different types of waste materials separate beginning from the first time they become waste.
- .14 Toxic: Poisonous to humans either immediately or after a long period of exposure.
- .15 Trash: Any product or material unable to be reused, returned, recycled, or salvaged.
- .16 Volatile Organic Compounds (VOC's): Chemical compounds common in and emitted by many building products over time through outgassing:
  - .1 Solvents in paints and other coatings;
  - .2 Wood preservatives; strippers and household cleaners;
  - .3 Adhesives in particleboard, fiberboard, and some plywood; and foam insulation.
  - .4 When released, VOC's can contribute to the formation of smog and can cause respiratory tract problems, headaches, eye irritations, nausea, damage to the liver, kidneys, and central nervous system, and possibly cancer.
- .17 Waste: Extra material or material that has reached the end of its useful life in its intended use. Waste includes salvageable, returnable, recyclable, and reusable material.

#### 1.04 RELATED REQUIREMENTS

- .1 Section 01 31 19 - Project Meetings
- .2 Section 01 33 00 - Submittal Procedures
- .3 Section 01 51 00 - Temporary Utilities
- .4 Section 01 74 00 – Cleaning.

#### 1.05 ADMINISTRATIVE REQUIREMENTS

- .1 Coordination: Coordinate waste management requirements with all divisions of the Work for the Project and ensure that requirements of the Waste Management Plan (WMP) are followed.
- .2 Preconstruction Meeting: During the pre-construction meeting arranged in accordance with Section 01 31 19 - Project Meetings, discuss the Contractor's Waste Management Plan and to develop mutual understanding of the requirements for a consistent policy towards waste reduction and recycling.

#### 1.06 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit required information in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Action Submittals: Provide the following Submittals for Acceptance before starting any Work of this section:
  - .1 WMP: Submit to the Consultant for review a draft WMP including a preliminary analysis of

anticipated site-generated waste by listing a minimum of five (5) construction or demolition waste streams that have potential to generate the most volume of material indicating methods that will be used to divert construction waste from landfill and source reduction strategies. The Owner and the Consultant may provide comments within five (05) Working Days. Update as required and resubmit to the Consultant the final WMP for Acceptance within (05) Working Days.

.2 WMP shall include, but not limited to:

- .1 Material Streams: Analysis of the proposed jobsite waste being generated, including material types and quantities forming a part of identified material streams in the WMP materials removed from site destined for alternative daily cover at landfill sites and land clearing debris cannot be considered as contributing to waste diversion and will be included as a component of the total waste generated for the site.
- .2 Recycling Haulers and Markets: Investigate local haulers and markets for recyclable materials, and incorporate into WMP.
- .3 Alternative Waste Disposal: Prepare a listing of each material proposed to be salvaged, reused, recycled or composted during the course of the Project, and the proposed local market for each material.
- .4 Landfill Materials: materials that cannot be recycled, reused or composted.
- .5 Landfill Options: The name of the landfill where trash will be disposed of; landfill materials will form a part of the total waste generated by the Project.
- .6 Materials Handling Procedures: A description of the means by which any recycled waste materials will be protected from contamination, and a description of the means to be employed in recycling the above materials consistent with requirements for acceptance by designated facilities.
- .7 Transportation: A description of the means of transportation of the recyclable materials, whether materials will be site separated and self-hauled to designated centers, or whether mixed materials will be collected by a waste hauler and removed from the site, and destination of materials.

## 1.07 PROJECT CLOSEOUT SUBMITTALS

- .1 Diversion Documentation: Submit as constructed information in accordance with Section 01 78 00 - Closeout Submittals as follows:
  - .1 Waste Management Report: Submit for this Project in a format acceptable to submittal requirements and that includes the following information:
    - .1 Accounting: Submit information indicating total waste produced by the Project.
    - .2 Composition: Submit information indicating types of waste material and quantity of each material.
    - .3 Diversion Rate: Submit information indicating total waste diverted from landfill as a

percentage of the total waste produced by the Project.

- .4 Submit copies of transportation documents or shipping manifests indicating weights of materials, and other evidence of disposal indicating final location of waste diverted from landfill and waste sent to landfill.

### **1.08 DELIVERY, STORAGE, AND HANDLING**

- .1 Storage Requirements: Implement a recycling/reuse program that includes separate collection of waste materials as appropriate to the Project waste and the available recycling and reuse programs in the Project area.
  - .1 Provide separate containers for reusable and/or recyclable materials such as:
    - .1 Metals.
    - .2 Wood.
    - .3 Plastics
- .2 Handling Requirements: Clean materials that are contaminated before placing in collection containers and ensure that waste destined for landfill does not get mixed in with recycled materials:
  - .1 Deliver materials free of dirt, adhesives, solvents, petroleum contamination, and other substances deleterious to recycling process.
  - .2 Arrange for collection by or delivery to the appropriate recycling or reuse facility.
- .3 Hazardous Waste and Hazardous Materials: Handle in accordance with applicable regulations.

### **2.01 NOT USED**

- .1 Not Used.

### **3.01 WASTE MANAGEMENT PLAN IMPLEMENTATION**

- .1 Contractor is responsible for designating an on-site party or parties responsible for instructing workers and overseeing and documenting results of the WMP for the Project.
- .2 Distribute copies of the WMP to the job site foreman, each Subcontractor, the Owner, the Consultant and other site personnel as required to maintain WMP.
- .3 Provide on-site instruction of appropriate separation, handling, and recycling, salvage, reuse, composting and return methods being used for the Project to employees and Subcontractors at appropriate stages of the Project.
- .4 Layout and label a specific area to facilitate separation of materials for potential recycling, salvage, reuse, composting and return:
  - .1 Recycling and waste bin areas are to be kept neat and clean and clearly marked in order to avoid contamination of materials.
  - .2 Hazardous wastes shall be separated, stored, and disposed of in accordance with local

regulations.

- .5 Submit to the Consultant a monthly summary of waste generated by the Project including details of waste diverted for recycling:
  - .1 Submittal of waste summary can coincide with application for progress payment, or similar milestone event as agreed upon between the Owner and the Contractor.
  - .2 Monthly waste summary shall contain the following information:
    - .1 The amount in tonnes or m<sup>3</sup> and location of material landfilled,
    - .2 The amount in tonnes or m<sup>3</sup> and location of materials diverted from landfill, and
    - .3 Indication of progress based on total waste generated by the Project with materials diverted from landfill as a percentage.

### **3.02 CONTRACTOR'S RESPONSIBILITY**

- .1 Subcontractors shall cooperate fully with the Contractor to implement the WMP.
- .2 The Contractor shall be responsible for all additional costs incurred by the Owner and the Contractor arising from the failure to comply with the WMP.

**END OF SECTION**

### 1.01 GENERAL REFERENCE STANDARDS

- .1 Canadian Construction Documents Committee (CCDC)
  - .1 CCDC 2-2020, Stipulated Price Contract.

### 1.02 ADMINISTRATIVE REQUIREMENTS

- .1 Acceptance of Work Procedures:
  - .1 Contractor's Inspection: conduct inspection of Work, identify deficiencies and defects, and repair as required to conform to Contract Documents.
    - .1 Notify the Consultant in writing of satisfactory completion of Contractor's inspection and submit verification that corrections have been made.
    - .2 Request the Owner inspection.
  - .2 The Owner Inspection:
    - .1 The Owner, the Consultant and the Contractor will inspect the Work and identify defects and deficiencies.
    - .2 Contractor to correct Work as directed.
  - .3 Completion Tasks: submit written certificates in English that tasks have been performed as follows:
    - .1 Work: completed and inspected for compliance with Contract Documents.
    - .2 Defects: corrected and deficiencies completed.
    - .3 Equipment and systems: tested, adjusted and balanced and fully operational.
    - .4 Certificates required by Authority Having Jurisdiction submitted and approved.
    - .5 Operation of systems: demonstrated to Owner's personnel.
    - .6 Commissioning of equipment and systems: completed in accordance with 01 91 13 - GENERAL COMMISSIONING REQUIREMENTS and copies of final Commissioning Report submitted to the Consultant.
    - .7 Apply for certification of Substantial Performance of the Work and Ready-For-Takeover in accordance with the Contract Documents.
    - .8 Submit all Close-Out Documentation described in GC 5.5.1.2. and section 01 78 00 – Closeout Submittals
    - .9 Work: complete and ready for final inspection.
  - .4 Final Inspection:
    - .1 When completion tasks are done, request final inspection of Work by the Owner and the Consultant.
    - .2 When Work is incomplete according to the Owner or the Consultant, complete outstanding items and request re-inspection.

### 1.03 FINAL CLEANING

- .1 Clean in accordance with Section 01 74 00 - Cleaning.
  - .1 Remove surplus materials, excess materials, rubbish, tools and equipment.
- .2 Waste Management: separate waste materials for recycling in accordance with Section 01 74 19 - Waste Management and Disposal.

END OF SECTION

## **1 GENERAL**

### **1.01 REFERENCE STANDARDS**

- .1 Canadian Construction Documents Committee (CCDC)
  - .1 CCDC 2-2020, Stipulated Price Contract.

### **1.02 SUMMARY**

- .1 Comply with the requirements of this section and other related sections. When the Project is being completed at multiple sites, the requirements shall be met at each location as applicable.

### **1.03 ADMINISTRATIVE REQUIREMENTS**

- .1 Pre-warranty Meeting:
  - .1 Convene meeting with the Owner and the Consultant, in accordance with Section 01 31 19 - Project Meetings to:
    - .1 Verify Project requirements.
    - .2 Review manufacturer's installation instructions and warranty requirements.
    - .3 Establish communication procedures for:
      - .1 Notifying construction warranty defects.
      - .2 Determine priorities for type of defects.
      - .3 Determine reasonable response time.
  - .2 Contact information for bonded and licensed company for warranty work action: provide name, telephone number and address of company authorized for construction warranty work action.
  - .3 Ensure contact is located within local service area of warranted construction, is continuously available, and is responsive to inquiries for warranty work action.

### **1.04 ACTION AND INFORMATIONAL SUBMITTALS**

- .1 Provide Submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Submit to the Consultant for review and Acceptance the operating and maintenance manual (in English). Schedule the Submittal such that Acceptance is received prior to the commencement of training of O&M personnel.
- .3 Following completion of training of operations and maintenance personnel, provide four hard (4) copies and an electronic copy in PDF format of finalized operations and maintenance manual.
- .4 Provide spare parts, maintenance materials and special tools of same quality and manufacture as Products provided in Work.
- .5 Provide evidence, if requested, for type, source and quality of Products supplied.
- .6 Provide a complete set of As-Built Record Drawings sealed by an engineer licensed in the province

## **1 GENERAL**

### **1.01 REFERENCE STANDARDS**

- .1 Canadian Construction Documents Committee (CCDC)
  - .1 CCDC 2-2020, Stipulated Price Contract.

### **1.02 ADMINISTRATIVE REQUIREMENTS**

- .1 Demonstrate scheduled operation and maintenance of equipment and systems to Owner's personnel before date of Substantial Performance of the Work.
- .2 The Owner will provide a list of personnel to receive instructions and coordinate their attendance at agreed-upon times.
- .3 Preparation:
  - .1 Verify conditions for demonstration and instructions comply with requirements.
  - .2 Verify that designated personnel are present.
  - .3 Ensure equipment has been inspected and put into operation in accordance with specified Contract Documents.
  - .4 Ensure testing, adjusting, and balancing have been performed in accordance with Section 01 91 13 - General Commissioning Requirements, and equipment and systems are fully operational.
- .4 Demonstration and Instructions:
  - .1 Demonstrate start-up, operation, control, adjustment, troubleshooting, servicing, and maintenance of each item of equipment at agreed-upon times at the designated location.
  - .2 Instruct personnel in phases of operation and maintenance using operations and maintenance manuals as basis of instruction.
  - .3 Review contents of operations and maintenance manual in detail to explain aspects of operation and maintenance.
  - .4 Prepare and insert additional data in operations and maintenance manuals when needed during instructions.
- .5 The amount of time to be provided for instruction of each item of equipment or system shall be agreed with the Owner in advance.

### **1.03 ACTION AND INFORMATIONAL SUBMITTALS**

- .1 Provide Submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Submit, for Acceptance, a plan including a schedule of times and dates for the demonstration of each item of equipment and each system. Ensure plan is submitted such that Acceptance is received two weeks before designated dates.
- .3 Submit reports within one week after completion of demonstration, provided that demonstration



and instructions have been satisfactorily completed.

- .4 Include in report time and date of each demonstration, with list of persons present.
- .5 Provide sufficient copies of completed operations and maintenance manuals for use in demonstrations and instructions.

#### **1.04 QUALITY ASSURANCE**

- .1 When specified in individual Sections requiring manufacturer to provide authorized representative to demonstrate operation of equipment and systems:
  - .1 Provide demonstration and training as per this section.
  - .2 Submit written report that demonstration and instructions have been completed.

**END OF SECTION**

## **1 GENERAL**

### **1.01 SUMMARY**

**1.02** This section includes general requirements relating to commissioning (Cx) of Project components and systems, specifying general requirements for performance verification (PV) of components, equipment, sub-systems, systems, and integrated systems.

### **1.03 REFERENCE STANDARDS**

- .1 Canadian Construction Documents Committee (CCDC)
  - .1 CCDC 2-2020, Stipulated Price Contract.

### **1.04 RELATED REQUIREMENTS**

- .1 Section 01 31 19 – Project Meetings
- .2 Section 01 32 16.16 Construction Progress Schedule Critical Path Method
- .3 Section 01 45 00 - Quality Control.
- .4 Section 01 77 00 - Closeout Procedures.
- .5 Section 01 78 00 - Closeout Submittals.
- .6 Section 01 79 00 - Demonstration and Training.
- .7 01 91 13.13 – Commissioning Plan
- .8 01 91 13.16 – Commissioning Forms

### **1.05 ABBREVIATIONS**

- .1 AFD: Alternate Forms of Delivery, service provider
- .2 Cx: Commissioning
- .3 EMCS: Energy Monitoring and Control Systems
- .4 O&M: Operations and Maintenance.
- .5 PI: Product Information
- .6 PV: Performance Verification
- .7 TAB: Testing, Adjusting and Balancing.

### **1.06 ADMINISTRATIVE REQUIREMENTS**

.1 Coordination:

- .1 The Consultant will observe some or all commissioning activities at their discretion.
- .2 Owner's Performance Testing: Performance testing of equipment or systems by the Owner or the Consultant will not relieve Contractor from compliance with specified start-up and testing procedures.
- .3 Cooperate fully with the Owner and the Consultant during stages of Acceptance and Ready-for-Takeover.
- .4 Coordination with Authorities Having Jurisdiction (AHJ):
  - .1 Where specified start-up, testing or commissioning procedures duplicate verification requirements of AHJ, arrange for AHJ to witness procedures to avoid duplication of tests and to facilitate an earlier acceptance of equipment or facility.
  - .2 Obtain certificates of approval, acceptance, and compliance with rules and regulations of AHJ.
  - .3 Submit copies of certificates to the Consultant within three (03) days of test.

.2 Commissioning Meetings:

- .1 Arrange Cx meeting(s) as per this section and in accordance with other Specification sections.
- .2 Provide agenda, in accordance with section 01 91 13 – Project Meetings, a minimum of five (05) Working Days before meeting(s).
- .3 Use Cx meetings to resolve issues, monitor progress, and identify defects and deficiencies relating to Cx.
- .4 Continue Cx meetings on a regular basis, including during equipment start-up period, and functional testing period until commissioning deliverables have been addressed.
- .5 At 60% construction completion stage arrange a separate Cx scope meeting to review progress, discuss schedule of equipment start-up activities and prepare for Cx. Additional agenda topics include the following:
  - .1 Review duties and responsibilities of Contractor and Subcontractors, addressing delays and potential problems.
  - .2 Determine the degree of involvement of Subcontractors and manufacturer's representatives in the Cx process.
- .6 Ensure Subcontractors and relevant manufacturer representatives are present at 60% construction completion stage, at subsequent Cx meetings, and when otherwise required.

.3 Observation of Starting and Testing:

- .1 Provide twenty (20) Working Days' notice before beginning commissioning.

- .2 The Owner and the Consultant will observe start-up and testing.
- .3 The Consultant and/or Owner may be present at tests performed and documented by Subcontractors, suppliers, and equipment manufacturers.
- .4 Conflicts:
  - .1 Report conflicts between requirements of this section and other sections to the Consultant and obtain interpretation or clarification before starting commissioning work.
  - .2 Failure to report conflicts and obtain interpretation or clarification will result in application of the more stringent requirement.
- .5 Excess Administration:
  - .1 Contractor shall pay the costs related to Consultant's excess contract administration if third and subsequent verifications occur where:
    - .1 Verification of reported results fail to receive the Owner or Consultant's Acceptance.
    - .2 Repetition of second verification again fails to receive Acceptance.
    - .3 The Consultant deems Contractor's request for second verification was premature.
  - .2 The cost of the Consultant's excess contract administration will be based on a rate of \$260 per hour.

#### 1.07 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.
  - .1 Submit, for review and Acceptance, no later than six (06) weeks after award of Contract:
    - .1 draft Cx documentation and
    - .2 preliminary Cx schedule.
  - .2 Request changes to Submittals in writing to the Consultant and obtain written Acceptance or rejection at least eight (8) weeks before start of Cx.
  - .3 Where Cx procedures are not specified, submit proposed ones to the Consultant and obtain written Acceptance at least eight (8) weeks before start of Cx.
  - .4 Submit additional documentation relating to Cx process as required by the Consultant.
  - .5 If instruments installed in Contract will be used for Cx of TAB and PV, then submit TAB and PV instrument calibration certificates for review.
  - .6 Submit EMCS sensor calibration certificates.
- .2 Commissioning Schedule:

- .1 Create and submit detailed Cx schedule in accordance with section 01 32 16.16 – Construction Progress Schedule and section 01 91 13.13 – Commissioning Plan. The Contractor shall ensure the Cx schedule is incorporated into the Construction Schedule.
- .2 Allow in the schedule adequate time for Cx activities such that activities are completed prior to the required occupancy date, including commissioning activities prescribed in the Specifications including:
  - .1 Acceptance of Cx reports
  - .2 Verification of reported results
  - .3 Repairs, retesting, re-commissioning, and re-verification
  - .4 Training
- .3 Start-Up Documentation:
  - .1 Assemble start-up documentation and submit to the Consultant for review and Acceptance before beginning commissioning.
  - .2 Start-up documentation to include:
    - .1 Factory and on-site test certificates for specified equipment.
    - .2 Pre-start-up inspection reports.
    - .3 Signed installation/start-up checklists.
    - .4 Start-up reports.
    - .5 Step-by-step description of complete start-up procedures so the Consultant or Owner can repeat start-up at any time.
- .4 Submit for review and Acceptance:
  - .1 Complete list of proposed instruments and equipment to perform commissioning.
  - .2 List data including, serial number, current calibration certificate, calibration date, calibration expiry date and calibration accuracy.
- .5 Commissioning Documentation:
  - .1 Submit completed Cx documentation to Consultant for review and Acceptance.

#### **1.08 MAINTENANCE MATERIALS SUBMITTALS**

- .1 Supply and document maintenance materials, spare parts, and special tools as specified in other Specification sections.

#### **1.09 SITE CONDITIONS**

- .1 Where Cx of weather-dependent, occupancy-dependent, or seasonally-dependent equipment or

systems cannot be conducted under near-rated or near-design conditions, extrapolate part-load results to design conditions, if acceptable to the Consultant, with manufacturer's assistance in accordance with equipment manufacturer's instructions, data, and approved formulae.

## 2 PRODUCTS

### 2.01 NOT USED

- .1 Not used.

## 3 EXECUTION

### 3.01 GENERAL

- .1 Cx is a planned program of tests, procedures and checks carried out systematically on systems and integrated systems of the finished Project. Perform Cx after systems and integrated systems are completely installed, functional and Contractor's Performance Verification responsibilities have been completed and Accepted. Complete Cx in the most effective and timely manner available.
  - .1 Objectives: Verify that installed equipment, systems and integrated systems operate in accordance with Contract Documents and design criteria and intent.
- .2 Contractor shall be responsible for the entire Cx process, operating equipment and systems, troubleshooting, and making adjustments as required.
  - .1 Operate systems at full capacity under various modes to determine if they function correctly and consistently at peak efficiency. Systems should interact with each other as intended in accordance with Contract Documents and design criteria.
  - .2 Make adjustments as needed, during these checks, to enhance performance and meet environmental or user requirements.

### COMMISSIONING OVERVIEW

- .1 Refer to Section 01 91 13.13 - Commissioning Plan for additional Cx responsibilities.
- .2 Cx activities supplement the site quality control and testing procedures described in relevant technical Specification sections.
- .3 Conduct Cx in coordination with other activities carried out during the Project delivery stages.
- .4 Cx shall identify issues early on in the construction stages, which are addressed during Construction and Cx stages. This step ensures the built facility meets functional and operational requirements while operating as intended under weather, environmental and occupancy conditions. Cx activities include the transfer of critical knowledge to the Owner's facility operations personnel.
- .5 The Owner will verify *Ready-For-Takeover* has been achieved in accordance with the requirements of GC 12.1.1 and after:

- .1 Completed Cx documentation has been received, reviewed for suitability, and reviewed and Accepted by the Consultant.
- .2 Equipment, components and systems have been commissioned, and
- .3 O&M training has been completed.

### 3.02 PRE-COMMISSIONING REVIEW

- .1 Before Construction:
  - .1 Review Contract Documents and confirm in writing to the Consultant the following:
    - .1 Adequacy of provisions for Cx.
    - .2 Aspects of design and installation pertinent to success of Cx.
- .2 During Construction:
  - .1 Coordinate provision, location, and installation of provisions for Cx.
- .3 Before Beginning Cx:
  - .1 Verify Cx Plan, documentation and schedules are up-to-date.
  - .2 Verify installation of related components, equipment, systems, and sub-systems are complete.
  - .3 Review Cx requirements and procedures.
  - .4 Verify documentation used for the Cx process is shelf-ready (bound, organized, indexed, etc.).
  - .5 Review design criteria and intent, and special features to ensure full understanding.
  - .6 Submit complete start-up documentation to Consultant for Acceptance.
  - .7 Verify systems have been cleaned thoroughly.
  - .8 Complete TAB procedures on systems and submit TAB reports to Consultant for review and Acceptance.
  - .9 Verify "As-Built" system schematics are available.
- .4 Inform Consultant in writing of defects and deficiencies in installed Work together with plan for rectification.

### 3.03 STARTING AND TESTING

- .1 Contractor to bear all costs associated with Cx activities, including, but not limited to, costs of the following:
  - .1 inspections, including disassembly and re-assembly after approval, and for starting, testing, adjusting, and;

- .2 temporary testing equipment.
- .3 required personnel and test equipment.

### 3.04 PERFORMANCE VERIFICATION TOLERANCES

- .1 Application Tolerances:
  - .1 A specified range of acceptable deviations of measured values from specified values or specified design criteria except for special areas that shall be within +/- 10% of specified values.
- .2 Instrument Accuracy Tolerances:
  - .1 To be of higher order of magnitude than equipment or system being tested.
- .3 Measurement Tolerances During Verification:
  - .1 Unless otherwise specified, actual values shall be within +/- 2% of recorded values.

### 3.05 MANUFACTURER SERVICES

- .1 During factory testing, manufacturer, through the Contractor, to:
  - .1 Coordinate time and location of testing.
  - .2 Arrange for Consultant to observe testing.
  - .3 Submit testing documentation for review and Acceptance by Consultant.
  - .4 Obtain written Acceptance of test results and documentation from the Consultant before delivery to site.
- .2 Obtain manufacturer's installation, start-up and operations instructions before start-up of components, equipment and systems, and review with Consultant.
  - .1 Compare completed installation with manufacturer's published data, record discrepancies, and review with manufacturer.
  - .2 Modify procedures that may be detrimental to equipment performance and review with manufacturer before start-up.
- .3 Integrity of warranties:
  - .1 Use manufacturer's trained start-up personnel where specified in other Specification sections or where required to maintain integrity of warranty.
  - .2 Verify with manufacturer that testing as specified will not void warranties.
- .4 Qualifications of manufacturer's personnel:
  - .1 Experienced in design, installation and operation of equipment and systems.



- .2 Ability to interpret test results accurately.
- .3 Report results in clear, concise, logical manner.

### 3.06 COMMISSIONING PROCEDURES

- .1 Verify that equipment and systems are complete, clean, and operating in a normal and safe manner before conducting start-up, testing and Cx.
- .2 Conduct start-up and testing in the following distinct phases:
  - .1 Included in delivery and installation:
    - .1 Verification of conformity to Specification, reviewed and Accepted Shop Drawings and completion of PI report forms.
    - .2 Visual inspection of quality of installation.
  - .2 Start-up: Follow accepted start-up procedures.
  - .3 Operational testing: Document equipment performance.
  - .4 System PV: Include repetition of tests after correcting deficiencies.
  - .5 Post-Substantial Performance Verification: To include fine-tuning.
- .3 Correct deficiencies and obtain Acceptance from the Consultant after distinct phases have been completed and before beginning the next phase.
- .4 Document required tests on approved PV forms.
- .5 Failure to follow accepted start-up procedures may result in re-evaluation of equipment by an independent testing agency selected by the Owner. If evaluation report indicates that equipment start-up procedure was deficient and resulted in equipment damage, perform the following:
  - .1 Minor equipment/systems: Perform corrective measures acceptable to the Consultant .
  - .2 Major equipment/systems: If evaluation report indicates that equipment damage is minor, perform corrective measures acceptable to the Consultant.
  - .3 If evaluation report indicates that major equipment damage has occurred, the Consultant will reject equipment.
    - .1 Remove rejected equipment from site and replace with new equipment.
    - .2 Perform specified start-up procedures on new equipment/systems.

### 3.07 OPERATION AND MAINTENANCE OF EQUIPMENT AND SYSTEMS

- .1 After start-up, operate and maintain equipment and systems as directed or recommended by equipment/system manufacturer.
- .2 With manufacturer's assistance, develop written maintenance program and submit to Consultant

for review and Acceptance before implementation.

- .3 Operate and maintain systems for length of time required for commissioning to be completed.
- .4 After completion of commissioning, operate and maintain systems until issuance of certificate of Substantial Completion.

### **3.08 TEST RESULTS**

- .1 If start-up, testing, or PV produce unacceptable results, repair, replace or repeat specified starting or PV procedures until acceptable results are achieved.
- .2 Provide labor and materials and assume costs for re-commissioning.

### **3.09 START OF COMMISSIONING**

- .1 Notify Consultant at least ten (10) Working Days before start of Commissioning
- .2 Start Cx after elements affecting start-up and performance verification of systems have been completed.

### **3.10 TEMPORARY INSTRUMENTS AND EQUIPMENT**

- .1 Provide all required instruments and equipment required to complete commissioning.

### **3.11 COMMISSIONING PERFORMANCE VERIFICATION**

- .1 Carry out Cx:
  - .1 under actual and accepted simulated operating conditions, over entire operating range, and in all modes, and
  - .2 on independent systems and interacting systems.
- .2 Cx procedures to be repeatable and reported results are to be verifiable.
- .3 Follow equipment manufacturer's operating instructions.
- .4 Where applicable, make EMCS trending information available as supporting documentation for performance verification.

### **3.12 EXTENT OF VERIFICATION**

- .1 Laboratory areas:
  - .1 Provide labour and instrumentation to verify up to 100% of reported results.
- .2 Elsewhere:
  - .1 Provide labour and instrumentation to verify up to 30% of reported results, unless otherwise specified in other Specification sections.

- .3 Number and location to be at discretion of the Consultant.
- .4 Conduct tests repeated during verification under same conditions as original tests, using same test equipment, and instrumentation.
- .5 Review and repeat commissioning of systems if inconsistencies found in more than 20% of reported results.
- .6 Perform additional commissioning until results are Acceptable to the Consultant.

### **3.13 INSTALLED INSTRUMENTATION**

- .1 Use instruments installed under Contract for TAB and PV if:
  - .1 Accuracy complies with this Specification section.
  - .2 Calibration certificates have been submitted to Consultant.
- .2 Calibrated EMCS sensors may be used to obtain performance data if sensor calibration has been completed and accepted.

### **3.14 DEFICIENCIES DISCOVERED DURING COMMISSIONING**

- .1 Correct defects and deficiencies found during the Cx process. Re-verify equipment and components within the defective or deficient system to verify proper performance, including related systems if requested by the Consultant.
- .2 Costs associated with re-commissioning defective and deficient work is the responsibility of Contractor.

### **3.15 MISCELLANEOUS CHECKS AND ADJUSTING**

- .1 Make adjustments and changes which become apparent as Cx proceeds.
- .2 Perform static and operational checks as applicable and as required.

### **3.16 DEFICIENCIES AND DEFECTS**

- .1 Correct deficiencies and defects found during start-up and Cx to satisfaction of Owner and the Consultant.
- .2 Report concerns, deficiencies, and defects affecting Cx to Owner and the Consultant in writing. Stop Cx until problems are rectified. Proceed only with written Acceptance from the Consultant.

### **3.17 CLOSEOUT ACTIVITIES**

- .1 Completion of Commissioning:
  - .1 Upon completion of Cx, leave systems in normal operating mode, unless otherwise agreed with the Consultant.

- .2 Except for warranty and seasonal verification activities specified in Cx Specifications, complete Cx before issuance of Substantial Completion Certificate of Completion.
- .3 Cx to be considered complete when contract Cx deliverables have been submitted and Accepted by the Consultant.
- .2 Activities Upon Completion of Commissioning:
  - .1 When changes are made to baseline components or system settings established during Cx process, provide updated Cx form for affected item.
- .3 Training:
  - .1 In accordance with Section 01 79 00- Demonstration and Training.

**END OF SECTION**

of Ontario.

- .7 Provide all other required Closeout Documentation in accordance with the Contract Documents.

## **1.05 OPERATIONS AND MAINTENANCE MANUAL**

### **.1 FORMAT**

- .1 Organize data as an instructional manual.
- .2 Binders: Vinyl, hard covered, 3 'D' ring, loose leaf [219 x 279] mm with spine and face pockets.
- .3 When multiple binders are used correlate data into related consistent groupings:
  - .1 Identify contents of each binder on spine.
- .4 Cover: Identify each binder with type or printed title 'Project Record Documents'; list title of Project and identify subject matter of contents.
- .5 Arrange content under section numbers and sequence of Table of Contents.
- .6 Provide tabbed fly leaf for each separate Product and system, with typed description of product and major component parts of equipment.
- .7 Text: manufacturer's printed data, or typewritten data.
- .8 Drawings: provide with reinforced punched binder tab.
  - .1 Bind in with text; fold larger drawings to size of text pages.
- .9 Provide CAD files in dwg format.

### **.2 CONTENTS**

- .1 Table of Contents for Each Volume: provide title of Project;
  - .1 Date of submission; names.
  - .2 Addresses, and telephone numbers of Consultant and Contractor with name of responsible parties.
  - .3 Schedule of Products and systems, indexed to content of volume.
- .2 Include the following contents:
  - .1 As-Built Record Drawings
  - .2 Product data, and samples.
  - .3 Site test records.
  - .4 Inspection certificates.
  - .5 Manufacturer's certificates.
  - .6 Inventory of spare parts, special tools and maintenance materials.
  - .7 Maintenance Management System (MMS) identification system used.

- .8 WHMIS information.
- .9 WHMIS Safety Data Sheets (SDS).
- .10 Electrical Panel inventory containing a detailed inventory of electrical circuitry for each panel board. Duplicate of inventory inside each panel.
- .11 Other documents as required and specified in other sections of Specifications.
- .12 Provide digital photos, if requested, for site records.
- .3 For each Product or system:
  - .1 List names, addresses and telephone numbers of Subcontractors and suppliers, including local source of supplies and replacement parts.
- .4 Product Data: mark each sheet to identify specific Products and component parts, and data applicable to installation; delete inapplicable information.
- .5 Provide a set of As-Built Record Drawings that accurately reflect as-constructed, as-built or as-fabricated Work and that have been sealed by a professional engineer licensed in the Province of Ontario.
  - .1 Provide hard copies within the operations and maintenance manuals and electronic copies in both native CAD format and PDF.
  - .2 Label each document "AS-BUILT RECORD" in neat, large, printed letters.
- .6 Drawings: supplement Product data to illustrate relations of component parts of equipment and systems, to show control and flow diagrams.
- .7 Typewritten Text: As required to supplement Product data.
  - .1 Provide logical sequence of instructions for each procedure, incorporating manufacturer's instructions.
- .7 Label record documents and file in accordance with section number listings.
- .8 Maintain record documents in clean, dry and legible condition.
  - .1 Do not use record documents for construction purposes.
- .9 Keep record documents and samples available for inspection by the Owner and the Consultant.
- .10 Specifications: mark each item to record actual construction, including:
  - 1. Manufacturer, trade name, and catalogue number of each Product actually installed particularly optional items and substitute items.
  - .2 Changes made by Addenda and Change Orders.
- .11 Training: Refer to Section 01 79 00 - Demonstration and Training.

### **.3 EQUIPMENT AND SYSTEMS**

- .1 For each item of equipment and each system include description of unit or system, and component parts.
- .2 Give function, normal operation characteristics and limiting conditions.
- .3 Include performance curves, with engineering data and tests, and complete nomenclature and commercial number of replaceable parts.

- .4 Panel board circuit directories: provide electrical service characteristics, controls, and communications.
- .5 Include installed colour coded wiring diagrams.
- .6 Operating Procedures: include start-up, break-in, and routine normal operating instructions and sequences.
  1. Include regulation, control, stopping, shut-down, and emergency instructions.
  2. Include summer, winter, and any special operating instructions.
- .7 Maintenance Requirements: include routine procedures and guide for trouble-shooting; disassembly, repair, and reassembly instructions; and alignment, adjusting, balancing, and checking instructions.
- .8 Provide servicing and lubrication schedule, and list of lubricants required.
- .9 Include manufacturer's printed operation and maintenance instructions.
- .10 Include sequence of operation by controls manufacturer.
- .11 Provide original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.
- .12 Provide installed control diagrams by controls manufacturer.
- .13 When applicable, provide Contractor's coordination drawings, with installed colour-coded piping diagrams.
- .14 When applicable, provide charts of valve tag numbers, with location and function of each valve, keyed to flow and control diagrams.
- .15 Provide list of original manufacturer's spare parts, current prices, and recommended quantities to be maintained in storage.
- .16 Include test and balancing reports as specified in Section 01 45 00 - Quality Control and Section 01 91 13 - General Commissioning Requirements.
- .17 Additional requirements: As specified in individual Specification sections.

#### **.4 MATERIALS AND FINISHES**

- .1 Building Products, applied materials, and finishes: Include Product data, with catalogue number, size, composition, and colour and texture designations.
- .1 Provide information for re-ordering custom manufactured products.
- .2 Instructions for cleaning agents and methods, precautions against detrimental agents and methods, and recommended schedule for cleaning and maintenance.
- .2 Moisture-protection and weather-exposed Products: Include manufacturer's recommendations for cleaning agents and methods, precautions against detrimental agents and methods, and recommended schedule for cleaning and maintenance.
- .3 Additional requirements: As specified in individual Specifications sections.

## **1.06 FINAL SURVEY**

- .1 Submit final site survey certificate in accordance with Section 01 71 00 - Examination and Preparation, certifying that elevations and locations of completed Work are in conformance, or non-conformance with Contract Documents.

## **1.07 MAINTENANCE MATERIALS**

- .1 Spare Parts:
  - .1 Provide spare parts, in quantities specified in individual Specification sections.
  - .2 Provide items of same manufacture and quality as items in Work.
  - .3 Deliver to site; place and store.
  - .4 Receive and catalogue items.
    - .1 Submit inventory listing to the Consultant.
    - .2 Include approved listings in operation & maintenance manual.
  - .5 Obtain receipt for delivered products and submit before final payment.
- .2 Extra Stock Materials:
  - .1 Provide maintenance and extra materials, in quantities specified in individual Specification sections.
  - .2 Provide items of same manufacture and quality as items in Work.
  - .3 Deliver to site; place and store.
  - .4 Receive and catalogue items.
    - .1 Submit inventory listing to the Consultant.
    - .2 Include approved listings in operation & maintenance manual.
  - .5 Obtain receipt for delivered Products and submit before final payment.
- .3 Special Tools:
  - .1 Provide special tools, in quantities specified in individual Specification section.
  - .2 Provide items with tags identifying their associated function and equipment.
  - .3 Deliver to site; place and store.
  - .4 Receive and catalogue items.
    - .1 Submit inventory listing to the Consultant.
    - .2 Include approved listings in operation & maintenance manual.

## **1.08 DELIVERY, STORAGE, AND HANDLING**

- .1 Store, at a location agreed with the Consultant, spare parts, maintenance materials, and special



tools in a manner to prevent damage or deterioration.

- .2 Store in original and undamaged condition with manufacturer's seal and labels intact.
- .3 Store components subject to damage from weather in weatherproof enclosures.
- .4 Store paints and freezable materials in a heated and ventilated room.
- .5 Remove and replace damaged Products at own expense to the satisfaction of the Owner and the Consultant.

#### **1.09 WARRANTIES AND BONDS**

- .1 Develop warranty management plan to contain information relevant to warranties and extended warranties.
- .2 Submit warranty management plan, twenty (20) Working Days before planned pre-warranty meeting, to the Consultant review and Acceptance.
- .3 Warranty management plan to include required actions and documents to assure that the Owner receives all warranties to which it is entitled.
- .4 Provide plan in narrative form and contain sufficient detail to make it suitable for use by future maintenance and repair personnel.
- .5 Submit, warranty information made available during construction phase with each application for payment.
- .6 Assemble approved information in binder, submit upon acceptance of Work and organize binder as follows:
  - .1 Separate each warranty or bond with index tab sheets keyed to Table of Contents listing.
  - .2 List Subcontractor, supplier, and manufacturer, with name, address, and telephone number of responsible principal.
  - .3 Obtain warranties and bonds, executed in duplicate by Subcontractors, suppliers, and manufacturers, within ten (10) days after completion of applicable item of work.
  - .4 Verify that documents are in proper form, contain full information, and are notarized.
  - .5 Co-execute Submittals when required.
  - .6 Retain warranties and bonds until time specified for submittal.
- .7 Except for items put into use with Owner's permission, leave date of beginning of time of warranty until Date of Early Occupancy or Ready-for-Takeover is verified.
- .8 Conduct joint 04 month and 09 month warranty inspection, measured from date determined above in clause 1.14.7.
- .9 Include information contained in warranty management plan as follows:
  - .1 Roles and responsibilities of personnel associated with warranty process, including points of contact and telephone numbers within the organizations of Contractors, Subcontractors, manufacturers, or suppliers involved.
  - .2 Listing and status of delivery of Certificates of Warranty for extended warranty items.
  - .3 Provide list for each warranted equipment, item, feature of construction or system indicating:

- .1 Name of item.
- .2 Model and serial numbers.
- .3 Location where installed.
- .4 Name and phone numbers of manufacturers or suppliers.
- .5 Names, addresses and telephone numbers of sources of spare parts.
- .6 Warranties and terms of warranty: include one-year overall warranty of construction. Indicate items that have extended warranties and show separate warranty expiration dates.
- .7 Cross-reference to warranty certificates as applicable.
- .8 Starting point and duration of warranty period.
- .9 Summary of maintenance procedures required to continue warranty in force.
- .10 Cross-Reference to specific pertinent Operation and Maintenance manuals.
- .11 Organization, names and phone numbers of persons to call for warranty service.
- .12 Typical response time and repair time expected for various warranted equipment.
- .4 Contractor's plans for attendance at 04 and 09 month post-construction warranty inspections.
- .5 Procedure and status of tagging of equipment covered by extended warranties.
- .6 Post copies of instructions near selected pieces of equipment where operation is critical for warranty and/or safety reasons.
- .10 Respond in timely manner to oral or written notification of required construction warranty repair work.
- .11 Written verification to follow oral instructions.

#### **1.10 WARRANTY TAGS**

- .1 Tag, at time of installation, each warranted item. Provide durable, oil- and water-resistant tag approved by Owner.
- .2 Attach tags with copper wire and spray with waterproof silicone coating.
- .3 Leave date of Acceptance until Project is accepted for occupancy.
- .4 Indicate the following information on tag:
  - .1 Type of product/material.
  - .2 Model number.
  - .3 Serial number.
  - .4 Contract number.
  - .5 Warranty period.
  - .6 Inspector's signature.
  - .7 Construction Contractor.

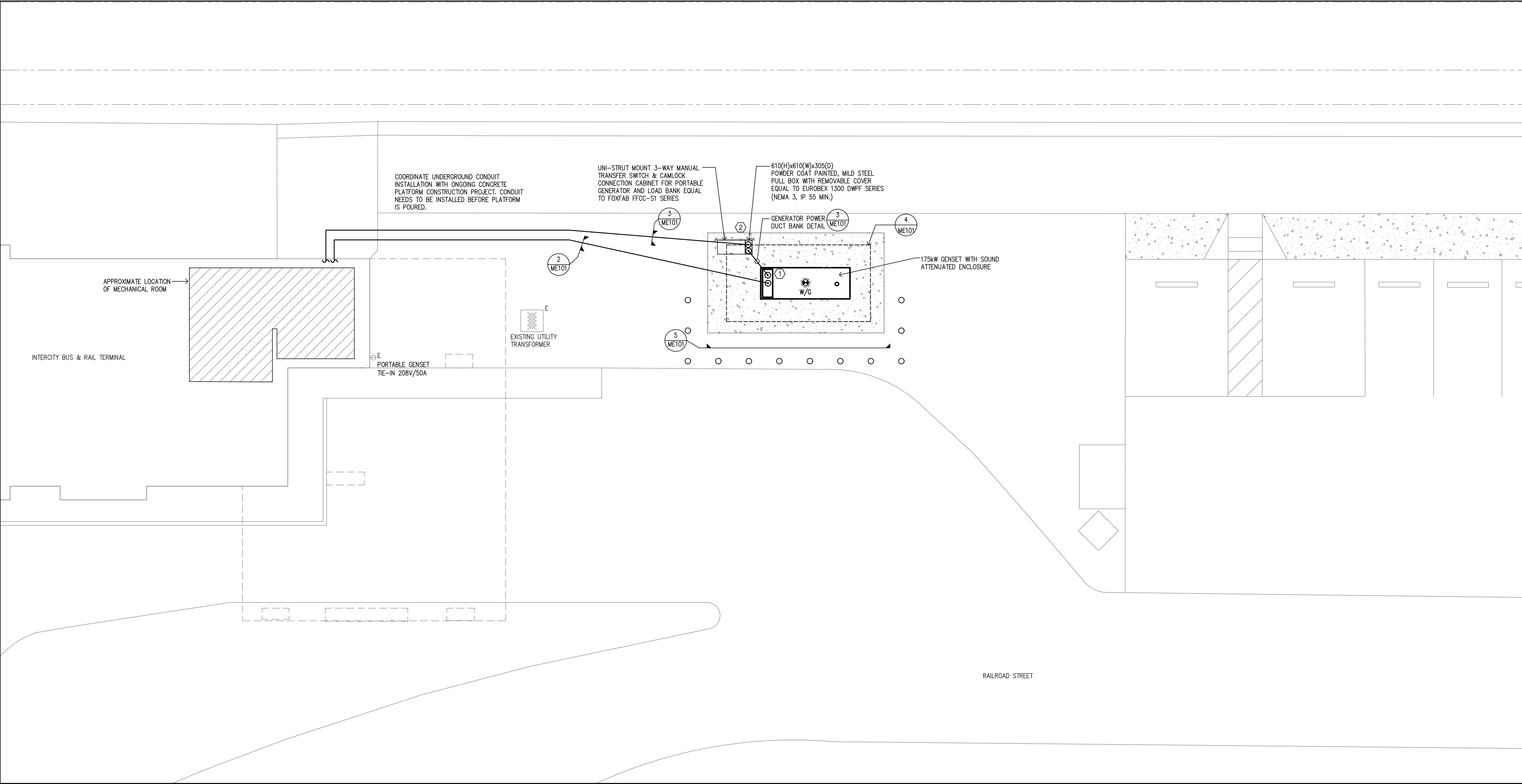
END OF SECTION

## APPENDIX H - DRAWINGS

### A. Issue for Tender Drawings

Please refer to the Issue for Tender Drawings, which are attached.

Drawing No.	Description	Date
<u><b>Piotrowski Consultants Limited</b></u>		
<i>Mechanical Drawings</i>		
ME101	Site Plan - Power - Partial Site Notes and Details	January 2025
ME102	Site Plan - General Site Plan and Details	
ME103	Site Plan - Mechanical - Partial Site Plan Notes and Details	
<i>Electrical Drawings</i>		
E101	Electrical Power - Floor Plans - Notes and Details	January 2025
E102	Electrical Power - Single Line Diagram	
<u><b>Gannett Fleming</b></u>		
E09-201	Englehart Station Electrical Site Plan	April 4, 2025
<u><b>RJC Engineers</b></u>		
SSK-1	Foundation Wall Openings in Mechanical Room	April 4, 2025



#### SITE PLAN GENERAL NOTES:

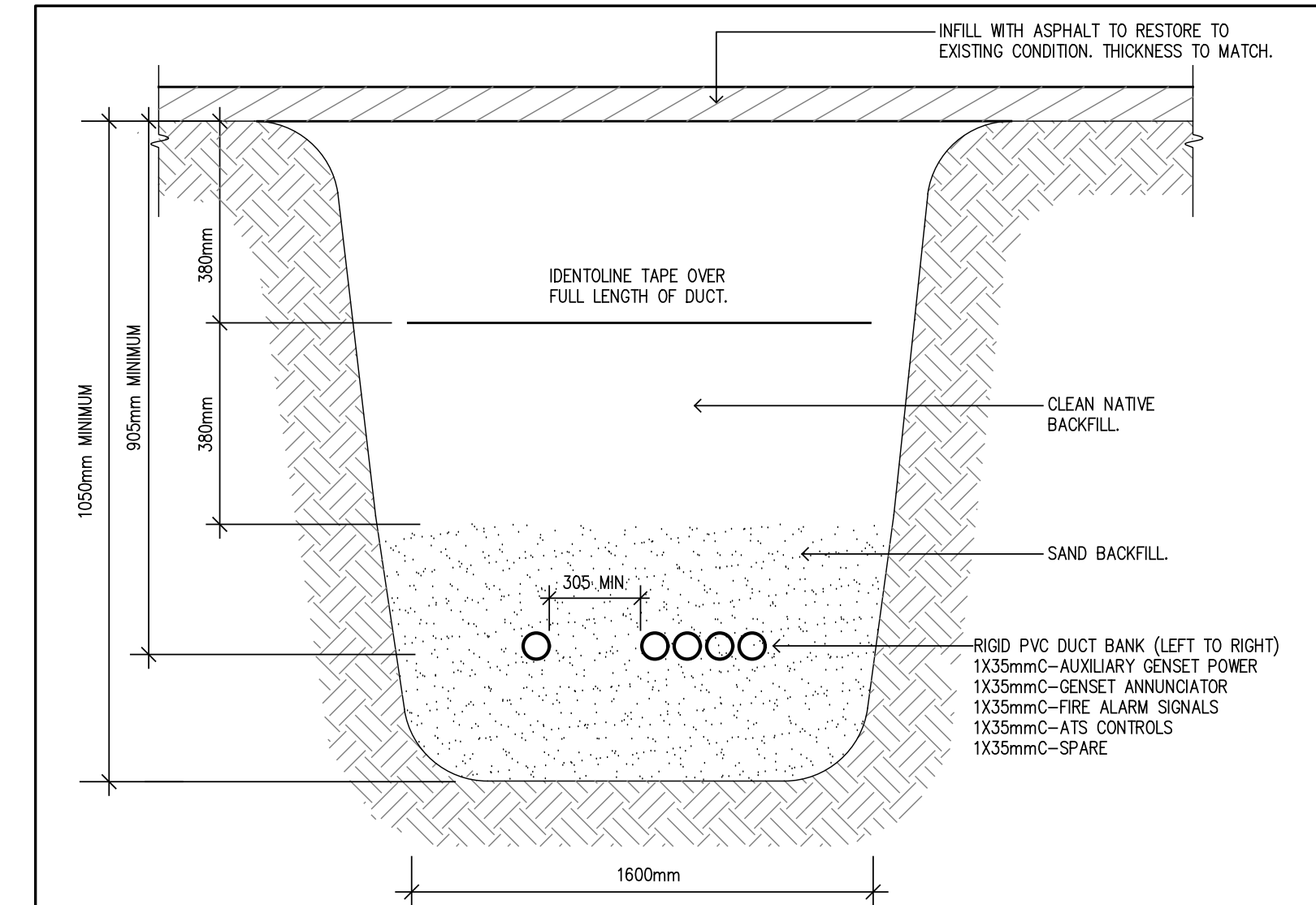
1. ALL ELECTRICAL WORK SHOWN IS BY ELECTRICAL CONTRACTOR, UNLESS OTHERWISE NOTED.
2. PROVIDE CONTINUOUS RED PLASTIC MARKER TAPE(S) WITH BLACK LETTERS IDENTIFYING THE POWER LINES UNDERGROUND INSTALLATION WITH THE FOLLOWING CRITERIA: PLACED APPROXIMATELY HALF WAY BETWEEN THE INSTALLATION AND GRADE LEVEL, INSTALLED COVERING THE WIDTH OF THE INSTALLATION AND WHERE MULTIPLE MARKER TAPES ARE REQUIRED TO COVER THE WIDTH OF THE INSTALLATION MARKER TAPES SHALL BE PERMITTED TO BE PLACED A MAXIMUM OF 600mm APART.
3. CONTRACTOR IS RESPONSIBLE FOR ALL UNDERGROUND LOCATES, FIBER OPTIC AND POWER CABLES ARE IN THE VACINITY OF THE AREA OF WORK.

#### SITE PLAN DRAWING NOTES:

- ① CONDUIT TO BE STUBBED UP INSIDE GENERATOR ENCLOSURE. SEE GENERATOR SHOP DRAWINGS FOR EXACT LOCATION & DIMENSIONS OF STUB UP AREAS.
- ② MOUNT CAMLOCK CONNECTION CABINET TO UNI-STRUT FRAME. VERTICAL MEMBERS OF UNI-STRUT FRAME SHALL CONSIST OF BACK TO BACK "C" CHANNELS. CHASE NIPPLE FROM BACK SIDE OF PULL BOX INTO SIDE OF CAMLOCK BOX.

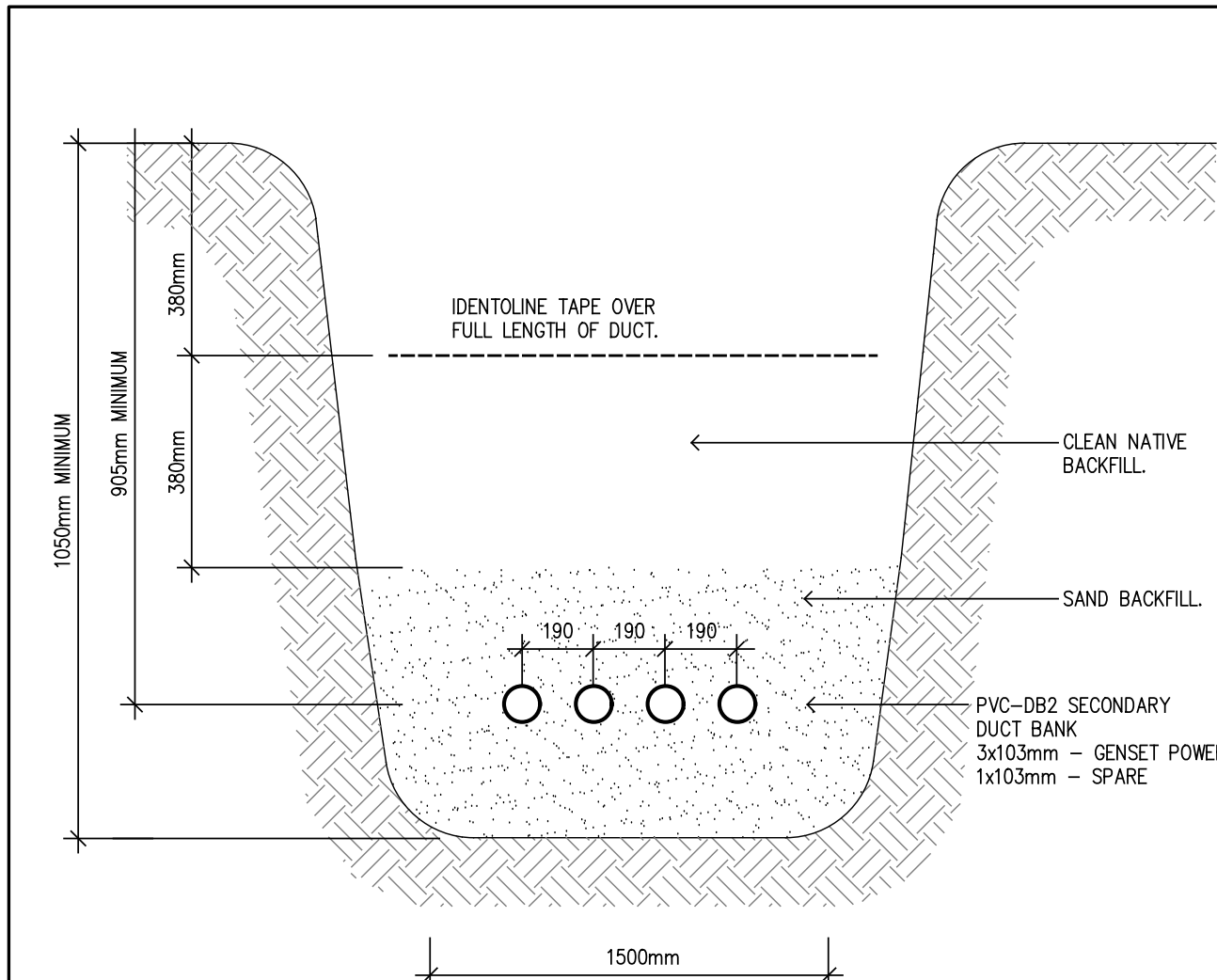
#### 1 Electrical - Site Plan

ME101 1:100



#### 2 Generator Duct Bank Detail

ME101 N.T.S.



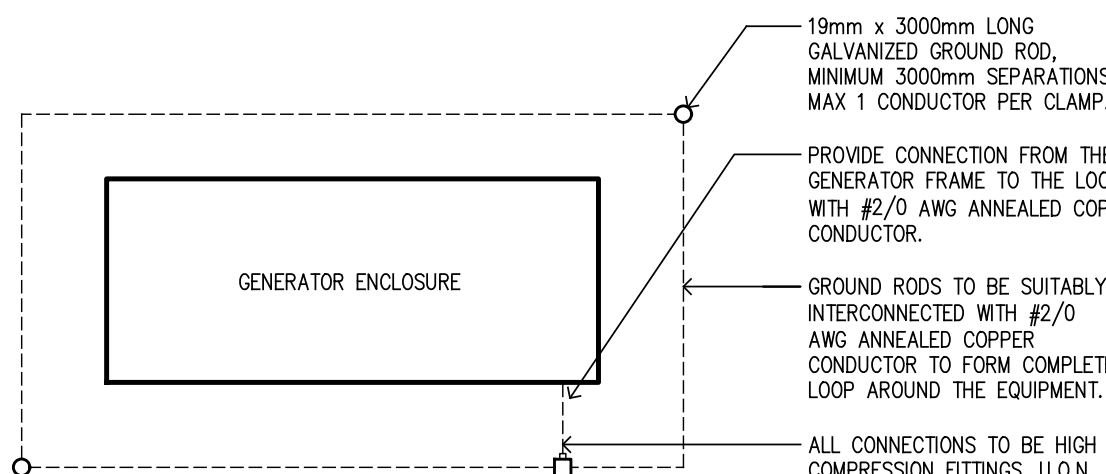
- NOTES:
1. CABLE INSTALLATION TO BE AS PER GESC DIAGRAM D11, DETAIL 3 WITH ONE ADDITIONAL DUCT.
  2. SPARE CONDUIT IS TO BE USED IN THE EVENT THAT AN EXISTING CABLE/CONDUIT IS DAMAGED.

#### 3 Generator Power Duct Bank Detail

ME101 N.T.S.

#### DETAIL NOTES:

1. GENERATOR NEUTRAL TO BE FLOATING. PROVIDE #2/0 AWG BONDING CONDUCTOR FROM MAIN SERVICE GROUNDING CONDUCTOR TO BOND FRAME, GROUND RODS, ALL NON-ELECTRICAL METAL COMPONENTS WITHIN GENERATOR AREA AND ALL OTHER REQUIREMENTS TO SATISFACTION OF ESA INSPECTOR.
2. EXACT SIZE AND CONFIGURATION OF PAD TO BE VERIFIED WITH GENERATOR SHOP DRAWINGS.
3. PROVIDE #2/0 AWG COPPER CONDUCTORS FROM GENERATOR GROUNDING LOOP TO ALL METAL COMPONENTS AND EQUIPMENT WITHIN 2 METERS OF GENERATOR INCLUDING BOLLARDS. PROVIDE GROUNDING LUGS / CONNECTIONS AS REQUIRED.
4. PROVIDE LABEL ON GENERATOR CONTROL PANEL INDICATING "GENERATOR HAS FLOATING NEUTRAL".
5. PROVIDE LABEL ON MAIN SERVICE DISCONNECT INDICATING "THE NEUTRAL IS USED BY THE STAND-BY GENERATOR FOR GROUNDING AND MAY BE CARRYING CURRENT. DO NOT DISCONNECT ANY SYSTEM NEUTRAL WHEN THE STAND-BY SYSTEM OR NORMAL SYSTEM IS OPERATING".

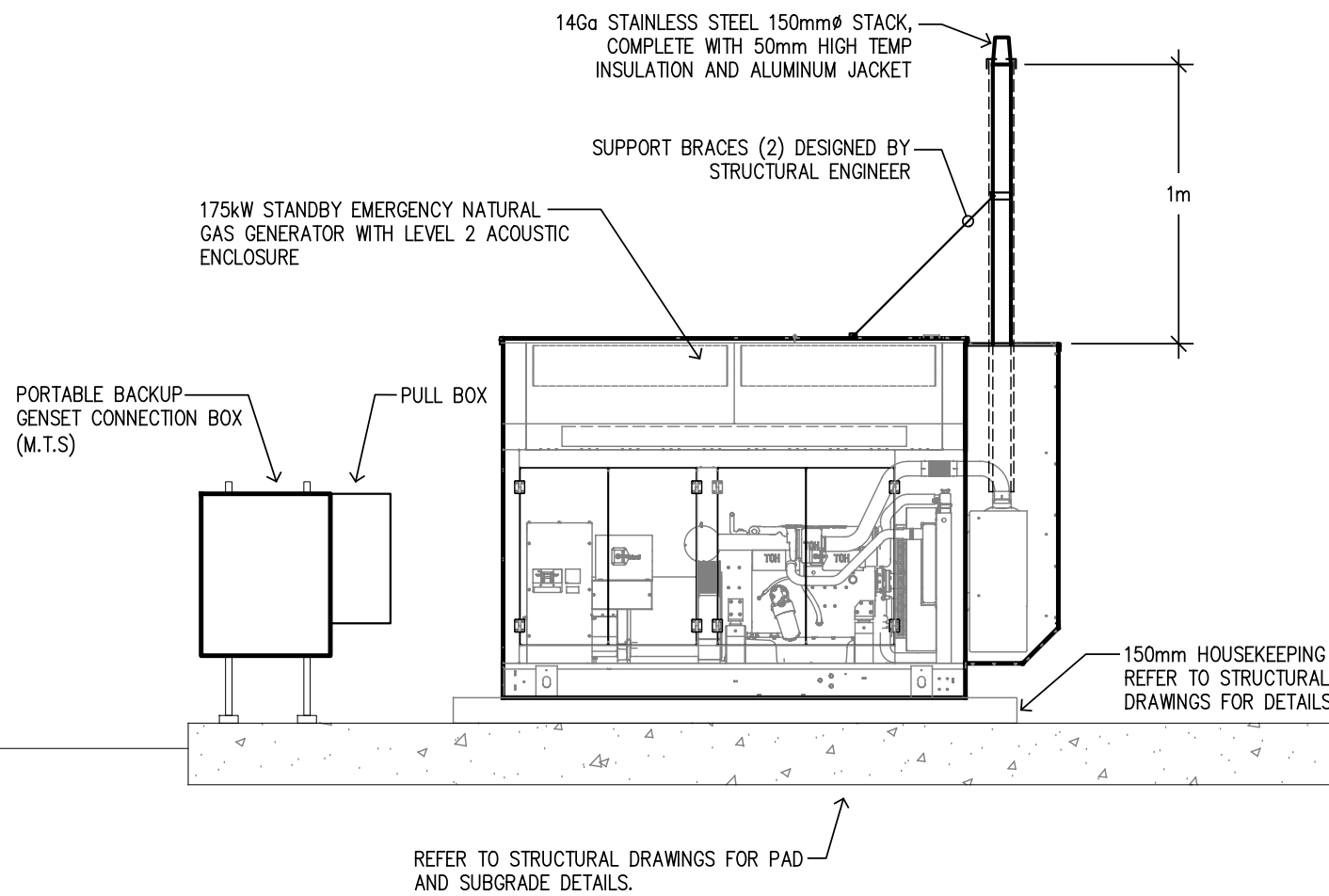


#### 4 Generator Grounding Detail

ME101 N.T.S.

#### GENERAL NOTES:

1. REFER TO GENSET INSTALLATION INSTRUCTIONS FOR MOUNTING FOOTPRINT AND STUB UP INFORMATION.
2. BOTTOM OF GENERATOR SET MUST BE CLOSED TO PREVENT PEST INTRUSION AND RECIRCULATION OF DISCHARGE AIR AND/OR IMPROPER COOLING AIR FLOW.



#### 5 Emergency Generator - Elevation

ME101 N.T.S.

1. ISSUED FOR TENDER 2025/02/14

revision date

the Contractor shall check and verify all dimensions before proceeding with the work

A detail no.  
B sheet no. where detailed

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project  
ONTARIO NORTHLAND  
ENGLEHART STATION  
GENERATOR

ENGLEHART ONTARIO

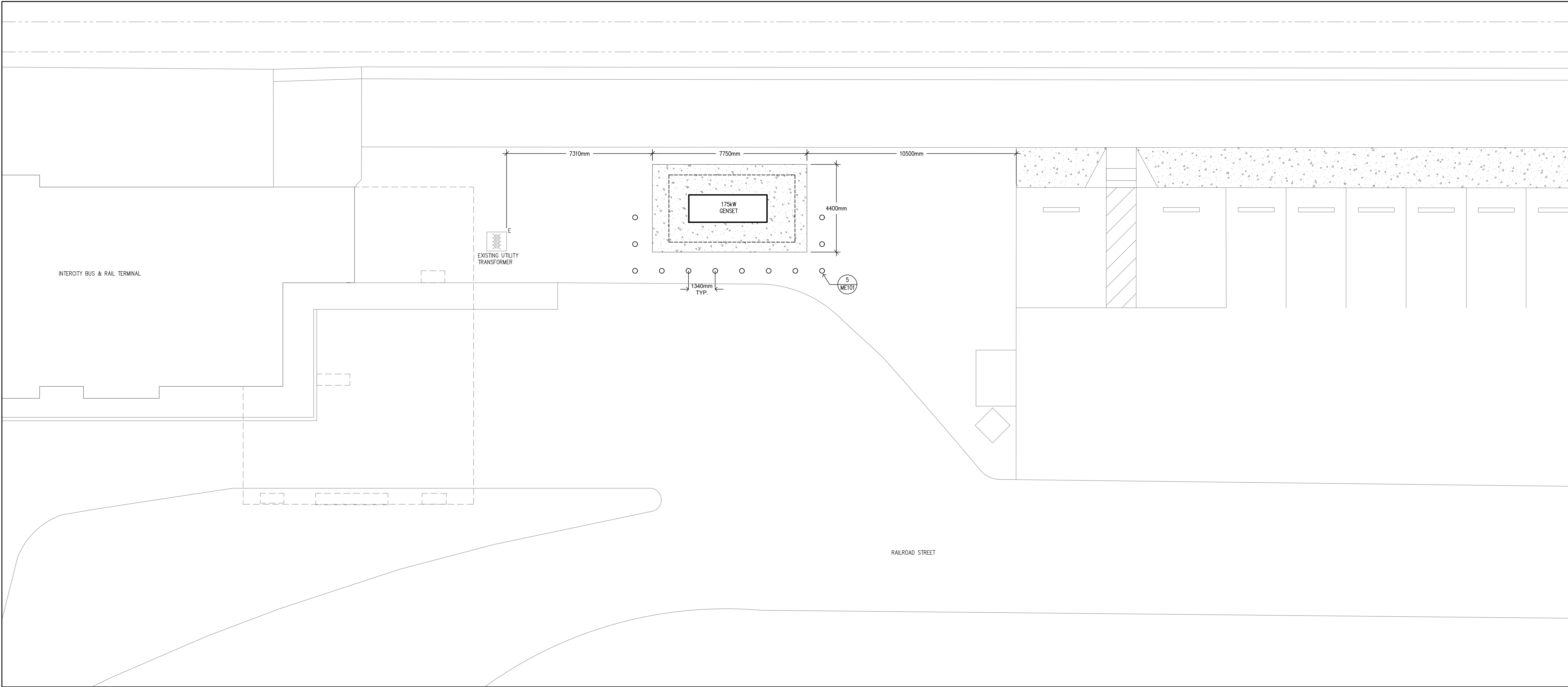
title  
SITE PLAN  
POWER  
PARTIAL SITE  
NOTES AND DETAILS

drawn by: EH date: JANUARY 2025

checked by: RM project no: 6731

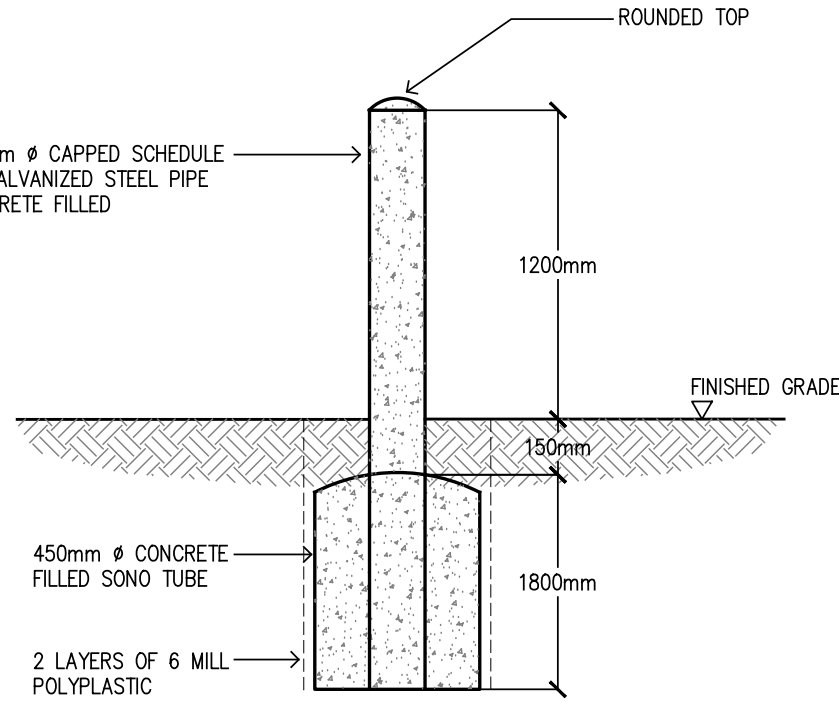
scale: AS NOTED dwg no: ME101

plotted: February 13, 2025



1 General - Site Plan  
ME102 1:100

- DETAIL NOTE:**
- BOLLARDS TO BE INSTALLED AT A DISTANCE OF NOT MORE THAN 1340mm O/C AND NOT LESS THAN 1000mm FROM GENSET.
  - BOLLARDS SHALL BE COMPLETE WITH HDPE COVER, YELLOW IN COLOUR.



2 Bollard Detail  
ME102 N.T.S.

1. ISSUED FOR TENDER	2025/02/14
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revision	date
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project  
ONTARIO NORTHLAND  
ENGLEHART STATION  
GENERATOR

ENGLEHART ONTARIO

title  
SITE PLAN  
GENERAL SITE PLAN  
AND DETAILS

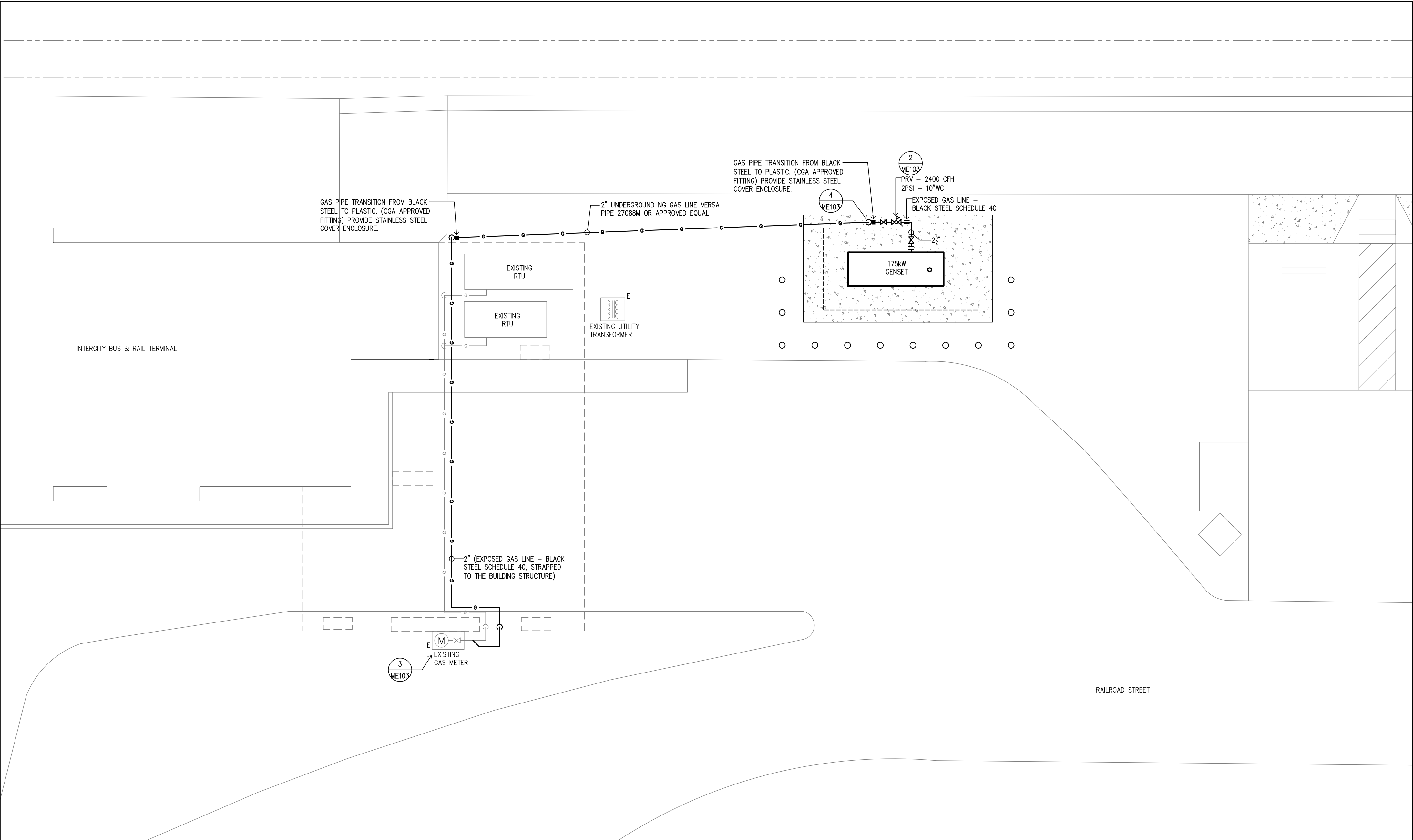
drawn by: EH	date: JANUARY 2025
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checked by: RM	project no: 6731
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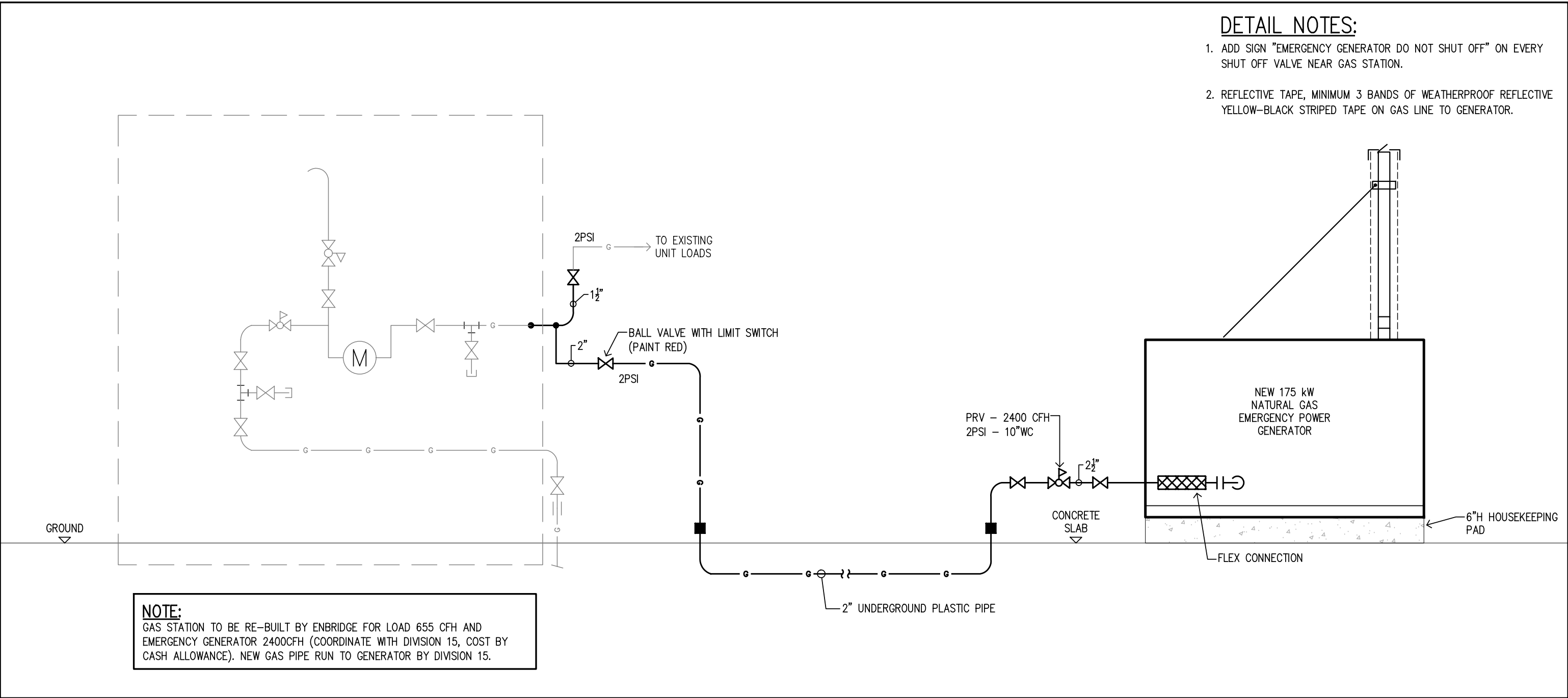
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plotted: February 13, 2025	
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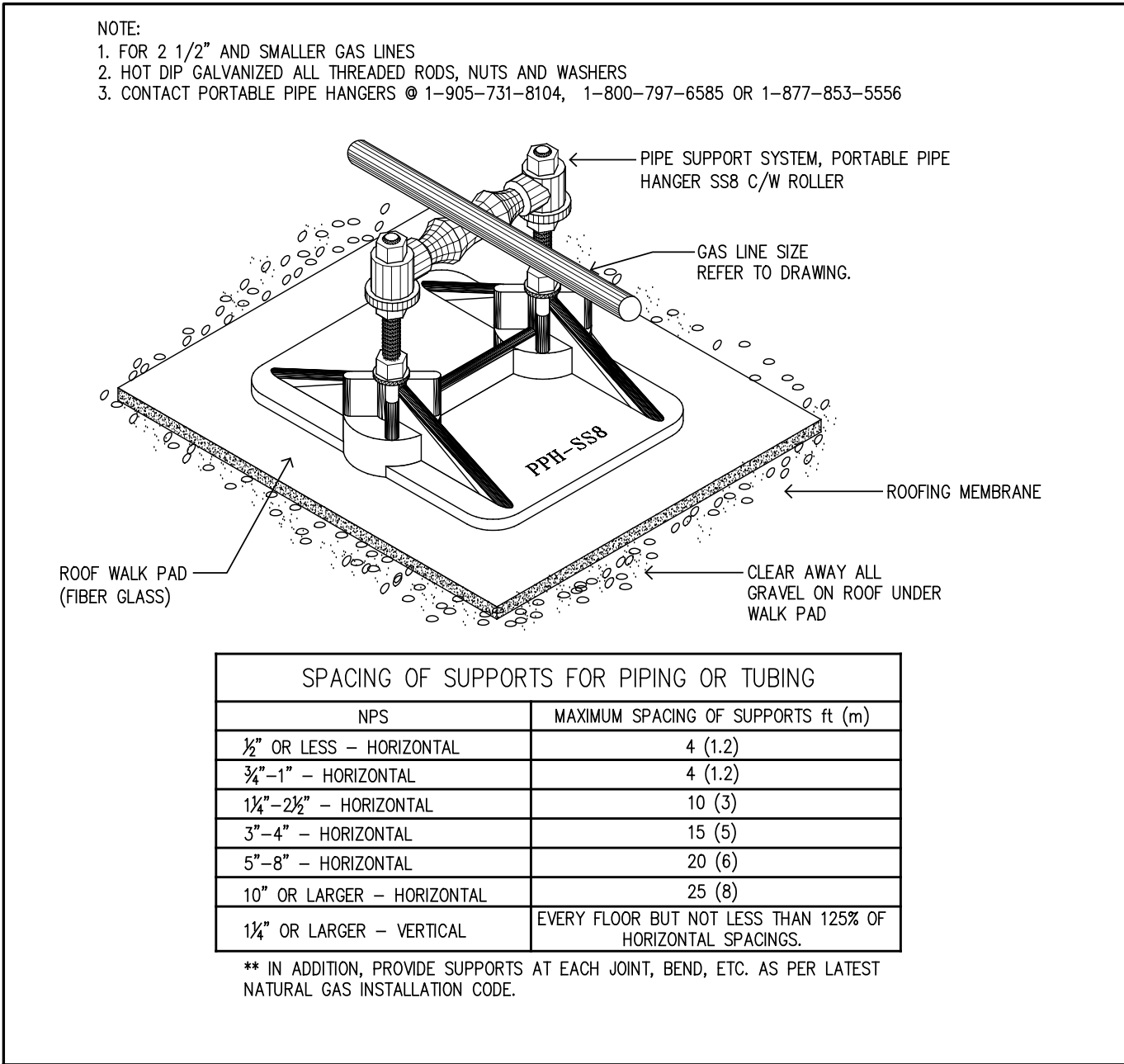
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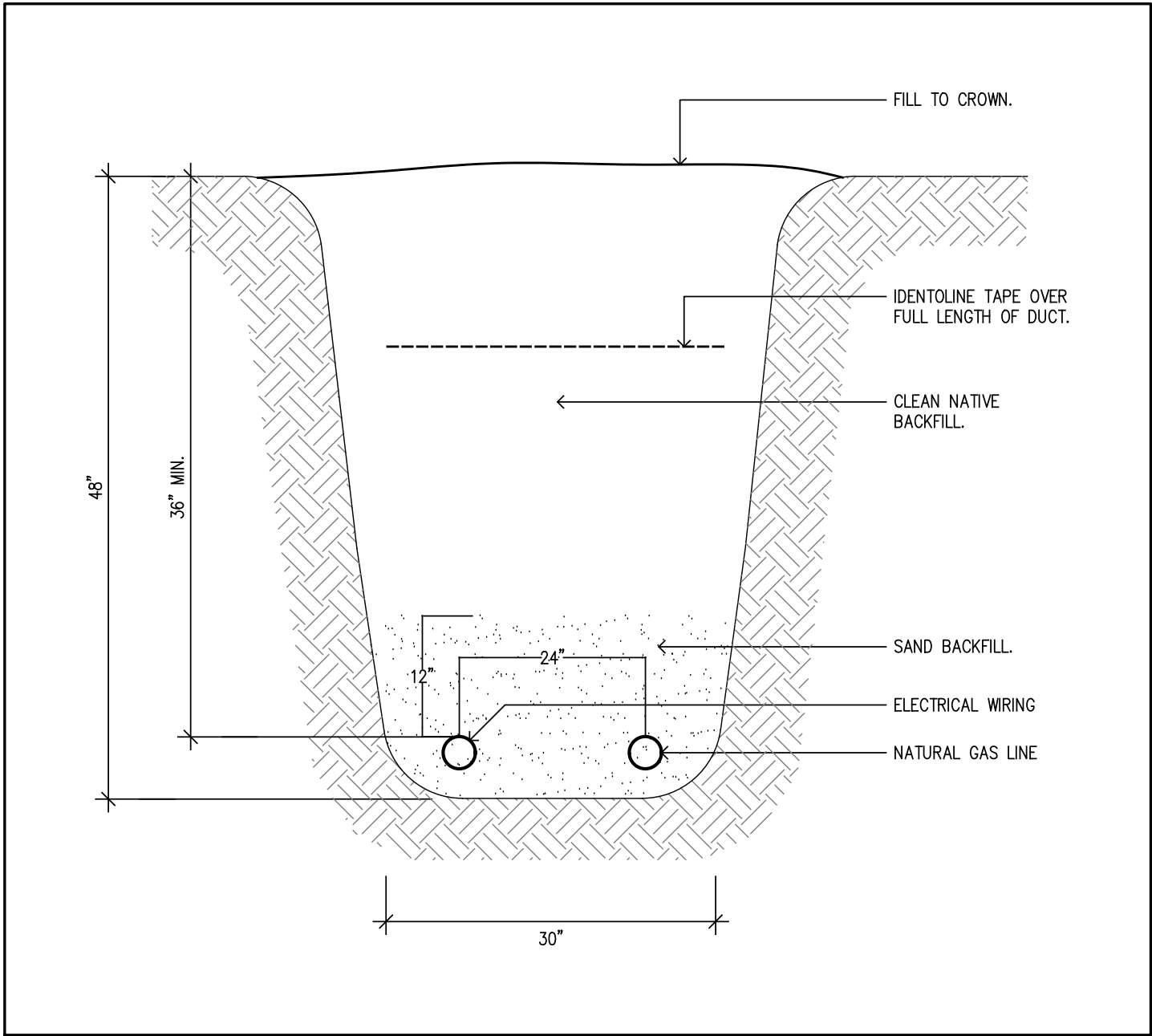
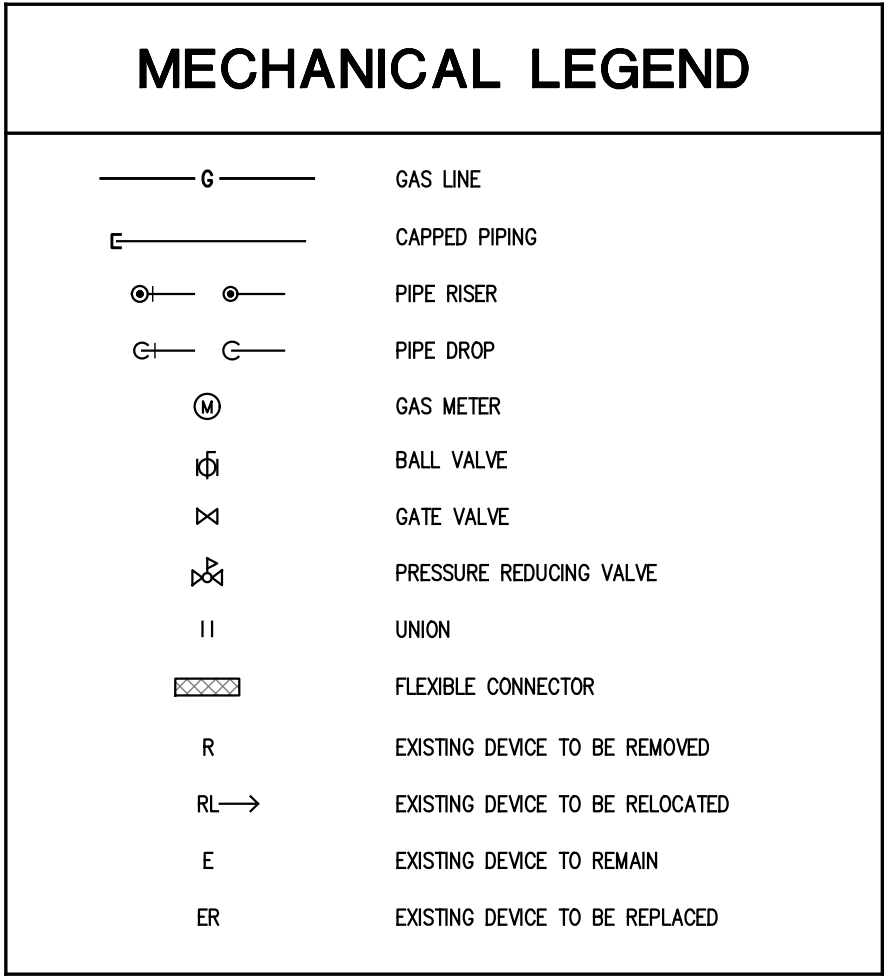
1 Mechanical - Site Plan  
ME103 1:100



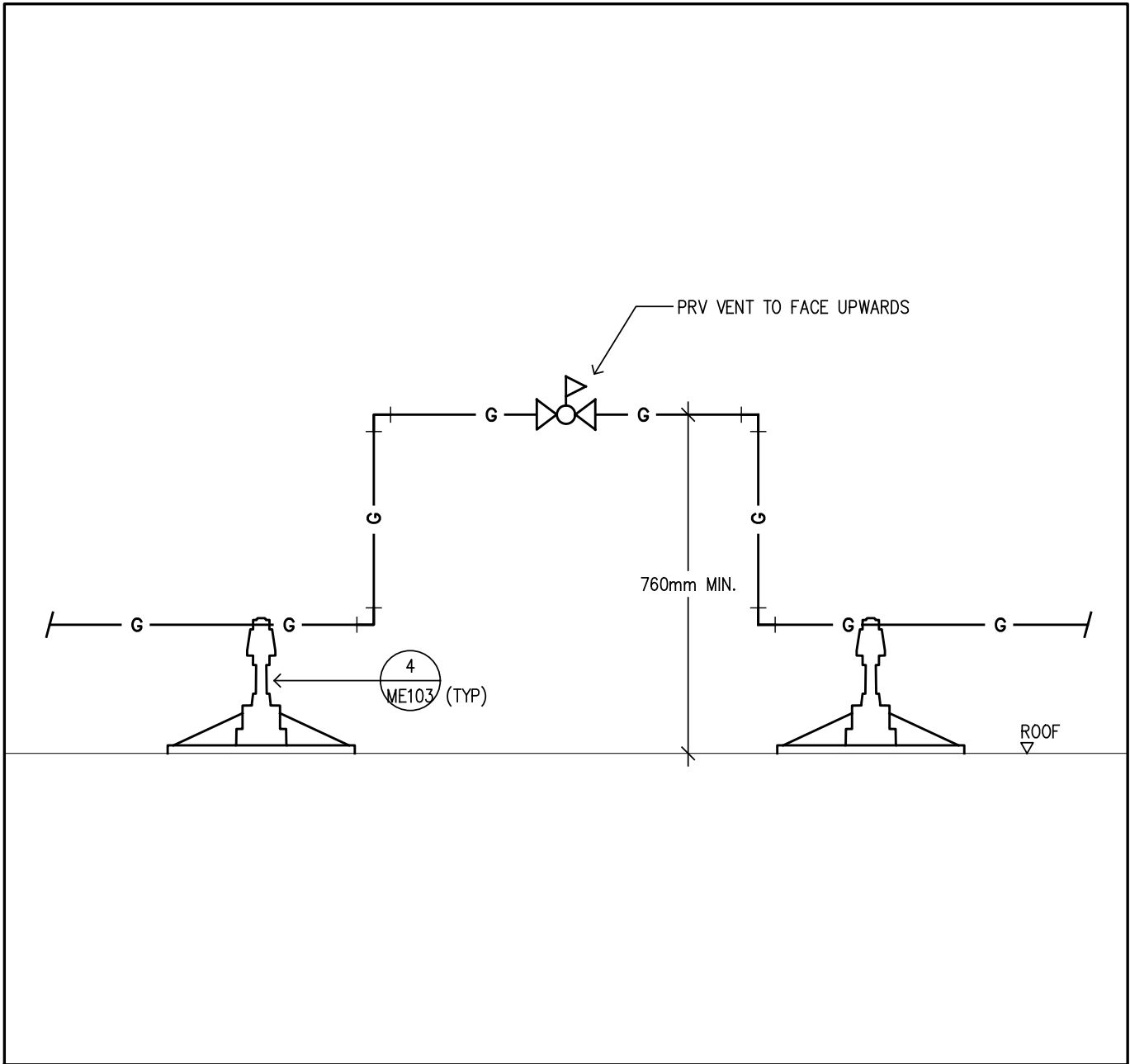
3 Natural Gas Generator - Installation Detail  
M103 N.T.S.



4 Gas Line Installation Detail  
ME103 N.T.S.



2 Underground Gas Line and Electrical Wiring Installation Detail  
ME103 N.T.S.



5 PRV Installation Detail - Typical  
ME103 N.T.S.

1. ISSUED FOR TENDER	2025/02/14
revision	date

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project  
ONTARIO NORTHLAND  
ENGLEHART STATION  
GENERATOR

ENGLEHART ONTARIO

title  
SITE PLAN  
MECHANICAL  
PARTIAL SITE PLAN  
NOTES AND DETAILS

drawn by:  
EH

date:  
JANUARY 2025

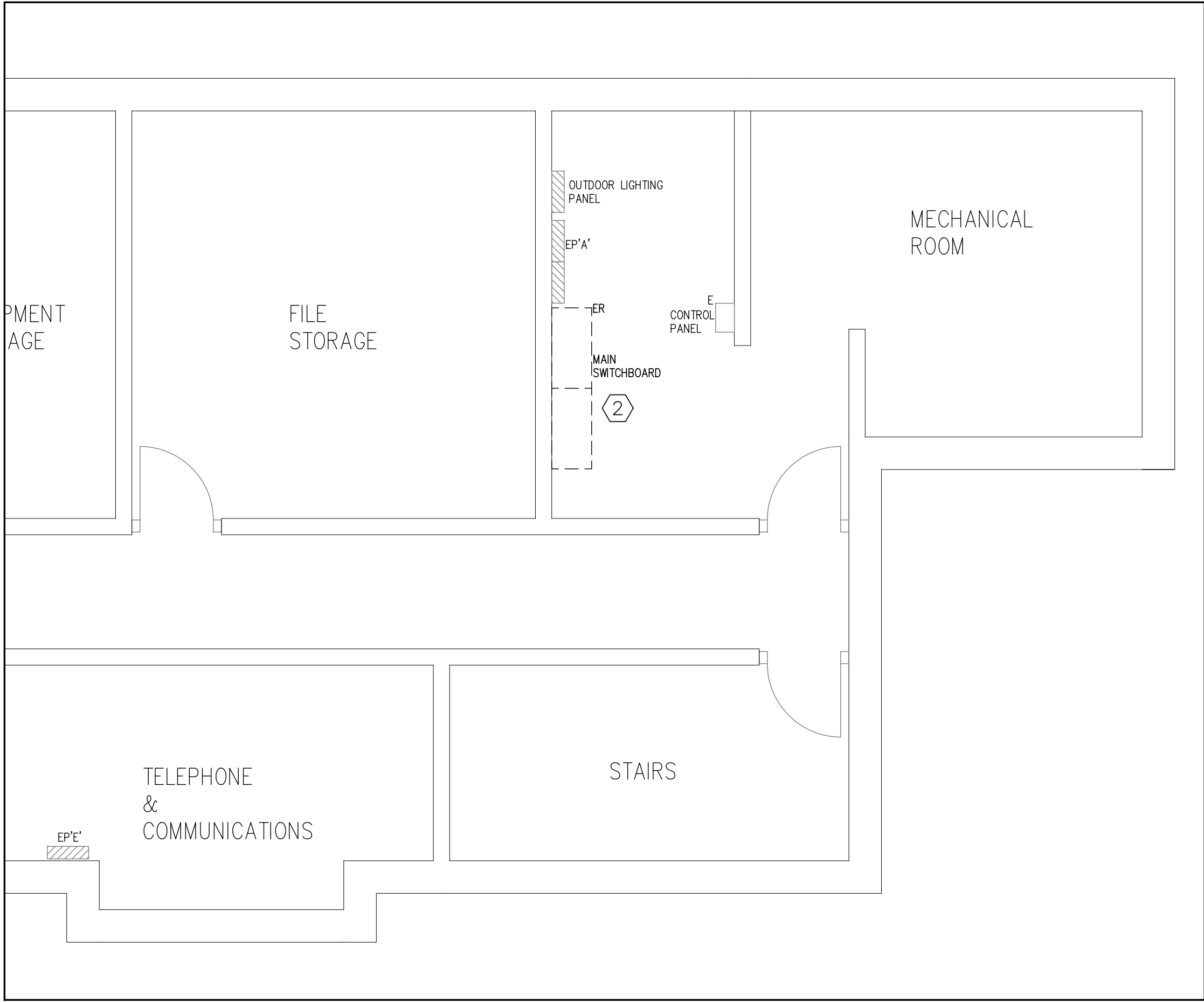
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RM

project no:  
6731

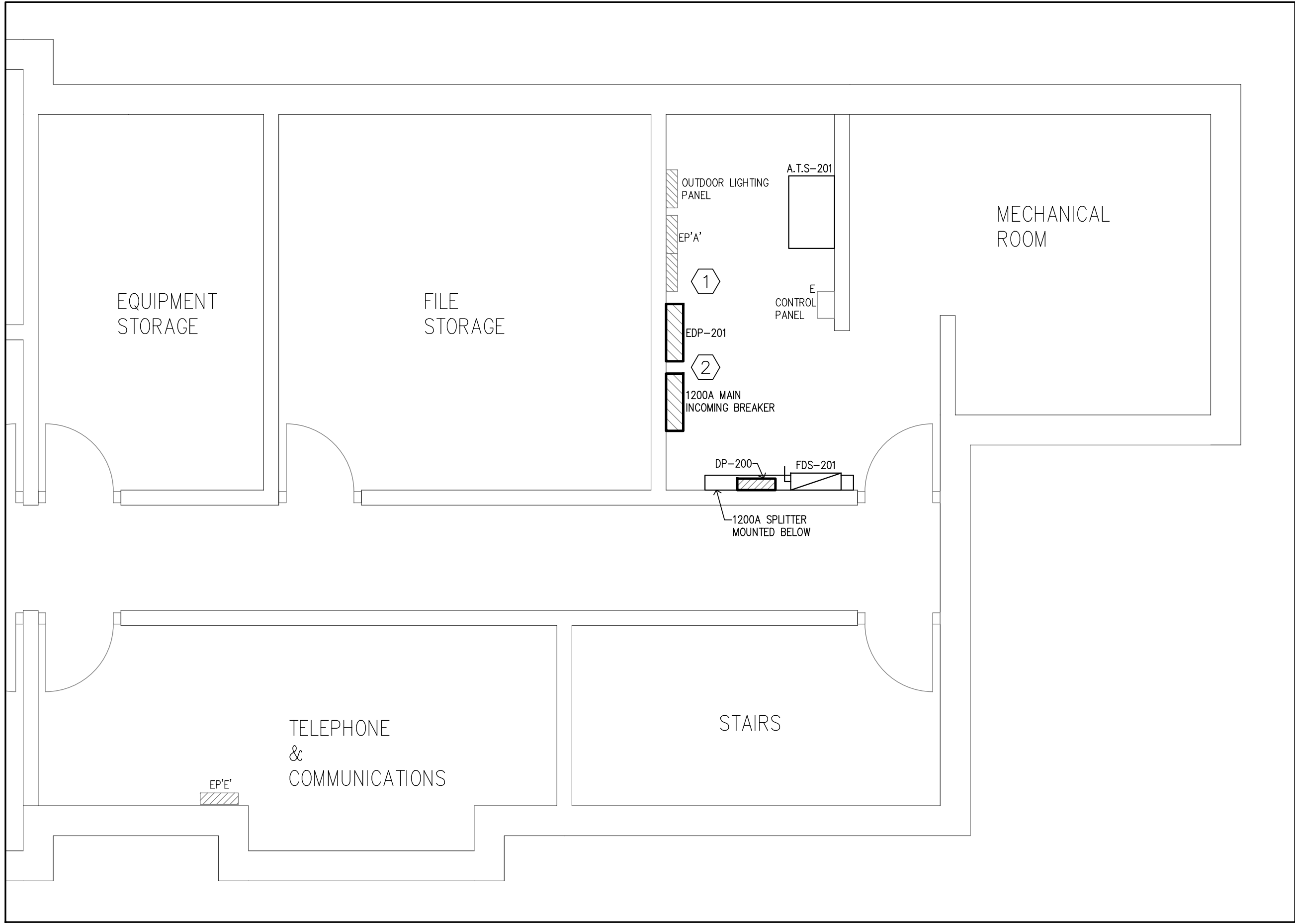
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**ME103**

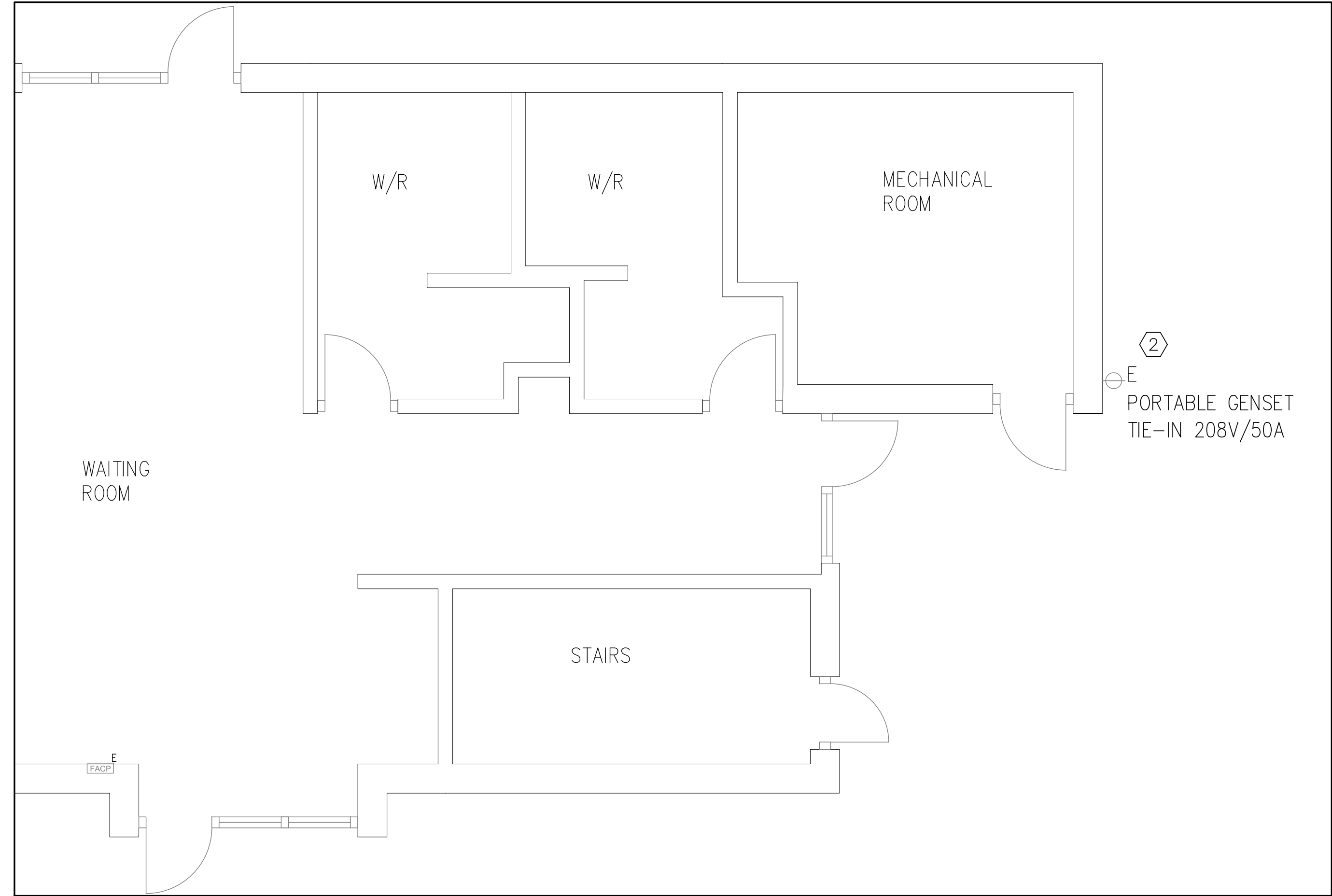
plotted:  
February 13, 2025



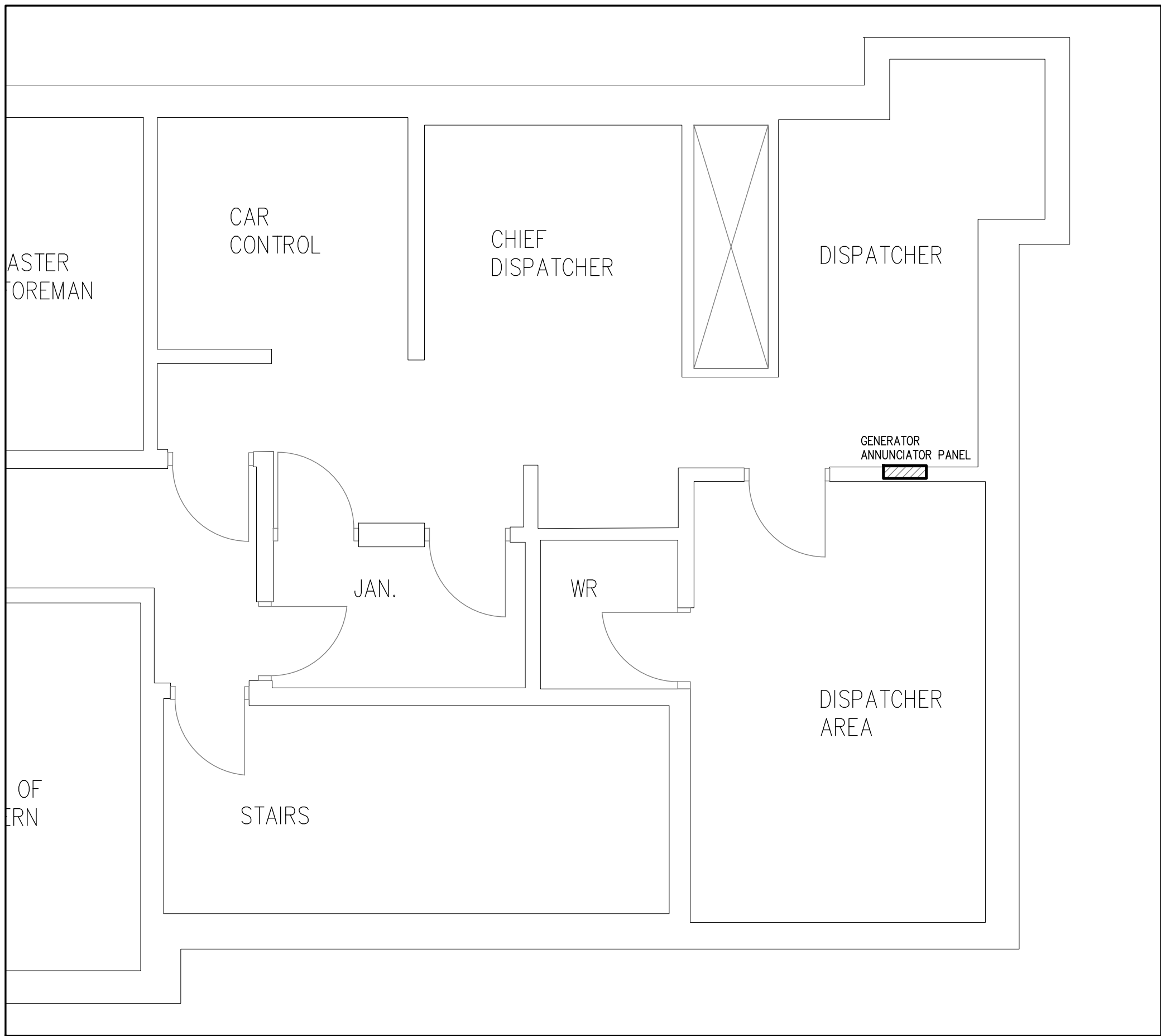
1 Power - Partial Basement Floor Plan - Removals  
E101 1:50



2 Power - Partial Basement Floor Plan - Proposed  
E101 1:50



3 Power - Partial Main Floor Plan  
E101 1:50



4 Power - Partial Second Floor Plan  
E101 1:50

**ELECTRICAL GENERAL NOTES:**

1. ENTIRE INSTALLATION SHALL BE IN ACCORDANCE WITH THE ONTARIO ELECTRICAL SAFETY CODE AND CSA B139.
2. ELECTRICAL CONTRACTOR IS TO OBTAIN ALL APPROVALS FROM LOCAL ELECTRICAL SAFETY AUTHORITY PRIOR TO COMMENCING WORK.
3. ALL DEVICES SHOWN ARE NEW, UNLESS OTHERWISE NOTED.
4. FIRE STOP ALL PENETRATIONS THRU FIRE RATED ASSEMBLIES.
5. ALL UNUSED WIRING SHALL BE PROPERLY TERMINATED, OR REMOVED. WIRING THAT CANNOT BE REMOVED AND IS CONCEALED AND INACCESSIBLE MUST BE CUT OFF WHERE EXPOSED (SO AS TO BE TOO SHORT TO BE REUSED) AND BE MADE SAFE.
6. ALL WIRING TO BE CONCEALED WHERE POSSIBLE. IF NOT POSSIBLE, PROVIDE SURFACE MOUNTED METAL RACEWAY AND WATCHING SURFACE MOUNTED BOX. RACEWAY SHALL BE RAN AS NEAT AS POSSIBLE, PARALLEL / PERPENDICULAR TO BUILDING LINES. CONFIRM INSTALLATION DETAILS PRIOR TO ROUGH-IN.

**POWER GENERAL NOTES:**

1. PROVIDE BONDING CONDUCTOR AND CONNECTION (AS PER OESC) FOR ALL PERMANENTLY CONNECTED EQUIPMENT. COORDINATE EXACT REQUIREMENTS ON SITE.
2. ENSURE A MINIMUM OF 1M CLEARANCE IS MAINTAINED IN FRONT OF ALL PANELS AND DISCONNECT SWITCHES.

**FIRE ALARM GENERAL NOTES:**

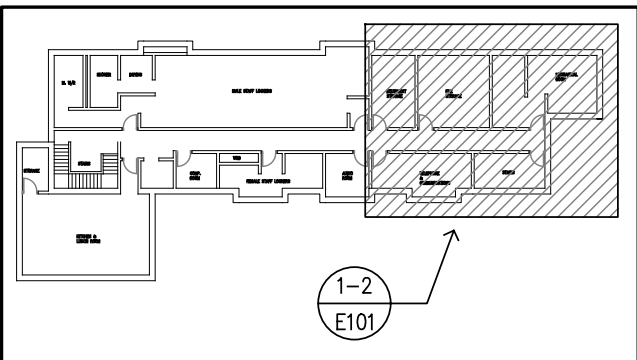
1. FIRE ALARM WIRING TO BE INSTALLED IN CONDUIT. REFER TO SPECIFICATIONS FOR ALL INSTALLATION AND WIRING REQUIREMENTS.
2. ALL NEW CONDUIT AND JUNCTION BOXES SHALL BE IDENTIFIED IN RED AS PER SPECIFICATIONS.
3. PROVIDE FIRE ALARM DEVICES AS SHOWN AND PROVIDE PARTIAL FIRE ALARM SYSTEM VERIFICATION (TO CAN/ULC-5537 STANDARDS) UPON COMPLETION.
4. ALL FIELD WIRING SHALL BE IN ACCORDANCE WITH CSA C22.1, CANADIAN ELECTRICAL CODE, PART 1, SECTION 12 & 32, THE MANUFACTURER'S PUBLISHED INSTALLATION INSTRUCTIONS AND THE REQUIREMENTS OF CAN/ULC-5524, CLAUSE 4.4.

**ELECTRICAL DRAWING NOTES:**

- ① PROVIDE A 60A/2P BREAKER IN LOCAL PANEL EP'A' AND FEED GENERATOR SHORE POWER WITH A 3/16-27mmC. EXISTING PANEL EP'A' IS EATON PRL1.
- ② TEMPORARY BACK UP POWER FOR PANEL EP 'E' IS REQUIRED WHEN SHUTTING DOWN AND SWITCHING OUT THE MAIN SWITCHBOARD. A PORTABLE GENERATOR RECEPTACLE IS AVAILABLE ON THE EXTERIOR OF THE BUILDING FOR THIS PURPOSE. CONTRACTOR TO COORDINATE WITH OWNER TO HAVE OWNER'S PORTABLE GENERATOR CONNECTED TO EXTERIOR RECEPTACLE FOR TEMPORARY POWER TO THE RAILWAY SWITCHING CONTROL CENTRE.

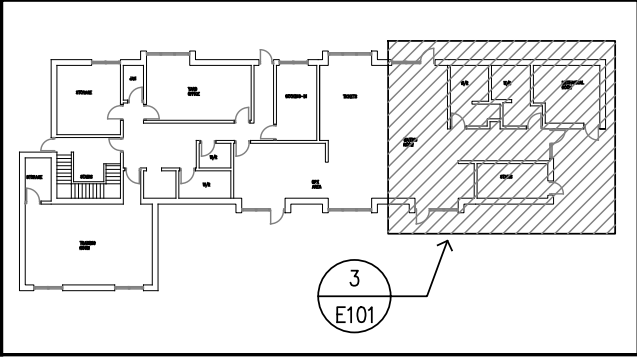
**ELECTRICAL LEGEND**

	HEAT DETECTOR- 90°C AND R.O.R.
	DEVICE WITH WIRE GUARD
	FIRE ALARM CONTROL PANEL
	SAFETY DISCONNECT SWITCH - FUSED
	TRANSFORMER
	ELECTRICAL PANEL, FLUSH MOUNTED (DESIGNATION AS SHOWN)
	ELECTRICAL PANEL, SURFACE MOUNTED (DESIGNATION AS SHOWN)
	DUPLEX RECEPTACLE 5-20R 20A T-SLOT
	SPECIAL RECEPTACLE AS NOTED
	ELECTRICAL CONDUIT RISER
	ELECTRICAL CONDUIT DROP
	EXISTING DEVICE TO BE REMOVED
	EXISTING DEVICE TO REMAIN
	EXISTING DEVICE TO BE REPLACED WITH NEW



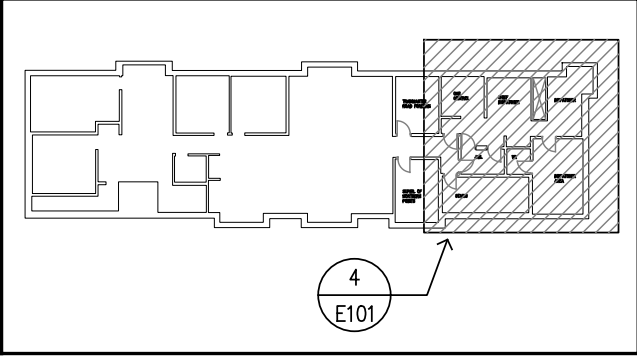
**BASEMENT KEY PLAN**

N.T.S



**MAIN FLOOR KEY PLAN**

N.T.S



**SECOND FLOOR KEY PLAN**

N.T.S

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revision	date

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project  
**ONTARIO NORTHLAND  
ENGLEHART STATION  
GENERATOR**

ENGLEHART ONTARIO

title  
**ELECTRICAL  
POWER  
FLOOR PLANS  
NOTES AND DETAILS**

drawn by: EH	date: JANUARY 2025
checked by: RM	project no: 6731
scale: AS NOTED	dwg no: <b>E101</b>
plotted: February 13, 2025	

sheet size - A3 (297 x 420)





**ONTARIO NORTHLAND  
ENGLEHART STATION GENERATOR  
1 RAILWAY STREET, ENGLEHART, ON  
PROJECT NO. 6731  
FEBRUARY 2025**

Piotrowski Consultants Ltd.  
1820 Bond Street  
North Bay, ON P1B 4V6

## I N D E X

NEW SECTION	DESCRIPTION	PAGES
21 05 01	Mechanical General Requirements	7
23 05 29	Pipe Hangers and Supports	4
23 11 23	Pipes, Valves and Fittings – Gas	4
26 05 00	General Electrical Requirements	7
26 05 20	Wire and Box Connections 0 - 1000 V	2
26 05 21	Wires and Cables 0 - 1000 V	3
26 05 28	Grounding - Secondary	3
26 05 29	Hangers and Supports for Electrical Systems	2
26 05 32	Outlet Boxes, Conduit Boxes and Fittings	2
26 05 34	Conduits, Conduit Fastenings and Conduit Fittings	4
26 05 44	Installation of Cables in Trenches	4
26 12 20	Load Bank Connection Cabinet	4
26 24 02	Service Entrance Board	4
26 24 17	Panelboards – Breaker Type	4
26 28 21	Moulded Case Circuit Breakers	1
26 28 23	Disconnect Switches – Fused and Non-Fused Up To 1000V	2
26 32 14	Power Generation – Natural Gas	19
26 36 23	Automatic Load Transfer Equipment	6

**PART 1- GENERAL****1.1. GENERAL**

1. This section covers items common to all sections of Division 21, 23 and is supplementary to requirements of Division 1.
2. Division 1, General Requirements is part of this Section and shall apply as if repeated here.
3. Coordinate all requirements with General Contractor.

**1.2. CODE OF STANDARDS**

1. Do complete installation in compliance with latest editions and all amendments of the following Codes and Standards. Where conflicts in requirements occur, the higher standard shall apply:
  1. ASHRAE
  2. SMACNA
  3. CSA
  4. Ontario Building Code
  5. All governing municipal requirements
  6. ULC

**1.3. DEFINITIONS**

1. "Provide" means supply and install.
2. "Approved" means approved in writing by Consultant.
3. "Consultant" means designated qualified professional engineer acting as representative of Owner for monitoring of work.
4. "Manual" means Operations and Maintenance manual.

**1.4. CARE, OPERATION, START-UP AND INSTRUCTION TO OWNERS**

1. Provide certified personnel to instruct Owner of operation mechanical equipment. Provide maintenance specialist personnel to instruct on maintenance and adjustment of mechanical equipment and any changes or modification equipment must be under terms of guarantee.

2. Provide instruction during regular work hours prior to acceptance and turn over to Owner's staff for regular operation.
3. Provide these services for such period, and for as many visits as necessary to put equipment in operation, and ensure that operating personnel are conversant with all aspects of its care and operation.
4. Use operation and maintenance data manual for instruction purposes. On completion of instruction, turn three manuals over to the Owner.
5. Operation and maintenance manual to be approved by and final copies deposited with Consultant before final inspection.
6. Arrange and pay for services of manufacturer's factory service engineer to supervise start-up of installation, check, adjust, balance and calibrate components and instruct operating personnel.

#### **1.5. PERMITS, CERTIFICATES, FEES AND INSPECTIONS**

1. Submit to the Building Department the necessary number of drawings and specifications for examination prior to commencement of work to obtain a building/plumbing permit. Obtain and pay for all building/ permits. Include all costs in the tender price.
2. Submit Notice of Project to Ministry of Labour.
3. Notify Consultant of changes required by Building Department prior to making changes.
4. Notify Consultant upon completion of work.

#### **1.6. COORDINATION WITH EXISTING UTILITIES**

1. Before commencing any Work, the Contractor shall determine the locations of all underground utilities and structures indicated in or inferable from the Contract Documents, or that are inferable from an inspection of the Place of the Work.
2. All existing utilities are to be maintained and protected for the length of construction.
3. Contractor to notify consultant if any conflicts arise and allow for minimum 48 hours for consultants review.

#### **1.7. EQUIPMENT REQUIREMENTS AND INSTALLATION**

1. Permit equipment maintenance and disassembly by use of unions or flanges to minimize disturbance to connecting piping and duct systems and without interference from building structure or other equipment.
2. Provide accessible means for lubricating equipment including permanent lubricated "lifetime" bearings.

3. Pipe drain lines to drains.
4. Line-up equipment, rectangular cleanouts and similar items with building walls wherever possible.
5. Provide equipment commissioning and preliminary balancing and confirm the proper operation of all equipment and related systems.

#### **1.8. RESPONSIBILITY FOR TRIAL USAGE**

1. Obtain written permission to start and test permanent equipment and systems prior to acceptance by Consultant.
2. Consultant may use equipment and systems for testing.
3. Protect equipment and systems' openings from dirt, dust and other foreign materials during test usage.

#### **1.9. ELECTRICAL**

1. Division 23 shall supply and install motors, controls and control wiring, supply starters, switches and relays, for all motor driven equipment under Division 23. Starters, switches and relays shall be handed over to Division 26 for installation and wiring.
2. Wiring and controls for connections below 50 V, which are related to control systems are the responsibility of Division 23. Refer to Division 26 for quality of materials and workmanship.
  1. Control cables, type LVT, soft annealed copper conductors with thermoplastic insulation and colour coding. Installation in EMT conduit.
  2. Two conductors parallel with an overall thermoplastic jacket; three or more conductors twisted with an overall thermoplastic jacket.
  3. Cable to be installed in EMT conduit or if concealed in ceiling space to be plenum rated FT6 type.

#### **1.10. PIPE HANGERS AND SUPPORTS**

1. See Section 23 05 29 – Hangers and Supports.

#### **1.11. BUILDING PERMIT**

1. Prepare permit application and apply for building permit at local Building Department. Include all costs in tender price. Consultant will provide contract documents in PDF format, contractor responsible to produce hard copies.
2. Provide the following supplementary requirements to tests specified:

1. Give 48 h notice of date when tests will be made.
2. Do not insulate or conceal work until tested and approved.
3. Conduct tests in presence of Consultant.
4. Bear costs including retesting and make good.
5. Pipe pressure:
  1. Hydraulically test water supply systems at 1-1/2 times system operating pressure or minimum 1050 kPa (150 psig).
  2. Maintain test pressures without loss of 4 h unless otherwise specified.
  3. Record pressure test results, indicating:
    1. Portion of piping tested.
    2. Test pressure.
    3. Test duration.
    4. Results/Comments.
    5. Type of pipe.
    6. Type of system.
    7. Size of pipe.
  4. Submit results to Consultant.

#### **1.12. PAINTING**

1. Apply at least one coat of corrosion resistant primer paint to supports, and equipment fabricated from ferrous metals.
2. Restore to new condition, finishes which have been damaged too extensively to be merely primed and touched up.

#### **1.13. SPECIAL TOOLS**

1. Provide one set of special tools required to service equipment as recommended by manufacturers.

#### **1.14. CUTTING AND PATCHING**

1. All cutting and patching shall be by Division 2, coordinated by Division 23. Coordinate with

other trades. Notify Structural Engineer before cutting any structural members and obtain written permission.

#### **1.15. EXISTING SYSTEMS**

1. Before submitting tender price verify on job site location of all accessible existing systems affecting execution of this contract. Difficulties arising during construction will not be considered as grounds for additional payment.
2. Where work involves breaking into or connecting to existing systems, carry out work at times directed by governing authorities, with minimum of disturbance to pedestrian traffic.
3. Submit schedule to and obtain approval from Consultant for any shut down or closure of active service or facility. Adhere to approved schedule and provide notice to affected parties.
4. Where unknown services are encountered, immediately advise Consultant and confirm findings in writing.

#### **1.16. INSTRUCTIONS TO OWNERS**

1. Provide certified personnel to instruct Owner of operation mechanical equipment. Provide maintenance specialist personnel to instruct on maintenance and adjustment of mechanical equipment and any changes or modification equipment must be under terms of guarantee.
2. Training plans to be submitted prior to the execution of the training. At a minimum, training plans to include the list of systems and equipment which are to be trained on. Instructor's name and qualifications and allotted time for training. Training plans to be reviewed and approved by Owner and Consultant prior to commencement of training.
3. Provide instruction during regular work hours prior to acceptance and turn over to Owner's staff for regular operation.
4. Use operation and maintenance data manual for instruction purposes. On completion of instruction, turn two manuals over to the Owner.
5. Operation and maintenance manual to be approved by and final copies deposited with Consultant before final inspection.

#### **1.17. OPERATION & MAINTENANCE MANUALS**

1. Provide one (1) paper copy and one "PDF" format on USB stick of Mechanical Operation and Maintenance Manuals complete with As-built Drawings, in accordance to the following and and Section 01 33 00 - Submittals.
2. Mechanical Operation and Maintenance Manuals to be delivered to the Engineer's office in accordance with Section 01 33 00 - Submittals.
3. Manuals to be bound in hard cover neatly labeled: "OPERATING AND MAINTENANCE INSTRUCTIONS".



4. The Operation and Maintenance Manuals shall be divided into sections with neatly labeled and tabbed dividers between each section. The sections to be included in the manual are:
  1. Section I – General
  2. Section II – Piping Systems
5. The following information shall be contained within the sections:
  1. SECTION I: A list giving name, address and telephone number of the Consultant, Engineers, Construction Manager, Mechanical Trade and Controls Trade. Written guarantees for the Mechanical Systems.
  2. SECTION II: A copy of all pressure tests. A copy of Gas Operational Tests for gas fired equipment. A list giving name, address and telephone number of all suppliers. A copy of all approved Shop Drawings. Copies of warranties.
6. MAINTENANCE MATRIX
  1. A maintenance matrix is to be provided in the Operation and Maintenance Manuals. The matrix shall indicate each piece of equipment and the required maintenance tasks and the frequency at which they are to be carried out.

#### **1.18. OWNER OCCUPANCY SCHEDULE**

1. The existing building will remain occupied during normal occupancy hours.
2. Provide temporary protection for all finishes, appliances or equipment in the existing building.
3. Protect and maintain existing mechanical room and electrical room operations during the work.

#### **1.19. AS-BUILT DRAWINGS**

1. Site records:
  1. One set to be kept on site and all changes to be recorded on daily basis. At the completion of the project, all changes shall be transferred to clean set, signed and passed to the Consultant. . Provide "PDF" format of As-Built Drawings on USB stick with Maintenance Manuals at completion of project.
  2. Make these drawings available for reference purposes and to inspection at all times.
2. Submit 2 copies of as-built marked up prints with final TAB report.
3. As-built drawings must be delivered before system acceptance.

#### **1.20. BUILDING SERVICE CONNECTIONS**

1. Make arrangements with all Utilities for building service connections and include all costs in tender price.

**1.21. SPARE PARTS**

1. Leave spare parts on site. Coordinate storage location with the Owner.

**1.22. TRAINING**

1. Provide minimum of one (1) hour training session on systems.

END OF SECTION 21 05 01

**PART 1– GENERAL****1.1. GENERAL**

1. Division 1, General Requirements is part of this Section and shall apply as if repeated here.

**1.2. REFERENCES**

1. ASME B31.1-2012, (SI), Power Piping, (SI Edition).
2. MSS-SP-58-2009, Pipe Hangers and Supports - Materials, Design and Manufacture.

**1.3. SHOP DRAWINGS AND PRODUCT DATA**

1. Submit shop drawings and product data in accordance with Section 01 33 00 - Submittals.
2. Indicate on manufacturer's catalogue literature the following:
  1. Upper attachment.
  2. Middle attachment.
  3. Pipe attachment.
  4. Riser clamps.
  5. Shields and saddles.
  6. Sway braces.

**1.4. MAINTENANCE DATA**

1. Provide maintenance data for incorporation into manual specified in Section 01 33 00 - Submittals.

**PART 2– PRODUCTS****2.1. GENERAL**

1. Fabricate hangers, supports and sway braces in accordance with ANSI B31.1 and MSS-SP-58.
2. Support from structural members. Where structural bearing does not exist or inserts are not in suitable locations, provide supplementary structural steel members.

**2.2. UPPER ATTACHMENTS**

1. Concrete:
  1. Anchors for existing concrete roof structure, heavy duty anchors Hilti HSL.
2. Steel beam (bottom flange):
  1. Cold piping NPS 2 and under: malleable iron C clamp to MSS-SP-58, type 19. ULC listed.
  2. Cold piping NPS 2-1/2 and larger and all hot piping: malleable iron beam clamp to MSS-SP-58, type 28 or 29. ULC listed.
3. Steel beam (top):
  1. Cold piping NPS 2 and under: malleable iron "top of beam" C clamp to MSS-SP-58, type 19. ULC listed.
  2. Cold piping NPS 2-1/2 and larger and all hot piping: steel jaw, hook rod with nut, spring washer and plain washer, to MSS-SP-58, type 25. ULC listed.
4. Steel joist:
  1. Cold piping NPS 2 and under: steel washer plate with double locking nuts.
  2. Cold piping NPS 2-1/2 and larger and all hot piping: steel washer plates with double locking nut, carbon steel clevis and malleable iron socket.
5. Steel channel or angle (bottom):
  1. Cold piping NPS 2 and under; malleable iron C clamp to MSS-SP-58, type 23. ULC listed.
  2. Cold piping NPS 2-1/2 and larger and all hot piping; universal channel clamp. ULC listed.

**2.3. MIDDLE ATTACHMENT (ROD)**

1. Carbon steel threaded rod black finish, galvanized in mechanical rooms.

**2.4. PIPE ATTACHMENT**

1. Cold piping, steel or cast iron: hot piping steel, with less than 25 mm, 1" horizontal movement; hot piping, steel, with more than 300 mm, 12" middle attachment rod length: adjustable clevis to MSS-SP-58, type 1. ULC listed.
2. Cold copper piping; hot copper piping with less than 25 mm, 1" horizontal movement; hot copper piping with more than 300 mm, 12" middle attachment rod length: adjustable clevis to MSS-SP-58, type 1. Copper plated.

3. Suspended hot piping, steel and copper, with horizontal movement in excess of 25 mm, 1"; hot steel piping with middle attachment rod 300 mm, 12" or less; pipe roller to MSS-SP-58, type 43.
4. Bottom supported hot piping, steel and copper: pipe roller stand to MSS-SP-58, type 45.

## 2.5. RISER CLAMPS

1. Steel or cast iron pipe: black carbon steel to MSS-SP-58, type 42. ULC listed.
2. Copper pipe: carbon steel copper finished to MSS-SP-58, type 42.

## 2.6. SADDLES AND SHIELDS

1. Hot and Cold piping NPS 1-1/4 and over: protection shield with high density insulation under shield with uninterrupted vapour barrier.

# PART 3– EXECUTION

## 3.1. HANGER SPACING

1. Spacing and middle attachment rod diameter as specified in paragraphs below or as in table below, whichever is more stringent.
  1. Plumbing piping: most stringent requirements of Ontario Building Code, or authority having jurisdiction.
  2. Fire protection: to applicable fire code.
  3. Gas piping: up to NPS 1/2: every 6', 1.8 m
  4. Within 12" of each horizontal elbow.

Pipe Size (Nominal)	Rod Diameter	Maximum Steel	Spacing Cooper
NPS 1/2	10 mm 3/8"	1.8m 6'	5' 1.5m
NPS 3/4, 1	10 mm 3/8"	2.1m 7'	6' 1.8m
NPS 1-1/4	10 mm 3/8"	2.1m 7'	8' 2.4m
NPS 1-1/2	10 mm 3/8"	2.7m 9'	8' 2.4m
NPS 2	10 mm 3/8"	3.0m 10'	9' 2.7m
NPS 2-1/2	10 mm 3/8"	3.0m 10'	10' 3.0m
NPS 3 to 4	10 mm 3/8"	4.6m 15'	12' 3.6m
NPS 6	19 mm 3/4"	5.1 m 17'	--

## 3.2. HANGER INSTALLATION

1. Offset hanger so that rod is vertical in operating position.
2. Adjust hangers to equalize load.
3. Loads suspended from steel structure to be reviewed and analyzed with structural engineer/general contractor.

END OF SECTION 23 05 29

**PART 1– GENERAL****1.1. GENERAL**

1. Division 1, General Requirements is part of this Section and shall apply as if repeated here.

**1.2. REFERENCES**

1. ASME B16.5-2013, Pipe Flanges and Flanged Fittings, Steel Nickel Alloy and other Special Alloys.
2. ASME B16.18-2012, Cast Copper Alloy Solder Joint Pressure Fittings.
3. ASME B16.20-2012, Ring-Joint Gaskets and Grooves for Steel Pipe Flanges.
4. ASME B16.21-2011, Non-metallic Flat Gaskets for Pipe Flanges.
5. ASME B16.22-2013, Wrought Copper and Copper Alloy Solder-Joint Pressure Fittings.
6. ASME B18.2.1-2012, Square and Hex Bolts and Screws.
7. ASTM A47M/47M-99(2004), Specification for Ferritic Malleable Iron Castings.
8. ASTM A53/A53M-12, Specification for Pipe, Steel, Black and Hot-Dipped, Zinc Coated, Welded and Seamless.
9. ASTM B32-08, Specification for Solder Metal.
10. ASTM B75/B75M-11, Specification for Seamless Copper Tube Metric.
11. CSA B149.1-10, Natural Gas Installation Code.
12. CSA W47.1-09, Certification of Companies for Fusion Welding of Steel Structures.

**1.3. PRODUCT DATA**

1. Submit product data in accordance with Section 01 33 00 - Submittals.

**1.4. MAINTENANCE DATA**

1. Provide maintenance data for incorporation into manual specified in Section 01 33 00 - Submittals.

**PART 2 - PRODUCTS**

**2.1. PIPE**

1. Steel pipe: to ASTM A120 ASTM A53, Schedule 40, seamless as follows:
  1. NPS 1/2 to 2, screwed.
  2. NPS 2 1/2 and over, plain end.
2. Copper tube: to ASTM B75M.

**2.2. JOINTING MATERIAL**

1. Screwed fittings: pulverized lead paste.
2. Welded fittings: to CSA W47.1.
3. Flange gaskets: to ANSI B16.21 or ANSI B16.20.
4. Soldered: to ASTM B32, tin antimony 95:5.

**2.3. FITTINGS**

1. Steel pipe fittings, screwed, flanged or welded:
  1. Malleable iron: screwed, banded, Class 150.
  2. Steel pipe flanges and flanged fittings: to ANSI B16.5.
  3. Steel butt-welding fittings.
  4. Unions: malleable iron, brass to iron, ground seat, to ASTM A47M.
  5. Bolts and nuts: to ANSI B18.2.1.
  6. Nipples: Schedule 40, to ASTM A53.
2. Copper pipe fittings, screwed, flanged or soldered:
  1. Cast copper fittings: to ANSI B16.18.
  2. Wrought copper fittings: to ANSI B16.22.

**2.4. VALVES**

1. Ball Valves - Up to 50mm (2").
  1. 1034 KPA (150psig) / 600WOG Rating.



2. Brass and or Bronze body, Full port, TFE seats, Double O-Ring Design, or Teflon packing, Chrome plated solid Bronze ball, 3.16 Rating, CGA/CSA Approved, Lever Handle, Threaded connection.
3. Acceptable Products:
  1. Kits 58, Toyo 5044A, or approved equal.
2. Lubricated Plug Valve - 65mm (2 1/2") & Over.
  1. Class 125, flanged to ANSI B16.1, Regular pattern, Regular port, Full bore lubricated plug valves.
  2. Acceptable Products:
    1. NH Canada 205m or approved equal.

### **PART 3– EXECUTION**

#### **3.1. PIPING**

1. Install in accordance with applicable Provincial/Territorial Codes.
2. Install in accordance with CAN1-B149.1, CAN1-B149.2.
3. Assemble piping using fittings manufactured to ANSI standards.
4. Connect to equipment in accordance with manufacturer's instruction unless otherwise indicated.
5. Slope piping down in direction of flow to low points.
6. Install drip points:
  1. At all low points in piping system.
  2. At each connection to equipment.
7. Use eccentric reducers at pipe size change installed to provide positive drainage.
8. Provide clearance for access and for maintenance.
9. Ream pipes, clean scale and dirt, inside and out.
10. Install piping to minimize pipe dismantling for equipment removal.
11. Paint all gas piping yellow unless otherwise directed. Where pipe is visible on exterior walls of building, paint to match building (colour by consultant) and provide yellow banding as per CAN/CSA B149.1.

### **3.2. VALVES**

1. Install valves with stems upright or horizontal unless otherwise approved by Consultant.
2. Install valves at all branch take-offs to isolate each piece of equipment, and as indicated.

### **3.3. TESTING**

1. Test system in accordance with CAN1-B149.1, CAN1-B149.2.

### **3.4. PURGING**

1. Purge after pressure test in accordance with CAN1-B149.1, CAN1-B149.2.

END OF SECTION 23 11 23

**PART 1 - GENERAL****1.1. GENERAL**

1. Division 1, General Requirements is part of this Section and shall apply as if repeated here.
2. This Section covers items common to Sections of Division 26. This Section supplements requirements of Division 1.
3. Coordinate all requirements with general contractor.

**1.2. SCOPE OF WORK**

1. The scope of work for this project includes:
  1. Provision of new, 175kW, 208V, outdoor, NG, stand by generator.
  2. Provision of new 800A, automatic transfer switch with dual bypass.
  3. Provision of outdoor-rated, camlock connection cabinet for load bank testing and portable genset tie-in.
  4. Provision of new natural gas supply piping for generator.
  5. All earthworks, concrete pad and bollards for new generator.
  6. All associated power wiring, duct banks and bonding. Shore power for generator panel.
  7. All controls and communication cabling for fire alarm signals and generator annunciation.
  8. Modifications to existing Enbridge gas station to be by cash allowance. Contractor to coordinate.

**1.3. CODES AND STANDARDS**

1. In this document, all references to Code numbers shall mean "Latest Edition".
2. Do complete installation in accordance with Ontario Electrical Safety Code.
3. Do complete installation in accordance with CSA C22.1-12 except where specified otherwise.
4. Comply with all CSA and inspection Authority Bulletins in force at time of Tender.
5. Do underground systems in accordance with CSA C22.3 No.1-10 except where specified otherwise.

6. Abbreviations for electrical terms: to CSA Z85-1983.
7. Where requirements of this specification exceed those of above-mentioned standards, this specification shall govern.

#### **1.4. DEFINITIONS**

1. "Provide" means supply and install.
2. "Approved" means approved in writing by Consultant.
3. "Inspection Authority" means Electrical Safety Authority.
4. "Consultant" means designated qualified professional engineer acting as representative of Owner for monitoring of work.
5. "Manual" means Operations and Maintenance manual.
6. "OESC" means latest edition of Ontario Electrical Safety Code

#### **1.5. CARE, OPERATION, START-UP AND INSTRUCTION TO OWNERS**

1. Provide certified personnel to instruct Owner of operation electrical equipment. Provide maintenance specialist personnel to instruct on maintenance and adjustment of electrical equipment and any changes or modification equipment must be under terms of guarantee.
2. Provide instruction during regular work hours prior to acceptance and turn over to Owner's staff for regular operation.
3. Provide these services for such period, and for as many visits as necessary to put equipment in operation and ensure that operating personnel are conversant with all aspects of its care and operation.
4. Use operation and maintenance data manual for instruction purposes. On completion of instruction, turn three manuals over to the Owner.
5. Operation and maintenance manual to be approved by and final copies deposited with consultant before final inspection.

#### **1.6. AS-BUILT DRAWINGS**

1. Site records:
  1. One set to be kept on site and all changes to be recorded on daily basis. At the completion of the project, all changes shall be transferred to clean set, signed and passed to the Consultant.
  2. Make these drawings available for reference purposes and to inspection at all times.
2. As-built drawings must be delivered before system acceptance.

**1.7. PERMITS, FEES AND INSPECTION**

1. Submit to Inspection Authority necessary number of drawings and specifications for examination and approval prior to commencement of work.
2. Consultant will provide drawings and specifications required by Inspection at no cost.
3. Submit Notice of Project to Ministry of Labour.
4. Pay associated fees and obtain all permits required for the performance of the work.
5. Notify Consultant of changes required by Inspection Authority prior to making changes.
6. Furnish Certificates of Acceptance from Inspection Authority on completion of work to consultant.

**1.8. MATERIALS AND EQUIPMENT**

1. Provide materials and equipment in accordance with Division 1.
2. Equipment and material to be CSA certified. Where there is no alternative to supplying equipment which is not CSA certified, obtain special approval from Inspection Authority.
3. Factory assemble control panels and component assemblies.

**1.9. EQUIPMENT IDENTIFICATION**

1. Identify electrical equipment with nameplates and labels as follows:
2. Nameplates:
  1. Lamacoid 3 mm (1/8") thick plastic engraving sheet, white face, black core, mechanically attached with self tapping screws. For emergency power circuits, use a red face and black core.

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**NAMEPLATE SIZES**

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Size 1	10 x 50 mm (3/8 x 2")	1 line	3 mm (1/8") high letters
Size 2	12 x 70 mm (1/2 x 3")	1 line	5 mm (1/4") high letters
Size 3	12 x 70 mm (1/2 x 3")	2 lines	3 mm (1/8") high letters
Size 4	20 x 90 mm (3/4 x 4")	1 line	8 mm (3/8") high letters
Size 5	20 x 90 mm (3/4 x 4")	2 lines	5 mm (1/4") high letters
Size 6	25 x 100 mm (1" x 4")	1 line	12 mm (1/2") high letters
Size 7	25 x 100 mm (1" x 4")	2 lines	6 mm (1/4") high letters

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3. Labels:
  1. Embossed plastic labels with 6 mm (1/4") high letters unless specified otherwise.

4. Wording on nameplates and labels to be approved by Consultant prior to manufacture.
5. Allow for average of twenty-five (25) letters per nameplate and label.
6. Identification to be English.
7. Nameplates for terminal cabinets and junction boxes to indicate system and/or voltage characteristics.
8. Disconnects, starters and contactors: indicate equipment being controlled and voltage.
9. Terminal cabinets and pull boxes: indicate system and voltage.
10. Transformers: indicate capacity, primary and secondary voltages.
11. Coordinate names of equipment and systems with Division 23 to ensure that identical names are used.

#### 1.10. WIRING IDENTIFICATION

1. Identify wiring with permanent indelible identifying markings, either numbered or coloured plastic tapes, on both ends of phase conductors of feeders and branch circuit wiring.
2. Maintain phase sequence and colour coding throughout.
3. Colour code: to CSA C22.1.
4. Use colour coded wires in communication cables, matched throughout system.

#### 1.11. CONDUIT AND CABLE IDENTIFICATION

1. Colour code conduits, boxes and metallic sheathed cables.
2. Code with plastic tape or paint at points where conduit or cable enters wall, ceiling, or floor, and at 15 m intervals.
3. Colours: 25 mm (1") wide prime colour and 20 mm (3/4") wide auxiliary colour.

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	PRIME	AUXILIARY
up to 250 V	yellow	
up to 600 V	yellow	green
up to 5 kV	yellow	blue
up to 15 kV	yellow	red
Telephone	green	
Other communication		
systems	green	blue
Fire alarm	red	
Emergency	red	blue
Voice		
Other security		

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systems

red

yellow

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**1.12. WIRING TERMINATIONS**

1. Lugs, terminals, screws used for termination of wiring to be suitable for either copper or aluminum conductors.

**1.13. MANUFACTURERS AND CSA LABELS**

1. Ensure that manufacturer's registration plates are properly affixed to all apparatus showing the size, name of equipment, serial number, and all information usually provided, including voltage, cycle, phase and the name and address of the manufacturer.
2. Do not paint over registration plates or approved labels. Leave openings through insulation for viewing the plates. Contractors or sub-contractors nameplate not acceptable.

**1.14. WARNING SIGNS**

1. As specified and to meet requirements of Inspection Authority and Consultant.

**1.15. MOUNTING HEIGHTS**

1. Mounting height of equipment is from finished floor to centreline of equipment unless specified or indicated otherwise.
2. If mounting height of equipment is not specified or indicated, verify before proceeding with installation.
3. Install electrical equipment at following heights unless indicated otherwise.
  1. Panelboards to top of trim: 1800 mm (72")

**1.16. FIELD QUALITY CONTROL**

1. All electrical work to be carried out by qualified, licensed electricians or apprentices as per the conditions of the Provincial Act respecting manpower vocational training and qualification. Employees registered in a provincial apprentice's program shall be permitted, under the direct supervision of a qualified licensed electrician, to perform specific tasks – the activities permitted shall be determined based on the level of training attained and the demonstration of ability to perform specific duties.
2. Conduct and pay for following tests:
  1. Power distribution system including phasing, voltage, grounding and load balancing.
  2. Circuits originating from branch distribution panels.

3. All Special Systems: emergency generator
3. Furnish manufacturer's certificate or letter confirming the entire installation as it pertains to each system has been installed to manufacturer's instructions.
4. Insulation resistance testing.
  1. Megger circuits, feeders and equipment up to 350 V with a 500 V instrument.
  2. Check resistance to ground before energizing.
5. Carry out tests in presence of Consultant.
6. Provide instruments, meters, equipment and personnel required to conduct tests during and at conclusion of project.
7. Submit test results for Consultant's review.

#### **1.17. CONCRETE WORK**

1. Provide 100mm concrete housekeeping pads for all floor mounted equipment, including: transformers, automatic transfer switches, switchboard, MCCs and panels.

#### **1.18. EXCAVATION AND BACKFILLING**

1. This Division shall be responsible for coordination for bedding of lines or equipment and for backfilling and compaction to 98% Standard Proctor Density.

#### **1.19. DEMOLITION**

1. Disconnect and make safe electrical equipment and services as required on site.
2. Be responsible for demolition and removal of electrical equipment and services designated on drawings for removal and as required by work unless specified otherwise under other divisions.
3. Electrical work being removed by other division shall be carried out under direction of this division. Do all disconnecting prior to authorizing removal.

#### **1.20. FIREPROOFING**

1. Where cables or conduits pass through floors and fire rated walls, pack space between wiring and sleeve full with firestopping system to CAN 4-S115.

#### **1.21. CUTTING, PATCHING AND FINISHING**

1. All cutting, patching and finishing for electrical work shall be by this Section. Obtain approval before cutting any structural members. Upon removal of all conduit, wiring, light fixtures,



equipment, etc., patch all holes and match existing finishes.

#### **1.22. COORDINATION WITH EXISTING UTILITIES**

1. Before commencing any Work, the Contractor shall determine the locations of all underground utilities and structures indicated in or inferable from the Contract Documents, or that are inferable from an inspection of the Place of the Work.
2. All existing utilities are to be maintained and protected for the length of construction.
3. Contractor to notify consultant if any conflicts arise and allow for minimum 48 hours for consultant's review.

#### **1.23. EXISTING SYSTEMS**

1. Before submitting tender price verify on job site location of all accessible existing electrical systems affecting execution of this contract. Difficulties arising during construction will not be considered as grounds for additional payment.
2. Where work involves breaking into or connecting to existing systems, carry out work at times directed by governing authorities, with minimum of disturbance to pedestrian traffic.
3. Submit schedule to and obtain approval from Consultant for any shut down or closure of active service or facility. Adhere to approved schedule and provide notice to affected parties.
4. Where unknown services are encountered, immediately advise Consultant and confirm findings in writing.

#### **1.24. OWNER OCCUPANCY SCHEDULE**

1. The existing building will remain occupied during normal occupancy hours.
2. Provide temporary protection for all finishes, appliances or equipment in the existing building.
3. Protect and maintain existing boiler room and electrical room operations during the work.

END OF SECTION 26 05 00

**PART 1 - GENERAL****1.1. GENERAL**

1. Division 1, General Requirements is part of this Section and shall apply as if repeated here.

**1.2. REFERENCES**

1. CSA C22.2 No. 65-13 Wire Connectors.
2. EEMAC 1Y-2, 1961 Bushing Stud Connectors and Aluminum Adapters (1200 Ampere Maximum Rating).

**PART 2 - PRODUCTS****2.1. MATERIALS**

1. Pressure type wire connectors: with current carrying parts of copper sized to fit copper conductors as required.
2. Fixture type splicing connectors: with current carrying parts of copper sized to fit copper conductors 10 AWG or less.
3. Bushing stud connectors: to EEMAC 1Y-2 to consist of:
  1. Connector body and stud clamp for stranded copper conductors.
  2. Clamp for stranded copper conductors
  3. Stud clamp bolts.
  4. Bolts for copper conductors
  5. Sized for conductors as indicated.
4. Clamps or connectors for armoured cable, flexible conduit, as required.

**PART 3 - EXECUTION****3.1. INSTALLATION**

1. Remove insulation carefully from ends of conductors and:

1. Apply coat of zinc joint compound on aluminum conductors prior to installation of connectors.
2. Install mechanical pressure type connectors and tighten screws with appropriate compression tool recommended by manufacturer. Installation shall meet secureness tests in accordance with CSA C22.2 No.65.
3. Install fixture type connectors and tighten. Replace insulating cap.
4. Install bushing stud connectors in accordance with EEMAC 1Y-2.

END OF SECTION 26 05 20

## **PART 1- GENERAL**

### **1.1. RELATED SECTIONS**

1. Division 1, General Requirements is part of this Section and shall apply as if repeated here.
2. Section 26 05 20 – Wire and Box Connections – 0 – 1000V.

### **1.2. REFERENCES**

1. CSA C22.2 No. 0.3-09, Test Methods for Electrical Wires and Cables.

### **1.3. PRODUCT DATA**

1. Submit product data in accordance with Division 1.

### **1.4. WASTE MANAGEMENT AND DISPOSAL**

1. Separate and recycle waste materials in accordance with Division 1.
2. Collect and separate plastic, paper packaging and corrugated cardboard in accordance with Division 1.
3. Fold up metal banding, flatten and place in designated area for recycling.

## **PART 2- PRODUCTS**

### **2.1. GENERAL**

1. All conductors to be copper, unless otherwise noted.

### **2.2. BUILDING WIRES**

1. Conductors: stranded for 10 AWG and larger. Minimum size: 12 AWG for power and # 16 AWG for controls and fire alarm.
2. Copper conductors: size as indicated, with insulation of chemically cross-linked thermosetting polyethylene material type RW90, or with thermoplastic insulation and nylon jacket, type T-90 nylon.
3. 600V rating for nominal 208V system voltage;
4. All outdoor circuit conductors to be type RWU90, unless otherwise noted.

5. Wire and conduit sizes shown are based on RW75 XLPE and are minimum sizes. Contractor is responsible for wire and conduit sized for other approved wires.
6. Conductors shall be colour coded. Conductors size 10 AWG and smaller shall have colour impregnated into insulation at time of manufacture.
  1. Colour code wiring for 120 / 208 Volt equipment as follows
    1. Phase conductors: Red, Black, Blue
    2. Neutral conductors: White
    3. Bonding to ground: Green

### **2.3. CONTROL CABLES**

1. Type LVT: 2 soft annealed copper conductors sized as indicated with thermoplastic insulation and outer covering thermoplastic jacket.
2. Plenum rated cable (FT-6) required in ceiling space where not in conduit.

### **2.4. FIRE ALARM WIRES**

1. Copper conductors: size as per fire alarm manufacturer's recommendation, with thermoplastic insulation and nylon jacket, type TWH rated at 600 V for size #14 AWG and larger, type TEW for size #16 AWG and smaller.

## **PART 3 - EXECUTION**

### **3.1. INSTALLATION OF BUILDING WIRES**

1. Install wiring in conduit in accordance with Section 26 05 34, unless otherwise noted.
2. Use type RW90 where required by Ontario Electrical Safety Code, for all panelboard feeders and for all conductors sized 250 MCM and larger.
3. Use type RW90 or T-90 for branch circuit wiring unless otherwise indicated.
4. Minimum wire size shall be No. 12 AWG. For 15A, 120V branch circuit home runs which exceed 23 m length shall be minimum No. 10 AWG, and minimum No. 8 AWG for runs which exceed 36 m. For 20A, 120V branch circuit home runs which exceed 17 m in length shall be minimum No. 10 AWG, and minimum No. 8 AWG for runs which exceed 27 m. Where existing wiring is re-used, minimum wire sizes shall apply and wiring shall be replaced when it does not meet the minimum size.
5. Existing wiring may only be re-used if permitted by Engineer.

### **3.2. INSTALLATION OF CONTROL CABLES**

1. Install control cables in conduit in accordance with Section 26 05 34.
2. Ground control cable shield.

### **3.3. INSTALLATION OF FIRE ALARM WIRE**

1. Install all wiring in conduit in accordance with Section 26 05 34.

END OF SECTION 26 05 21

## **PART 1- GENERAL**

### **1.1. GENERAL**

1. Division 1, General Requirements is part of this Section and shall apply as if repeated here.

## **PART 2- PRODUCTS**

### **2.1. EQUIPMENT**

1. Rod electrodes: copper clad steel 19 mm dia by 3 m long.
2. Plate electrodes: copper, minimum surface area 0.2 m<sup>2</sup> and 6 mm thick.
3. Grounding conductors: bare stranded copper, soft annealed, size as indicated.
4. Non-corroding accessories necessary for grounding system, type, size, material as indicated, including but not necessarily limited to:
  1. Grounding and bonding bushings.
  2. Protective type clamps.
  3. Bolted type conductor connectors.
  4. Thermit welded type conductor connectors.
  5. Bonding jumpers, straps.
  6. Pressure wire connectors.

## **PART 3- EXECUTION**

### **3.1. INSTALLATION GENERAL**

1. Install complete permanent, continuous grounding system including, electrodes, conductors, connectors, accessories, as indicated, to conform to requirements of consultant, and Inspection Authority. Where EMT is used, run ground wire in conduit.
2. Install connectors in accordance with manufacturer's instructions.
3. Protect exposed grounding conductors from mechanical injury.

4. Make buried connections using Burndy compression connectors.
5. Use mechanical connectors for grounding connections to equipment provided with lugs.
6. Soldered joints not permitted.
7. Make grounding connections in radial configuration only, with connections terminating at single grounding point. Avoid loop connections.
8. Bond single conductor, metallic armoured cables to cabinet at supply end, and provide non-metallic entry plate at load end.

### **3.2. ELECTRODES**

1. Install grounding electrodes and make grounding connections.
2. Plate electrodes to be located a minimum 600mm below finished grade level.
3. Where ground rods are used, provide at least two ground rods, located at least 3 meters apart and buried to a minimum depth of 3 meters.
4. Bond separate, multiple electrodes together.
5. Use size #2/0 AWG copper conductors for connections to electrodes.
6. Make special provision for installing electrodes that will give [acceptable] resistance to ground value where rock or sand terrain prevails. Ground as indicated.

### **3.3. EQUIPMENT GROUNDING**

1. Install grounding connections to typical equipment included in, but not necessarily limited to following list. Service equipment, transformers, switchgear, duct systems, frames of motors, motor control centres, starters, control panels, building steel work, generators, elevators and escalators, distribution panels and outdoor lighting.

### **3.4. FIELD QUALITY CONTROL**

1. Perform tests in accordance with Section 26 05 00 - COMMON WORK RESULTS - ELECTRICAL.
2. Perform ground continuity using method appropriate to site conditions and to approval of Consultant and Inspection Authority.
  1. Ground continuity: Ensure, through ground loop resistance measurement, that the grounding for the new equipment is tied in satisfactorily to the existing ground grid. Continuity measurements should be made between new equipment and system grounds of existing 600V services.



2. Perform tests before energizing electrical system.
3. Coordinate scheduling of tests with testing agency. Provide all test results to consultant.

END OF SECTION 26 05 28

**PART 1 - GENERAL****1.1. RELATED WORK**

1. Division 1, General Requirements is part of this Section and shall apply as if repeated here.
2. 26 05 00 – Common Work Results – Electrical.

**PART 2 - PRODUCTS****2.1. SUPPORT CHANNELS**

1. U shape, size 41 x 41 x 2.5 mm thick, surface mounted or suspended.
2. Smaller sections subject to Consultant's approval.

**PART 3 - EXECUTION****3.1. INSTALLATION**

1. Secure equipment to tile and plaster surfaces with nylon anchors, with independent grip protrusions.
2. Secure equipment to poured concrete with expandable inserts.
3. Secure equipment to hollow masonry walls or suspended ceilings with toggle bolts.
4. Secure equipment to Siporex ceiling with Aircrete anchors equal to Fischer p/n:GB14.
5. Secure surface mounted equipment with twist clip fasteners to inverted T bar ceilings. Ensure that T bars are adequately supported to carry weight of equipment specified before installation.
6. Support equipment, conduit or cables using clips, spring loaded bolts, cable clamps designed as accessories to basic channel members.
7. Fasten exposed conduit or cables to building construction or support system using straps.
  1. One-hole steel straps to secure surface conduits and cables 50 mm and smaller.
  2. Two-hole steel straps for conduits and cables larger than 50 mm.
  3. Beam clamps to secure conduit to exposed steel work.

8. Suspended support systems.
  1. Support individual cable or conduit runs with 6 mm dia threaded rods and spring clips.
  2. Support 2 or more cables or conduits on channels supported by 6 mm dia threaded rod hangers where direct fastening to building construction is impractical.
9. For surface mounting of two or more conduits use channels at 3 m oc spacing.
10. Provide metal brackets, frames, hangers, clamps and related types of support structures where indicated or as required to support conduit and cable runs.
11. Ensure adequate support for raceways and cables dropped vertically to equipment where there is no wall support.
12. Do not use wire lashing or perforated strap to support or secure raceways or cables.
13. Do not use supports or equipment installed for other trades for conduit or cable support except with permission of other trade and approval of Consultant.
14. Install fastenings and supports as required for each type of equipment cables and conduits, and in accordance with manufacturer's installation recommendations.
15. All fastenings and supports to be hot dipped galvanized. All cut ends exposing base material to be completely sealed with field applied coating to give equivalent protection prior to installation. Following complete installation, all damage to protective layer to be carefully and completely touched up with same field applied coating.

END OF SECTION 26 05 29

**PART 1- GENERAL****1.1. GENERAL**

1. Division 1, General Requirements is part of this Section and shall apply as if repeated here.

**1.2. REFERENCES**

1. CSA C22.1-12 Canadian Electrical Code, Part 1.

**1.3. WASTE MANAGEMENT AND DISPOSAL**

1. Separate and recycle waste materials in accordance with Division 1, and with the Waste Reduction Workplan.
2. Collect and separate plastic, paper packaging and corrugated cardboard in accordance with Division 1.

**PART 2- PRODUCTS****2.1. OUTLET AND CONDUIT BOXES - GENERAL**

1. Size boxes in accordance with CSA C22.1.
2. 102 mm (4") square or larger outlet boxes as required for special devices.
3. Gang boxes where wiring devices are grouped.
4. Blank cover plates for boxes without wiring devices.
5. Combination boxes with barriers where outlets for more than one system are grouped.

**2.2. SHEET STEEL OUTLET BOXES**

1. Electro-galvanized steel single and multi gang flush device boxes for flush installation, minimum size 76 x 50 x 38 mm or as indicated. 102 mm (4") square outlet boxes when more than one conduit enters one side with extension and plaster rings as required.
2. Electro-galvanized steel utility boxes for outlets connected to surface-mounted EMT conduit, minimum size 102 x 54 x 48 mm
3. 102 mm (4") square or octagonal outlet boxes for lighting fixture outlets.

4. 102 mm (4") square outlet boxes with extension and plaster rings for flush mounting devices in finished tile walls.

### **2.3. CONDUIT BOXES**

1. Cast FS or FD feraloy boxes with factory-threaded hubs and mounting feet for surface wiring of switches and receptacle.
2. Electro-galvanized utility tape for indoor surface wiring.

### **2.4. FITTINGS - GENERAL**

1. Bushing and connectors with nylon insulated throats.
2. Knock-out fillers to prevent entry of debris.
3. Conduit outlet bodies for conduit up to 35 mm and pull boxes for larger conduits.
4. Double locknuts and insulated bushings on sheet metal boxes.

## **PART 3- EXECUTION**

### **3.1. INSTALLATION**

1. Support boxes independently of connecting conduits.
2. Fill boxes with paper, sponges or foam or similar approved material to prevent entry of debris during construction. Remove upon completion of work.
3. For flush installations mount outlets flush with finished wall using plaster rings to permit wall finish to come within 6 mm of opening.
4. Provide correct size of openings in boxes for conduit, mineral insulated and armoured cable connections. Reducing washers are not allowed.

END OF SECTION 26 05 32

## **PART 1- GENERAL**

### **1.1. GENERAL**

1. Division 1, General Requirements is part of this Section and shall apply as if repeated here.

### **1.2. REFERENCES**

1. Canadian Standards Association (CSA)
  1. CSA C22.2 No. 18-98 (R2003), Outlet Boxes, Conduit Boxes, and Fittings and Associated Hardware.
  2. CSA C22.2 No. 56-04 (R2009), Flexible Metal Conduit and Liquid-Tight Flexible Metal Conduit.
  3. CSA C22.2 No. 83-M1985(R2013), Electrical Metallic Tubing.
  4. CSA C22.2 No. 211.2-06 (R2011), Rigid PVC (Unplasticized) Conduit.
  5. CSA C22.2 No. 227.3-05 (R2010), Flexible Non-metallic Tubing.

### **1.3. WASTE MANAGEMENT AND DISPOSAL**

1. Separate and recycle waste materials in accordance with Division 1.
2. Place materials defined as hazardous or toxic waste in designated containers.
3. Ensure emptied containers are sealed and stored safely for disposal away from children.
4. Collect and separate plastic, paper packaging and corrugated cardboard in accordance with Division 1.

## **PART 2- PRODUCTS**

### **2.1. CONDUITS**

1. Electrical metallic tubing (EMT): with steel couplings, sized as indicated.
2. Rigid PVC conduit, sized as indicated.
3. Flexible metal conduit and liquid-tight flexible metal conduit, sized as indicated.

**2.2. CONDUIT FASTENINGS**

1. One hole steel straps to secure surface conduits 50 mm (2") and smaller. Two hole steel straps for conduits larger than 50 mm (2").
2. Beam clamps to secure conduits to exposed steel work.
3. Channel type supports for two or more conduits at 3 m (9') o/c.
4. 6 mm dia threaded rods to support suspended channels.

**2.3. CONDUIT FITTINGS**

1. Fittings: manufactured for use with conduit specified. Coating: same as conduit.
2. Fittings to be suitable sized for conduit used.
3. Fittings used for EMT to be steel, not cast.
4. Factory "ells" where 90° bends are required for 25 mm (1") and larger conduits.

**2.4. EXPANSION FITTINGS FOR RIGID CONDUIT**

1. Weatherproof expansion fittings with internal bonding assembly suitable for 100 or 200 mm linear expansion.
2. Watertight expansion fittings with integral bonding jumper suitable for linear expansion and 19 mm deflection in all directions.
3. Weatherproof expansion fittings for linear expansion at entry to panel.

**2.5. FISH CORD**

1. Polypropylene.

**PART 3- EXECUTION****3.1. INSTALLATION**

1. Install conduits to conserve headroom in exposed locations and cause minimum interference in spaces through which they pass.
2. Conceal conduits except in mechanical and electrical service rooms and in unfinished areas.

3. Use electrical metallic tubing (EMT) above 2.4 m not subject to mechanical injury.
4. Use rigid PVC conduit for installation underground and in slabs.
5. Use liquid tight flexible metal conduit for final connection to a vibrating piece of equipment.
6. Bend conduit cold. Replace conduit if kinked or flattened more than 1/10th of its original diameter.
7. Mechanically bend steel conduit over 21 mm diameter.
8. All unterminated conduit ends to be reamed and protected by insulating bushings.
9. Install fish cord in empty conduits and all conduits 53 mm and greater.
10. Where conduits become blocked, remove and replace blocked section. Do not use liquids to clean out conduits.
11. Dry conduits out before installing wire.
12. Use water tight fittings at connections to taps or sides of sprinkler proof equipment or seal with approved sealant.

### **3.2. SURFACE CONDUITS**

1. Run parallel or perpendicular to building lines.
2. Locate conduits behind infrared or gas fired heaters with 1500 mm clearance.
3. Run conduits in flanged portion of structural steel.
4. Group conduits wherever possible on suspended channels.
5. Do not pass conduits through structural members except as indicated.
6. Do not locate conduits less than 75 mm (3") parallel to steam or hot water lines with minimum of 25 mm (1") at crossovers.
7. All exposed conduits in areas other than service spaces are to be painted to match existing finishes.

### **3.3. CONCEALED CONDUITS**

1. Run parallel or perpendicular to building lines.

### **3.4. CONDUITS UNDERGROUND**



1. Slope conduits to provide drainage and prevent moisture or gases from entering the building.
2. Waterproof joints (PVC excepted) with heavy coat of bituminous paint.

END OF SECTION 26 05 34

**PART 1- GENERAL****1.1. RELATED SECTIONS**

1. Division 1, General Requirements is part of this Section and shall apply as if repeated here.
2. Section 26 05 00 – Electrical General Requirements.

**PART 2- PRODUCTS****2.1. PVC DUCTS**

1. PVC ducts, type DB2

**2.2. PVC DUCT FITTINGS**

1. Rigid PVC opaque solvent welded type couplings, bell end fittings, plugs, caps, adaptors as required to make complete installation.
2. Expansion joints.
3. Rigid PVC 5 angle couplings.

**PART 3- EXECUTION****3.1. DUCT INSTALLATION**

1. Install underground duct banks.
2. Build duct bank on undisturbed soil or on well compacted granular fill not less than 150mm (6") thick, compacted to 95% of maximum proctor dry density.
3. Open trench completely between manholes to be connected before ducts are laid and ensure that no obstructions will necessitate change in grade of ducts.
4. Install ducts at elevations and with slope as indicated and minimum slope of 1 to 400.
5. Install base spacers at maximum intervals of 1.5 m (5') levelled to grades indicated for bottom layer of ducts.
6. Lay PVC ducts with configuration as indicated with preformed interlocking, rigid plastic intermediate spacers to maintain spacing between ducts at not less than 75mm (3") horizontally and vertically. Stagger joints in adjacent layers at least 150mm (6") and make joints watertight.

7. Make transpositions, offsets and change in direction using 5° bend sections, do not exceed a total of 20° with duct offset.
8. Use bell ends at duct terminations in manholes or buildings.
9. Use conduit to duct adapters when connecting to conduits.
10. Terminate duct runs with duct coupling set flush with the end of concrete envelope when dead ending duct bank for future extension.
11. Cut, ream and taper end of ducts in field in accordance with manufacturer's recommendations, so that duct ends are fully equal to factory-made ends.
12. Clean ducts before laying. Cap ends of ducts during construction and after installation to prevent entrance of foreign materials.
13. After installation of ducts, pull through each duct a wooden mandrel not less than 300mm (12") long and of a diameter of 6mm (1/4") less than internal diameter of duct, followed by stiff bristle brush to remove sand, earth and other foreign matter. Pull stiff bristle brush through each duct immediately before pulling-in cables.
14. In each duct install pull rope continuous throughout each duct run with 3m (10') spare rope at each end.

### **3.2. CABLE INSTALLATION IN DUCTS**

1. Installation of high voltage power cables, conduits, etc. will be by electrical contractor, unless otherwise noted.
2. Primary duct banks and manholes are existing to remain.
3. Install cables as indicated in ducts.
4. Do not pull spliced cables inside ducts.
5. Install multiple cables in duct simultaneously.
6. Use CSA approved lubricants of type compatible with cable jacket to reduce pulling tension.
7. To facilitate matching of colour coded multi-conductor control cables reel off in same direction during installation.
8. Before pulling cable into ducts and until cables properly terminated, seal ends of lead covered cables with wiping solder; seal ends of non-leaded cables with moisture seal tape.
9. After installation of cables, seal duct ends with duct sealing compound to prevent entrance of moisture or gases.
10. Service entrance raceway shall contain no other than the service entrance conductors.

### **3.3. MARKERS**

1. Mark ducts every 50' along straight runs and changes in direction.
2. Provide drawings showing locations of markers.

### **3.4. AS-BUILTS**

1. Provide As-Built drawings, indicating location of all underground conductor, cable or raceway installations including depth of burial and type of installation.

### **3.5. FIELD QUALITY CONTROL**

1. Perform tests in accordance with Section 16010 - Electrical General Requirements.
2. Perform tests using qualified personnel. Provide necessary instruments and equipment.
3. Check phase rotation and identify each phase conductor of each feeder.
4. Check each feeder for continuity, short circuits and grounds. Ensure resistance to ground of circuits is not less than 50 megohms.
5. Pre-Acceptance Tests:
  1. After installing cable but before splicing and terminating, perform insulation resistance test with 1000 V megger on each phase conductor.
  2. Check insulation resistance after each splice and/or termination to ensure that cable system is ready for acceptance testing.
6. Acceptance Tests:
  1. Ensure that terminations and accessory equipment are disconnected.
  2. Ground shields, ground wires, metallic armour and conductors not under test.
  3. Leakage Current Testing:
    1. Raise voltage in steps from zero to maximum values as specified by manufacturer for type of cable being tested.
    2. Hold maximum voltage for time period specified by manufacturer.
    3. Record leakage current at each step.
  4. High Potential (Hipot) Testing shall be completed in the factory.
    1. Conduct Hipot Testing in accordance with IPCEA recommendations.
7. Provide Engineer with list of test results showing location at which each test was made, circuit tested and result of each test.
8. Remove and replace entire length of cable if cable fails to meet any of the test criteria.

END OF SECTION 26 05 44

**PART 1 - GENERAL****1.1. SCOPE**

1. Contractor shall furnish, deliver, install and test the quick connection cabinets as specified herein and in accordance with the drawings.
2. Voltage, Phase Configuration, Bracing and Interrupting Rating (if applicable) as per supplied single line.

**1.2. QUALITY ASSURANCE**

1. Quick connection cabinet shall be listed under the UL 891 or CSA C22.2 No. 76 standard. SPE-1000 or panel designation not acceptable.
2. Connection cabinet manufacturer shall provide a complete factory assembled and tested connection cabinet.
3. All units to be Insulation tested to 2500VDC.
4. All internal power conductors to be 600VAC or greater.

**1.3. SUBMITTALS**

1. Contractor shall submit manufacturer's drawings and data of connection cabinet for Engineer's approval prior to start of fabrication. Drawings and data shall include, as a minimum, dimensioned general arrangement drawings, UL or CSA listing information including UL control or file number, component data, mounting provisions, conduit entry locations and installation instructions.
2. Provide installation manual for Engineer's review at the time of submittal.

**1.4. WARRANTY**

1. All products shall be free from defects in materials and workmanship for a period of 1 year from date of its plant shipment.

**PART 2 - PRODUCTS****2.1. GENERAL**

1. Provide a three-way, manual transfer switch connection cabinet which allows for isolated load bank testing and portable generator tie-in at the same time.
2. Cabinet ratings: 800A, 208V (3PH + G), 25kAIC

3. All equipment shall be new.
4. Contractor shall be responsible for the equipment until it has been installed and is finally inspected, tested and accepted in accordance with the requirements of this Specification.

## 2.2. MATERIALS

1. Connection cabinet enclosure shall be Type 3R, constructed of continuous seam-welded, powder coated Aluminum. The main access shall be through a hinged door that extends the full height of the enclosure. Access for cables shall be via a) drawn flange cable entry openings in the bottom of the enclosure for wall mount units, or b) hinged lower door for pad mount units. A hinged flap door shall be provided to cover the cable openings when cables are not connected; the hinged flap door shall allow cable entry only after the main access door has been opened. Enclosure shall be powder coated after fabrication; color shall be wrinkle gray RAL 7035.
2. Bottom access door should run complete width of enclosure and should not be capable of opening with main door closed. Bottom latch accessible only from within enclosure.
3. All hinges to be stainless steel and quick release type to allow for quick replacement of doors or to ease installation.
4. Door lock to be three-point type. Pad lock hasp should be integrated into door handle.
5. All connection cabinets to have integrated cable rake to insure operator protection and inability to disconnect plugs with enclosure's main door closed.
6. All power bus-work to be tin plated copper to be at minimum 1 square inch / 1000 amps. Aluminum bus not acceptable.
7. Cabinet shall be equipped with three interlocked, moulded case circuit breakers to enable switching between permanent generator, load bank and/or portable generator.
8. Circuit breaker for permanent generator shall be equipped with an LSI trip unit. Load bank and portable generator breakers shall be thermal magnetic.
9. All connections are side entry/exit.

## 2.3. LOAD BANK CONNECTIONS

1. Load bank connectors shall consist of single pole Eaton E1016 type cam-style female connectors and grounding terminals housed within a pad-lockable enclosure.
2. Cam-style female connectors (inlets) shall be UL Listed, single-pole separable type, three per phase and rated at 600VAC. Cam-style female connectors shall be color coded. Cam-style female connectors shall be provided for each phase and for ground. The ground cam-style female connectors shall be bonded to the enclosure, and a ground lug shall be provided for connection of the facility ground conductor.

None of the cam-style female connectors shall be accessible unless the main access door is open.

3. Cam plate must be conductive metal with respective phase indication mechanically etched into plate. Stickers or labels are not acceptable.
4. Each cam-lock phase to be complete with weatherproof, color matching, spring loaded cover plate.

## **2.4. PORTABLE GENERATOR CONNECTIONS**

1. Portable generator connectors shall consist of single pole Eaton E1016 type cam-style male connectors and grounding terminals housed within a pad-lockable enclosure.
2. Cam-style male connectors (inlets) shall be UL Listed single-pole separable type, three per phase and rated at 600VAC. Cam-style male connectors shall be color coded. Cam-style male connectors shall be provided for each phase and for ground and shall also be provided for neutral if required. The ground cam-style male connectors shall be bonded to the enclosure, and a ground lug shall be provided for connection of the facility ground conductor. None of the cam-style male connectors shall be accessible unless the main access door is open.
3. Cam plate must be conductive metal with respective phase indication mechanically etched into plate. Stickers or labels are not acceptable.
4. Each cam-lock phase to be complete with weatherproof, color matching, spring loaded cover plate.

## **2.5. ACCEPTABLE MANUFACTURER**

1. Foxfab Power Solutions, FFCC-S1 Series

## **PART 3- EXECUTION**

### **3.1. INSTALLATION**

1. Prior to installation of connection cabinets, Contractor shall examine the areas and conditions under which the connection cabinet is to be installed and notify the Engineer in writing if unsatisfactory conditions exist.
2. Connection cabinet shall be installed as shown on the drawings and per the manufacturer's installation instructions.
3. Ensure upstream devices are off. Lock out and ensure connection cables are voltage free before performing any electrical connections.

### **3.2. FIELD TESTING**



1. Prior to energizing connection cabinet, the Contractor shall perform the following checks and tests as a minimum:
  1. Verify mounting and connections are complete and secure to torque requirements as indicated by installation manual.
  2. Ensure internal components and wiring are secure.
  3. Perform continuity check of all circuits.
  4. Confirm all enclosure grounding is in place and has an overall continuity of less than 1 ohm from incoming GRD lug/cam-loc.
  5. Perform 1,000 VDC megger test on phase and ground cables.
  6. Verify dead-front is secure and all warning labels are undamaged and clearly visible.
  7. Confirm operation of the connection cabinet ground receptacle by attaching a plug to the connection cabinet ground receptacle and then verify that the plug is grounded to the facility ground.

END OF SECTION 26 12 20

## **PART 1- GENERAL**

### **1.1. GENERAL**

1. Division 1, General Requirements is part of this Section and shall apply as if repeated here.

### **1.2. SHOP DRAWINGS AND PRODUCT DATA**

1. Submit shop drawings and product data in accordance with Division 1.
2. Indicate on shop drawings
  1. Floor anchoring method and foundation template.
  2. Dimensioned cable entry and exit locations.
  3. Dimensioned position and size of bus.
  4. Overall length, height and depth.
  5. Dimensioned layout of internal and front panel mounted components.
3. Include time-current characteristic curves for breakers and fuses rated 400 A and higher.

### **1.3. MAINTENANCE DATA**

1. Provide maintenance data for service entrance board for incorporation into manual specified in Division 1.
2. Submit 3 copies of maintenance data for complete assembly including components.

## **PART 2- PRODUCTS**

### **2.1. SERVICE ENTRANCE BOARD**

1. Rating: 208 V, 3 P, 4 W, 1200 A, short circuit current 65 kA (rms symmetrical).
2. NEMA 1 enclosure.
3. Cubicles: free standing, dead front, size as indicated.
4. Barrier metering section from adjoining sections.

5. Provision for installation of power supply authority metering in barriered section, as per power supply authority requirements.
6. Owner's digital metering.
7. Hinged access panels with captive knurled thumb screws.
8. Bus bars and main connections: tin plated aluminum.
9. Bus from load terminals of main breaker via metering section to main lugs of distribution section.
10. Bus Bracing Rating: minimum 50 kA.
11. For all switchboards rated 1200A and higher, provide additional 305mm (12") wide cable wire-way for each section.
12. All breakers 400A and over are to be single mounted for easier cable / wire bending. Provide additional space as required.
13. Identify phases with colour coding.
14. To be equipped with sprinkler shields.

## **2.2. MAIN BREAKER**

1. Main breaker sized as indicated and as per Section 26 28 21 – Moulded Case Circuit Breakers.
2. LSIG electronic trip unit with ARMS.

## **2.3. MOULDED CASE CIRCUIT BREAKERS**

1. See Section 26 28 21 - Moulded Case Circuit Breakers.

## **2.4. PANEL SURGE PROTECTION (TVSS)**

1. On the emergency distribution section, provide integrated surge protection equipment rated 160 000A / phase surge current, EMI/RFI noise attenuation, status indicator lights on each phase, audible alarm, transient counter, push to test, PQ meter, meeting industry standards UL 1449, ANSI/IEEE C62.41-1991, ANSI/IEEE C62.45-1987.
2. Acceptable Standard: Total Protection Solutions Service Track ST200
3. Refer to single line diagram for other sizes.

## **2.5. GROUNDING**

1. Copper ground bus extending full width of cubicles and located at the bottom.
2. Lugs at each end of size 4/0 - 350 kcmil grounding cable.
3. Bond non-current carrying metal parts, including switchgear framework, enclosure and bases to ground bus.

## **2.6. ELECTRICAL METERING & POWER MANAGEMENT SYSTEM**

1. Metering device equal to Eaton PXM3000 or Schneider PowerLogic ION.
2. Internet enabled power quality meter, with embedded web server. Built-in capability to send alarm notifications via e-mail without any additional hardware or software upgrades.
3. Monitored and displayed parameters:
  1. Voltage, current: per phase minimum, maximum, average, trend graph analysis, export and print.
  2. Power: power factor, apparent, real, reactive and frequency.
  3. Energy, demand: forward, reverse, net, sum, TOU, profile, previous month-to-month, week-to-week comparisons, graph analysis, data export and print.
4. Complete with Input / Output card for communication with BMS. Coordinate BMS language with controls contractor on site.

## **2.7. POWER SUPPLY AUTHORITY METERING**

1. Separate compartment and metal raceway for exclusive use of power supply authority metering.
2. Mounting accessories and wiring for metering supplied by *Supply Authority*:
  1. Potential transformers.
  2. Current transformers.
  3. Watthour meter.
  4. Demand meter with kW.h register.
3. Provide dedicated phone line for interval metering. Phone line to be installed in conduit, if required by *Supply Authority*. Coordinate all requirements with *Supply Authority*.
4. Provide # 2 AWG insulated bonding conductor from main switchboard to meter cabinet.
5. Provide 15A, 120V receptacle in meter cabinet. Confirm all requirements with *Supply Authority*.

**2.8. FINISHES**

1. Apply finishes in accordance with Section 26 05 00 – Common Work Results - Electrical.
  1. Service entrance board exterior grey.
  2. Cubicle interiors: white preferred.
  3. Supply 1 spray can touch up enamel, one for each colour.

**2.9. EQUIPMENT IDENTIFICATION**

1. Provide equipment identification in accordance with Section 26 05 00 – Common Work Results - Electrical.
2. Nameplates:
  1. White plate, black letters, size 7.
  2. Complete board labeled: Main Switchboard.
  3. Main disconnect labeled: "Main Breaker".
  4. Branch disconnects labeled: "Feeder No. 1", "Feeder No. 2", "Feeder No. 3", as indicated.

**PART 3- EXECUTION****3.1. INSTALLATION**

1. Locate service entrance board as indicated and bolt to floor. Coordinate location with incoming cables.
2. Provide 100mm concrete housekeeping pad under equipment.
3. Connect main secondary service to line terminals of main breaker.
4. Connect load terminals of main breaker to feeder as indicated.
5. Check factory made connections for mechanical security and electrical continuity.
6. Reconnect existing ground conductor.
7. Check trip unit settings and fuse sizes against coordination study to ensure proper working and protection of components.

END OF SECTION 26 24 02

**PART 1- GENERAL****1.1. GENERAL**

1. Division 1, General Requirements is part of this Section and shall apply as if repeated here.

**1.2. SHOP DRAWINGS**

1. Submit shop drawings in accordance with Division 1.
2. Drawings to include electrical detail of panel, branch breaker type, quantity, ampacity and enclosure dimension.

**1.3. PLANT ASSEMBLY**

1. Install circuit breakers in panelboards before shipment.
2. In addition to CSA requirements manufacturer's nameplate must show fault current that panel including breakers has been built to withstand.

**PART 2- PRODUCTS****2.1. PANELBOARDS**

1. Panelboards: product of one manufacturer.
2. Bus and breaker rated for the following symmetrical interrupting capacity, unless otherwise indicated. Series rated panels are acceptable.
  1. 120 / 208 V Panelboards – 65 kA I.C.  
  
Refer to singleline diagram for other values.
3. 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.
4. Panelboards: mains, number of circuits, and number and size of branch circuit breakers as indicated.
5. Each panelboard to be equipped with an integral lock complete with two keys. All panelboards to be keyed alike.

6. Aluminum bus with neutral of same ampere rating as mains.
7. Mains: suitable for bolt-on breakers.
8. Trim and door finish: baked grey enamel
9. Panelboards to be equipped with sprinkler shields.
10. Provide 15% space for future breakers in all 120/208V panels, unless otherwise noted.
11. NEMA 1 enclosure.

## **2.2. BREAKERS**

1. Breakers: to Section 26 28 21 - Moulded Case Circuit Breakers.
2. Breakers with thermal and magnetic tripping in panelboards except as indicated otherwise.
3. Main breaker: separately mounted on top or bottom to suit cable entry. When mounted vertically, down position should open breaker.

## **2.3. EQUIPMENT IDENTIFICATION**

1. Provide equipment identification in accordance with Section 26 05 00 – Common Work Results - Electrical.
2. Nameplate for each panelboard size 4 engraved, as indicated
3. Nameplate for each circuit in distribution panelboards size 2 engraved, as indicated.
4. Complete circuit directory with typewritten legend showing location and load of each circuit.

## **2.4. ACCEPTABLE MATERIALS**

1. Schneider
2. Eaton

## **PART 3- EXECUTION**

### **3.1. INSTALLATION**

1. Locate panelboards as indicated and mount securely, plumb, true and square, to adjoining surfaces.

2. Mount panelboards to height specified in Section 26 05 00 – Common Work Results - Electrical or as indicated.
3. Connect loads to circuits.
4. Connect neutral conductors to common neutral bus with respective neutral identified.

### **3.2. PANELBOARD LAYOUTS**

1. Follow panelboard details attached or on drawings, for layout of circuit and breaker sizes wherever possible.
2. Record all changes to panelboard details and submit as part of As-Built drawing set for review at completion of the project. Insert copies in each maintenance manual.

END OF SECTION 26 24 17



PANELBOARD SCHEDULE -- EDP-201										
WIRE & COND	SERVICE	BRKR	Load kW	CCT. No.		CCT. No.	Load kW	BRKR	SERVICE	WIRE & COND
Refer to 1/E102	EP'A'	400A/3P	---	1		2	---	400A/3P	EP'B'	Refer to 1/E102
				3		4				
				5		6				
Refer to 1/E102	EP'C'	100A/3P	---	7		8	---	400A/3P	EP'D'	Refer to 1/E102
				9		10				
				11		12				
Refer to 1/E103	EP'E'	150A/3P	---	13		14	---	100A/3P	SPD	Refer to 1/E102
				15		16				
				17		18				
Reconnect Existing	Fire Alarm	15A	---	19		20	---	100A/3P	SPARE	---
Reconnect Existing	Exit Lights East	15A	---	21		22				
Reconnect Existing	Exit Lights West	15A	---	23		24				
Reconnect Existing	Air Supply Unit	125A/3P	---	25		26	---	400A/3P	Elevator Supply	Reconnect Existing
				27		28				
				29		30				
Reconnect Existing	Condenser Unit #2	50A/3P	---	31		32	---	70A/3P	Condenser Unit #1	Reconnect Existing
				33		34				
				35		36				
---	SPARE	50A/3P	---	37		38	---	70A/3P	SPARE	---
				39		40				
				41		42				
---	SPARE	15A	---	43		44	---	15A/3P	SPARE	---
---	SPARE	15A	---	45		46				
---	SPARE	15A	---	47		48				
---	SPARE	15A	---	49		50	---	20A/3P	SPARE	---
---	SPARE	15A	---	51		52				
---	space	---	---	53		54				
---	space	---	---	55		56	---	---	space	---
---	space	---	---	57		58	---	---	space	---
---	space	---	---	59		60	---	---	space	---

CONNECTED LOAD: 0.0 kW

MAX. CURRENT: 0.0 Amps

PANEL DESCRIPTION: Panel EDP-201

PANEL RATING: 800A, 120/208V, 3P 4W, 65kAIC - 60 CCT

**PART 1- GENERAL****1.1. GENERAL**

1. Division 1, General Requirements is part of this Section and shall apply as if repeated here.

**1.2. PRODUCT DATA**

1. Submit product data in accordance with Division 1.
2. Include time-current characteristic curves for breakers with ampacity of 400A and over or with interrupting capacity of 22,000A symmetrical (rms) and over at system voltage.

**PART 2- PRODUCTS****2.1. BREAKERS - GENERAL**

1. Bolt-on moulded case circuit breaker: quick-make, quick-break type, for manual and automatic operation with temperature compensation for 40°C ambient.
2. Common-trip breakers: with single handle for multi-pole applications.
3. 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 3-10 times current rating.

**2.2. THERMAL MAGNETIC BREAKERS**

1. 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.

**PART 3- EXECUTION****3.1. INSTALLATION**

1. Install circuit breakers as indicated.

END OF SECTION 26 28 21

## **PART 1- GENERAL**

### **1.1. GENERAL**

1. Division 1, General Requirements is part of this Section and shall apply as if repeated here.

### **1.2. PRODUCT DATA**

- .1 Submit product data in accordance with Division 1.

## **PART 2- PRODUCTS**

### **2.1. DISCONNECT SWITCHES**

- .1 Enclosed manual air break switches in non-hazardous locations to CSA C22.2 No. 4-04 (2009).
- .2 Fuse holder assemblies to CSA C22.2 No. 39-13.
- .3 Fusible and non-fusible disconnect switch in CSA Enclosure size as indicated.
- .4 Provision for padlocking in on-off switch position by three locks.
- .5 Mechanically interlocked door to prevent opening when handle in ON position.
- .6 Fuses: size as indicated, to Section 26 28 14 - Fuses - Low Voltage.
- .7 Fuse holders: suitable without adaptors, for type and size of fuse indicated.
- .8 Quick-make, quick-break action.
- .9 ON-OFF switch position indication on switch enclosure cover.

### **2.2. EQUIPMENT IDENTIFICATION**

- .1 Provide equipment identification in accordance with Section 26 05 00 – Common Work Results - Electrical.
- .2 Indicate name of load controlled on size 4 nameplate.

### **2.3. ACCEPTABLE MATERIALS**

.1 Square D

.2 Eaton

### **PART 3- EXECUTION**

#### **3.1. INSTALLATION**

- .1 Install disconnect switches complete with fuses, if applicable.
- .2 For all disconnects where fuse and wire sizes have a lower rating then the disconnect, a lamacoid label is to be applied indicating "MAX FUSE SIZE TO BE \_\_\_\_ AMPS". To be filled in with the value of the specific fuse size.

END OF SECTION 26 28 23

**PART 1 - GENERAL****1.1. GENERAL**

1. Division 1, General Requirements is part of this Section and shall apply as if repeated here.

**1.2. DESCRIPTION OF SYSTEM**

1. Provide a 175 kW, 208V, 3 phase, 4 wire natural gas, standby generator to supply electrical power in the event of failure of the normal supply, consisting of a liquid cooled engine, an AC alternator and system controls with all necessary accessories for a complete operating system, including but not limited to:
2. Generating system consists of:
  1. gas engine,
  2. alternator,
  3. alternator control panel,
  4. battery charger, heater and battery,
  5. gas supply system,
  6. exhaust system,
  7. structural steel mounting base,
  8. sound attenuated weather-proof outdoor enclosure, with acoustically treated intake and air relief, with motorized damper,
  9. base support,
  10. enclosure mounted stack,
  11. block heater,
  12. 60A, 120 / 240V, 1 phase, 3 wire outdoor enclosure load centre and enclosure lighting,
  13. outdoor enclosure cooling, heating and ventilation system, with all necessary controls,
  14. radiator and cooling system,
3. System designed to operate as emergency standby.

4. Emergency generator package to be pre-wired with all loads, such as battery charger, block heater, lighting, motorized dampers and electric force flow heater connected to load centre.

### 1.3. SHOP DRAWINGS

1. Submit shop drawings in accordance with Division 1.
2. Include:
  1. engine: make and model, with performance curves,
  2. alternator: make and model,
  3. voltage regulator: make, model and type,
  4. control panel and main breaker,
  5. generator decrement curves against generator main breaker curve,
  6. battery: make, type and capacity,
  7. battery charger: make, type and model,
  8. battery heater: make, type and model,
  9. alternator control panel: make and type of meters and controls
  10. governor type and model,
  11. vibration pads
  12. cooling air requirements in m<sup>3</sup>/s and maximum fan pressure – min. 125 PA required,
  13. ISO rating of engine,
  14. flow diagrams for:
    1. gas fuel
    2. lubricating oil
    3. cooling air
  15. dimensioned drawing showing complete generating set mounted on steel base, including vibration isolators, sound attenuated weather-proof outdoor enclosure, exhaust system and total weight,
  16. continuous full load output of set at 0.8 PF lagging,
  17. description of set operation including:

1. automatic starting and transfer to load and back to normal power, including time in seconds from start of cranking until unit reaches rated voltage and frequency,
  2. manual starting,
  3. automatic shut down and alarm on:
    1. Overcranking
    2. Overspeed
    3. High engine temp
    4. Low lube oil pressure
    5. Short circuit
    6. Alternator overvoltage
    7. Lube oil high temperature
    8. Thermistor over temperature on alternator
  4. Manual remote emergency stop.
18. Enclosure Details
19. Sound attenuation data.
20. Emissions Data Sheet – with NO<sub>x</sub>, THC and CO.

#### **1.4. QUALITY CONTROL SUBMITTALS**

1. Prepare complete electronic set of documents for distribution and include:
  1. Reviewed drawings as above with as-built deviations, if any, marked thereon.
  2. Wiring diagram of control panel, engine and interconnections.
  3. Specific instructions for installation of equipment instructions for placing equipment into operation.
  4. Description of operation with reference to the schematic wiring diagram.
  5. Engine manual including operating and parts information.
  6. Generator and voltage regulator manual(s) including wiring and assembly drawings.
  7. Battery charger manual, including wiring diagram and parts list.
  8. Transfer switch manual and parts list (if switch is supplied).
  9. Test report per factory inspection and test procedures.

#### **1.5. OPERATION AND MAINTENANCE DATA**

1. Provide operation and maintenance data for natural gas generator for incorporation into

maintenance manual.

2. Include in Operation and Maintenance Manual Instructions for particular unit supplied and not general description of units manufactured by supplier, and:
  1. operation and maintenance instructions for engine, alternator, control panel, battery charger, battery, gas supply system, enclosure ventilation system, exhaust system and accessories, to permit effective operation, maintenance and repair.
  2. technical data:
    1. illustrated parts lists with parts catalogue numbers,
    2. schematic diagram of electrical controls,
    3. flow diagrams for:
      1. Fuel system
      2. Lubricating oil
      3. Cooling system
    4. certified copy of factory test results,
    5. maintenance and overhaul instructions and schedules,
    6. precise details for adjustment and setting of time delay relays or sensing controls which are required on site adjustment.

#### **1.6. MAINTENANCE MATERIALS**

1. Provide maintenance materials in accordance with Division 1.

#### **1.7. SOURCE QUALITY CONTROL**

1. Factory test generator set including engine, alternator, control panels, and accessories.
2. The emergency generator may be factory tested at unity power factor if the alternator unit has been factory tested at rated power factor and load at the alternator manufacturer's facility.
3. A copy of the alternator manufacturer's factory test report shall be included with the alternator unit.
4. Submit certified copy of test results to Consultant for approval before shipment to site.

#### **1.8. MANAGEMENT AND DISPOSAL**

1. Separate and recycle waste materials in accordance with Division 01.
2. Remove from site and dispose of all packaging materials at appropriate recycling facilities.



3. Collect and separate for disposal: paper, plastic, polystyrene and corrugated cardboard packaging material in appropriate on-site bins for recycling in accordance with Waste Management Plan.
4. Divert unused wiring materials from landfill to metal recycling facility as approved by Engineer.
5. Place materials defined as hazardous or toxic in designated containers.
6. Divert unused lubricating oil materials from landfill to oil recycling facility approved by Engineer.
7. Divert unused antifreeze from landfill to antifreeze recycling facility approved by Engineer.
8. Fold up metal banding, flatten and place in designated area for recycling.

#### **1.9. WARRANTY**

1. Full warranty period for all components shall be 60 months or 1500 operating hours, whichever occurs first.

### **PART 2- PRODUCTS**

#### **2.1. NATURAL GAS – GENERATOR SET**

1. Alternator and exciter, gas set, instruments, meters and switches shall be CSA approved.
2. Gas – generator performance and accessories shall conform to CSA Standard C282. Both sets to be identical.

#### **2.2. GAS ENGINE**

1. Gas engine: to ISO 3046/1 – 1981.
  1. engine: standard product of current manufacture, from company regularly engaged in production of such equipment.
2. Four cycle engine, synchronous speed 1800 r/min.
3. Capacity:
  1. rated continuous power in kW at 1800 r/min, after adjustment for power losses in auxiliary equipment necessary for engine operation; to be calculated as follows:  
rated continuous output = generator kW / generator Eff @ FL
    1. under following site conditions:
      1. Altitude: 100 feet

2. Ambient temperature: 104 degrees F
  3. Relative humidity: 60%
2. engine overload capability 110% of continuous output for 1 h within 12 h period of continuous operation.
3. engine shall be sized to ensure that generator can deliver +/- 2% of its rated voltage and frequency within 15 seconds of loss of normal power.
4. Engine oil drip tray, 16 AWG minimum, galvanized steel with 50mm (2") lip suitable for location on floor between vibration isolators. Extend tray as far as possible to protect floor and be readily removable without disturbing any components. Tray may be in two parts.

### **2.3. COOLING SYSTEM**

1. liquid cooled: heavy duty industrial radiator mounted on generating set base with engine driven pusher type fan to direct air through radiator from engine side. Thermostatically controlled, with ethylene glycol anti-freeze non-sludging above minus 50°F,
2. to maintain manufacturer's recommended engine temperature range at 10% continuous overload in ambient temperature of 104°F,
3. radiator complete with a flange for duct connection,
4. engine cooling system shall include built-in centrifugal type water circulating pump and thermostat to maintain proper jacket water temperature under each load condition.
5. provide radiator flexible duct connection,
6. the external static pressure of the diesel radiator fan shall not be less than 0.25 KPA at 38.24 cubic meters/second maximum,
7. readily accessible drain valves for draining coolant from engine and radiator.
8. Circuits supplying cooling system control equipment shall be connected ahead of generator disconnecting means and overcurrent devices.

### **2.4. FUEL**

1. Natural Gas – 10" WC pressure

### **2.5. BLOCK HEATER**

1. Plug connected, thermostatically controlled liquid coolant heater connected to line side of automatic transfer switch, able to maintain coolant around combustion chambers at a sufficiently high temperature to allow engine to start in room ambient 0°C as per requirements of clause 2.2.4.
2. All engine and generator heaters shall be automatically disconnected when the engine is running. Each heater shall have an independent means of being disconnected or switched

off for maintenance.

## **2.6. GOVERNOR**

1. Electronic type.
2. Manual speed adjustment, micrometer screw type, also shutdown lever and overspeed stop.
3.  $\pm 0.5$  speed regulation, steady state: No-load to full-load and full-load to no-load.
4.  $\pm 8\%$  speed regulation, transient peak: no load to full load and full load to no load.
5.  $\pm 0.5$  stability at any constant load and free from further hunting or oscillation.
6. Recovery time, from instant load change to steady state condition, better than three seconds.

## **2.7. LUBRICATION SYSTEM**

1. pressure lubricated by engine driven pump,
2. lube oil filter: replaceable, full flow type, removable without disconnecting piping,
3. lube oil cooler,
4. engine sump drain valve,
5. oil level dip-stick,
6. lube oil pressure and temperature gauges.
7. Operational requirements are such that unit may lay idle for periods up to one month and then be required to start and assume full rated load within specified (15 seconds) time period. To protect service life of engine components, provide an electrical motor driven, integrally mounted, gear type oil priming pump with interval timer and breaker type combination starter. Starter mounted in control panel. Motor shall be of splash proof enclosure. Lubricating oil pressure switch to stop priming pump when engine is running. Where pump is not being provided, submit a letter certifying that oil pump is not required for this project and will not detract from service life of engine components.

## **2.8. STARTING SYSTEM**

1. Positive shift, gear engaging starter 12 Vdc,
2. Cranking limiter to provide 3 cranking periods of 10 sec duration, each separated by 10 sec rest,
3. Starting battery, heavy duty, lead acid 120V rated at minimum 925 CCA, sealed type, hard rubber cased. Ensure battery is of sufficient capacity to crank engine at 0 deg C (32 deg F) for 60 seconds continuously without voltage dropping below 80% rated voltage and without

using more than 25% of ampere hour capacity. Provide all intercell and connecting battery cables as required.

4. Battery warmers: Thermostatically controlled, UL listed, factory-wired.
5. Battery rack with support legs, coated with acid resistant paint.
6. Heavy duty multi-strand cables of sufficient length and capacity to allow the battery to be located on either side of engine. Protect cables within properly-sized conduit.
7. Battery charger, 120V AC input, 10A and 12V output. Static and chassis type with automatic boost and float charging with transistorized voltage control and recycle timer, boost and float rate separately adjustable, input and output breakers, manual-automatic switch, current limit protection, voltmeter and ammeter.
8. Battery charger shall be capable of recharging a completely discharged battery to 80% of capacity within 4 hrs. and to full capacity in not more than 12 hrs.
9. Battery charger to be mounted inside of generator control panel unless indicated otherwise on Drawings.
10. Other features to include:
  1. AC input breaker,
  2. AC surge protection,
  3. soft start control,
  4. DC output fuse protection,
  5. current limit protection,
  6. digital voltmeter and ammeter (1% accuracy),
  7. pilot light indication for:
    1. AC power
    2. Float control
    3. Equalize control
    4. Soft start control
  8. automatic equalize after discharge complete with equalize timer, adjustable 1-30 hours,
  9. manual initiate, or terminate of equalize timer,

## **2.9. ALTERNATOR**

1. Alternator: to NEMA MG1-1978 and to CSA C22.2 No. 100-1978.
2. Rating: As Indicated on Drawings.
3. Output at 40°C ambient:
  1. 100% full load continuously,
4. Revolving field, brushless, single bearing.
5. Two bearings, pre-lubed and sealed, anti-friction type 50,000 hr. Minimum B.10 life.
6. Drip proof.
7. Self-ventilated.
8. Amortisseur windings.
9. Synchronous type.
10. Horizontal synchronous type in protected enclosure with ground lug and readily accessible terminal box.
11. Dynamically balanced rotor permanently aligned to engine by flexible disc coupling.
12. Exciter: permanent magnet pilot exciter.
13. Class H insulation on windings.
14. Voltage regulator: digital thyristor controlled rectifiers with phase controlled sensing circuit:
  1. stability: 0.25% maximum voltage variation at any constant load from no load to full load,
  2. regulation: 1.5% maximum voltage deviation between no-load steady state and full-load steady state,
  3. transient: stable supply voltage to be maintained for one-step application of maximum site design load. Reduction in frequency shall not exceed 10% and recovery time shall not exceed 3 sec.
15. Alternator: capable of sustaining 300% rated current for period not less than 10 s permitting selective tripping of down line protective devices when short circuit occurs.
16. Temperature rise not to exceed EEMAC MGI-22.40 for insulation class used and in 40 deg C (105 deg F) ambient. Provide hi temperature sensor and shutdown.
17. The transient dip in generator output voltage, as shown on an oscilloscope or undamped voltmeter, shall not exceed 25% at full voltage starting off an induction motor with starting KVA equal to the generator.

## 2.10. CONTROL PANEL

1. Totally enclosed, mounted on generator with vibration dampers.
2. Panel door with formed edges and lockable handle with 2 keys.
3. Flexible conductors between door and fixed panel.
4. Vibration isolated engine instrument panel with:
  1. lube oil pressure gauge,
  2. lube oil temperature gauge,
  3. coolant temperature gauge,
  4. elapsed time meter: non-tamper type.
  5. Digital voltmeter, ammeter, and phase selector switches
  6. Frequency meter that is not a reed type
5. The generator control system shall be a fully integrated and multi-purpose microprocessor based control system for standby emergency engine generators.
  1. This configuration shall contain a complete automatic engine start-stop control complete with engine start button, off-auto-manual selector switch, emergency stop button and provision for remote emergency stop button.
  2. The control panel shall display all pertinent unit parameters including:
    1. Generator Status - Current unit status in real time
    2. Engine operating conditions - Realtime readouts of the engine and alternator values:
      1. Oil pressure and optional oil temperature
      2. Coolant temperature and level
      3. Engine speed
      4. DC battery voltage
      5. Run time hours
      6. Generator voltages, amps, frequency
      7. Power factor
    3. Generator Commands
    4. Current engine start/stop status
    5. Alarm Status - Current alarm(s) condition
      1. Low or high AC voltage
      2. Low or high battery voltage
      3. Low or high frequency

4. Pre-low or low oil pressure
  5. Pre-high or high oil temperature (optional)
  6. High, low and critical low fuel levels (where applicable)
  7. Overcrank
  8. Over and under speed
  9. Unit not in “Automatic Mode”
6. Alarm Log
  1. Memory of last twenty alarm events (date and time stamped)
7. Operating parameters
6. Operating lights, panel mounted
  1. “Normal power” pilot light
  2. “Emergency power” pilot light
  3. Green pilot lights for breaker on and red pilot lights for breaker off
  4. Lamp test button
7. Alternator output breaker:
  1. One mainline, moulded case circuit breaker with LSI electronic trip unit, carrying the UL/CSA mark shall be factory installed on each generator. The breaker shall be rated between 100 to 125% of the rated ampacity of the genset.
  2. Lockable in the closed position.
  3. Breaker position to be monitored with local and remote annunciation.
8. Automatic shutdown and alarms with NO / NC contacts wired to terminal block for remote annunciation on:
  1. engine overcrank,
  2. engine overspeed,
  3. engine high temperature,
  4. engine low lube oil pressure,
9. Battery powered, alphanumeric, text-based display to indicate individual faults as per Table 1 of C282-15.

**2.11. REMOTE ANNUNCITOR**

1. Provides remote monitoring and LED annunciation of up to 18 generator parameters including low fuel level.
2. Form A output relays with selectable functions.
3. Power supplied from generator battery.
4. RS485 communication.
5. Compliant with NFPA 110.
6. Alarm Horn: 90dB @ 10cm

**2.12. STRUCTURAL STEEL MOUNTING BASE**

1. Complete generating set mounted on heavy-duty fabricated structural steel base of sufficient strength and rigidity to protect assembly from stress or strain and to maintain alignment during transportation, installation and under operating conditions on suitable level surface.
2. Sound insulation pads for installation between steel frame and concrete base.
3. Align engine and generator horizontally and vertically to within +/- .05mm, using steel shims where required. Provide machine bolts to secure units to base. Dowel feet of both units on two bearing generator assemblies.
4. Drive coupling, torsionally rigid flexible steel disc type, for connecting a single bearing generator to an engine via a S.A.E. housing.

**2.13. WEATHER PROTECTIVE ENCLOSURE**

1. The engine-generator set shall be factory enclosed in a heavy gauge steel enclosure constructed with 14 gauge corner posts, uprights and headers. Enclosure to be single wall construction insulated with sound absorbing insulation to 75 DBA @ 7 metres. The roof shall be made of aluminum, aid in the runoff of water and include a drip edge. The enclosure shall be coated with electrostatically applied powder paint, baked and finished to manufacturer's specification. The enclosure is to have large, hinged doors to allow access to the engine, alternator and control panel. The doors must lift off without the use of tools. Each door will have lockable hardware with identical keys. Padlocks do not meet this specification.
2. Enclosure shall be equipped with sound attenuated intake and exhaust air system, complete with motorized insulated dampers.
3. Enclosure shall be equipped with 1.5 kW – 120V SP blower operated heater complete with thermostat.
4. Provide heat detector 88°C ROR, connected to building fire alarm system.
5. Provide emergency battery pack, with two 20 watt heads and battery capacity for minimum 2



hours run time.

#### **2.14. INSULATION**

1. Generator Exhaust Pipe, Silencer: Provide 50 mm (2") thick high temperature (650 deg C) insulation complete with vapour barrier or 25 mm (1") thick insulation blanket equal to TEMP-MAT SS. Silencer to be critical grade with max  $\Delta P = 8''$  WC.
2. Supply and install 25 mm (1") thick prefabricated high temperature insulation blanket (650 deg C) on manifold and turbocharger (equivalent to Temp-Mat).

#### **2.15. EXHAUST SYSTEM**

1. Air intake filter, dry replaceable element type located close to inlet manifold.
2. Heavy duty, critical type, horizontally mounted exhaust silencer with condensate ANSI Flanges and drain cock complete with 19 mm (3/4") Schedule 40 drain pipe down to 150 mm (6") above floor.
3. Size silencer so that back pressure on engine at 100% load will not exceed engine maker's recommendation, assuming 13.7 m (45 ft.) of equivalent length of exhaust pipe.
4. Silencer to be located within enclosure.
5. The manufacturer shall supply its recommended stainless steel, flexible connector to couple the engine exhaust manifold to the exhaust system.
6. Expansion joints: stainless steel, corrugated, of suitable length, to absorb both vertical and horizontal expansion.
7. Exhaust stack: all welded with supports and expansion compensators as required.

#### **2.16. FUEL SYSTEM**

1. Natural Gas.
2. Connection to generator to be with flexible gas line.
3. Off-site natural gas.

Where the emergency generator is supplied by an off-site utility natural gas supply, the following conditions shall be met:

1. the piping serving the emergency generator or combination of emergency generators shall
  1. be independent of any other natural gas supply to the building;
  2. be protected in accordance with Clause 7.3.9.2 of CSA B149

3. have a manual valve identified by a permanent sign located at the point of entry of the piping system to the building and accessible only to authorized personnel; and
  4. have a position-indicating contact that will initiate a trouble alarm condition at the generator control panel when the valve is closed as indicated in CSA B149, Table 1. Testing shall be done in accordance with CSA B149, Table 5;
2. that any and all valves installed in the emergency gas supply line between the standardized pressure regulator station and the generator set fuel line connection shall "have a position-indicating contact" that will initiate a trouble alarm condition at the generator control panel; and
3. the natural gas supply to the generator shall be arranged in such a manner that the natural gas supply serving other appliances can be shut off without interrupting the supply to the emergency generator.

#### **2.17. COOLING AIR SYSTEM**

1. Engine ventilating system:
  1. air discharge and intake with weatherproof louvers,
  2. modulating thermostat,
  3. replaceable air intake filters.

#### **2.18. EQUIPMENT IDENTIFICATION**

1. Provide equipment identification in accordance with Section 16010 – General Electrical Requirements.
2. Control panel:
  1. size 4 nameplates for controls such as alternator breakers and program selector switch,
  2. size 3 nameplates for meters, alarms, indicating lights and minor controls.
3. Safety and warning label(s) on panel door, red labels with approximately 13 mm white letters, e.g. "DANGER 208 VOLTS - THIS AUTOMATIC SET CAN START ANY TIME- ISOLATE ALL SUPPLIES BEFORE ENTERING"

#### **2.19. FABRICATION**

1. Shop assemble generating unit including:
  1. 18" H base

2. engine and radiator
3. alternator
4. control panel
5. battery and charger
6. outdoor enclosure

## **2.20. ACCESSORIES, TOOLS AND SPARES**

1. Maintenance and operation instruction sheet, mounted on steel backplate with glass front or clear varnish protection, suitable for mounting on side of control panel.

## **2.21. PANEL ACCESSORIES**

1. Terminal blocks, tubular screw type with barriers and labels, Buchanan, Weid-muller, Phoenix, or approved equal by others.
2. Control fuses: in barrier type mounts ground connections lug.
3. Schematic wiring diagram: varnish protected and suitably secured inside door.

## **2.22. MANUFACTURER**

1. This system shall be supplied by an emergency generator manufacturer who has been regularly engaged in the production of engine-alternator sets, automatic transfer switches, and associated controls for a minimum of ten years, thereby identifying one source of supply and responsibility.
2. The manufacturer shall have printed literature and brochures describing the standard series specified, not a one of a kind fabrication.

## **2.23. ACCEPTABLE MANUFACTURERS**

1. Acceptable Manufacturers:
  1. Generac
  2. Toromont
  3. Sommers
  4. Kohler
  5. Cummins

6. Blue Star
2. Generator supplier shall have an in-place support facility within 200 kilometres of the site with technical staff, spare parts inventory and all necessary test and diagnostic equipment.

### **PART 3 - EXECUTION**

#### **3.1. PREPARATION**

1. Protection
  1. Protect equipment against corrosion, dampness, heavy rain, etc. Also provide adequate protection against damage or loss of components from time equipment leaves manufacturer's factory until received at destination.
  2. Include heavy duty plastic sheet or bags to cover components vulnerable to construction dust. Tag this protective covering to direct that it be left in place (where practical) until construction and clean-up is complete.
  3. Provide in each manual, a complete inventory of all spare parts, tools and accessories, a copy to accompany the shipment and a copy forwarded to CFB Representative.
  4. Ship equipment to Project Site. Arrange shipment to facilitate off-loading by Contractor's crane or skids at Project Site.
2. Preparation - Wiring
  1. Provide heat and oil resistant wire from safety switches and control devices. Run wire neatly in a harness, secure to engine and terminate at engine terminal box.
  2. Provide engine terminal box, CSA enclosure type 5, with numbered terminal strip to correspond with schematic diagram. Provide similar separate junction box for 120V circuits, i.e. exchanger solenoid valve, block heater etc.
  3. Power wiring shall not be less than #12 AWG type RW90 or equal. Control wire shall not be less than #14 AWG type RW90 or other acceptable manufacturer (except within assemblies).
  4. Provide wire markers using printed wire sleeves corresponding with schematic diagram wire numbering. Mfr: W.H. Brady sleeve markers or other acceptable manufacturer (except sub-assemblies).
  5. Adequately support wiring, run neatly, and protect from mechanical damage by grommets and shields. Wiring form between frame and hinged door to be vertical torsion- type over hinge side.

#### **3.2. INSTALLATION**

1. Install equipment complete in accordance with engine-generator equipment manufacturer's recommended methods of installation and operation, and in compliance with standards of Regulatory Authorities having jurisdiction.
2. Locate generating unit and install as indicated.
3. Install gas supply system as indicated.
4. Complete wiring and interconnections as indicated.
5. Start generating set and test to ensure correct performance of components.
6. Provide remote indication of safety conditions.
7. Provide generator running status indicator and generator trouble status indicator connections to fire alarm panel.

### **3.3. GROUNDING / BONDING**

1. Provide grounding of generator to two (2) local 3m long copper ground bars where generator is in a permanent location. Bonding of ground bars to be extended to automatic transfer switch and electrical service in building using minimum #1AWG copper wire.
2. Bond generator frame and enclosure to building / perimeter ground system, to satisfaction of local Electrical Safety Authority inspector and the Ontario Electrical Safety Code.

### **3.4. COMMISSIONING**

1. General: Upon completion of installation of emergency power supply system, installation shall be tested to ensure conformity to requirements of this Specification.
2. With engine in a "cold start" condition and emergency load at its normal operating level, a power failure shall be simulated by opening all switches or breakers that supply normal power to building or facility. Test load shall be that load which is normally served by emergency power system.
3. Operational test shall be continued for 1 h, after which normal power shall be restored to building or facility and satisfactory transfer of load and shutdown of emergency generating set shall be demonstrated.
  1. Following shall be observed and recorded:
    1. Time delay on start;
    2. Cranking time until the engine starts and runs;
    3. Time required to come up to operating speed;
    4. Time required for each life safety equipment transfer switch to be transferred to the emergency position;

5. Time required to achieve a steady-state condition with all switches transferred to emergency position;
  6. The time delay for the connection of any loads arranged to be connected to the emergency supply later than the life safety equipment.
  7. Voltage, frequency, and amperes at start-up and at any observed change in load and at maximum site design load;
  8. Engine oil pressure, water temperature where applicable, and battery charge rate one minute after start, at 5 min. intervals for first 15 min. and at 15 min. intervals thereafter;
  9. Time delay on retransfer for each transfer switch; and
  10. Time delay on engine cool-down and shutdown.
4. Load Test: Generator set shall be subjected to a 4 h 100% load test.
1. Building load may serve as part or all of test load if it is continuous, supplemented by a load bank if required. Full load shall equal nameplate kW rating of emergency generator set less applicable derating factors for site conditions. A unity power factor is acceptable for onsite testing, provided that rated load tests at rated power factor have been performed by manufacturer of the emergency generator set prior to shipment.
  2. Record all data every 15 min.
5. Cycle Crank Test
1. Cranking cycle as specified in 2.2.9.2 shall be observed and recorded.
  2. Crank cycle shall be repeated a second time to demonstrate that batteries have sufficient capacity for a total cranking time of 60 seconds.
  3. Time required to recharge batteries shall the requirement of 2.2.9.7.
6. Safety Shutdown and Alarms: Emergency supply shall be tested as recommended by manufacturer to ensure that all safety shutdowns and alarms respond as specified.
7. Ventilation: During tests, demonstrate that ventilating system can keep the room temperature from exceeding 38°C.
8. Receive parts, books, manuals, drawings and any spare parts or tools supplied with standby generator plant and handover such items to Engineer at completion and acceptance of installation.

### 3.5. TRAINING

1. Provide training for maintenance staff on operation and maintenance of emergency generator system.

2. Allow for two 4 hour on-site classroom type training sessions.

END OF SECTION 26 32 14

**PART 1 - GENERAL****1.1. GENERAL**

1. Division 1, General Requirements is part of this Section and shall apply as if repeated here.

**1.2. SECTION INCLUDES**

1. Materials and installation for automatic load transfer equipment which can monitor voltage on all phases of normal power supply, initiate cranking of standby generator unit, transfer loads and shut down standby unit.

**1.3. REFERENCES**

1. Conform to the requirements of CSA C22.2 No. 178.
2. UL1008 - Standard for Safety - Transfer Switch Equipment

**1.4. DESIGN CRITERIA**

1. Automatic load transfer equipment to:
  1. Monitor voltage on phases of normal power supply
  2. Initiate cranking of standby generator units on normal power failure or abnormal voltage on any one phase below preset adjustable limits for adjustable period of time.
  3. Transfer load from normal supply to standby unit when standby unit reaches rated speed and voltage
  4. Transfer load from standby unit to normal power supply when normal power restored, confirm by sensing of voltage on phases above adjustable pre-set limit for adjustable time period.
  5. Shut down standby unit after running unloaded to cool down using adjustable time delay relay.
  6. Permit manual bypass isolation of the transfer switch to either the normal or emergency power source without interrupting the load.

**1.5. SHOP DRAWINGS**

1. Submit shop drawings in accordance with Division 1.



1. Make, model and type.
2. Load classification:
  1. Computer loads
  2. Motor loads
  3. Ballast lamp loads
3. Single line diagram showing controls and relays.
4. Description of equipment operation including:
  1. Automatic starting and transfer to standby unit and back to normal power.
  2. Test control
  3. Manual control
  4. Automatic shutdown

#### **1.6. OPERATION AND MAINTENANCE DATA**

1. Provide operation and maintenance data for automatic load transfer equipment for incorporation into manuals.
2. Detailed instructions to permit effective operation, maintenance and repair.
3. Technical data:
  1. Schematic diagram of components, controls and relays
  2. Illustrated parts lists with parts catalogue numbers
  3. Certified copy of factory test results.

#### **1.7. SOURCE QUALITY CONTROL**

1. Complete equipment, including transfer mechanism, controls, relays and accessories factory assembled and tested in presence of consultant.

### **PART 2 – PRODUCTS**

#### **2.1. MATERIALS**

1. UL 1008 / CSA certification
2. Meters: to CAN3-C17-M84
3. Instrument transformers: to CAN3-C13-M83.

## **2.2. BREAKER OR CONTACTOR BASED TRANSFER EQUIPMENT**

1. Rating: as indicated on drawings.
2. WCR: 50,000A at 600V
3. Open Transition
4. Unswitched Neutral
5. In-Phase Transfer Operation
6. Dual Bypass Isolation
7. Top Entry for emergency feeds; Top Entry for Normal Power and Load feeds.
8. The automatic transfer switch shall consist of a power transfer module and a control module, interconnected to provide complete automatic operation. Mechanically held and electrically operated by a single solenoid mechanism energized from the source to which the load is to be transferred.
9. Rated for continuous duty and be inherently double throw.
10. Mechanically interlocked to ensure only one of two possible positions – normal or emergency.
11. Control module shall be supplied with a protective cover and be mounted separately from the transfer switch. The interconnecting wiring harness shall include a disconnect plug to disconnect all wires, including both sources of control power. Sensing and control logic shall be solid state and mounted on plug in printed circuit boards. Printed circuit boards shall be keyed to prevent incorrect installation. Interfacing relays shall be industrial control grade plug in type with dust covers.
12. The electrical rating of the bypass isolation switch shall equal or exceed that of the associated automatic transfer switch.
13. The automatic transfer and bypass isolation switch shall be the product of one manufacturer and be completely factory interconnected and tested so that only the service and load connections to the bypass isolation switch are required for field installation.
14. All interconnections between the transfer switch, bypass switch and isolation switch shall be silver plated copper bus bar. A visual position indicator shall be provided to indicate bypass isolation switch position, and availability of normal and emergency sources. A prominent and detailed instruction plate shall be furnished.
15. The control panel shall meet or exceed the voltage surge withstand capability in accordance

with IEEE Standard 472-1974 IANSI C37.90a-1974).

16. All components shall be designed for continuous duty and repetitive load.
17. The entire assembly shall be installed in indoor NEMA Type 1 enclosure.

### **2.3. OPERATION**

1. The automatic transfer switch control panel shall utilize solid state sensing on normal and emergency for automatic, positive operation. The following shall be provided:
  1. All phases of the normal supply shall be monitored line-to-line. Close differential voltage sensing shall be provided on all phases.
  2. The generator set shall be started when the normal supply at the transfer switch on one or more phases has been interrupted or is at a voltage that is less than 90% of the nominal system voltage for 2 sec.
2. A time delay on retransfer to normal source. The time delay shall be automatically bypassed if the emergency source fails and normal source is available. The time delay shall be field adjustable from 0.5 to 30 minutes and factory set at 5 minutes.
3. An unloaded running time delay for emergency generator cool-down. The time delay shall be field adjustable from 0 to 5 minutes and factory set at 5 minutes.
4. A time delay on transfer to emergency. Initially set at 0 but field adjustable up to 2 minutes for controlled timing on load transfer to emergency, where indicated.
5. Independent single phase, voltage and frequency sensing of the emergency source. The pickup voltage shall be adjustable from 85% to 100% of nominal. Pickup frequency shall be adjustable from 90% to 100% of nominal. Transfer to emergency upon normal source failure when emergency source voltage is 90% or more of nominal and frequency is 95% or more of nominal.
6. A contact that closes when normal source fails for initiating engine starting, rated 10 A, 32 VDC. Contacts to be gold plated for low voltage service.

### **2.4. ACCESSORIES**

1. A green signal light to indicate when the automatic transfer switch is connected to the normal source. A red signal light to indicate when the automatic transfer switch is connected to the emergency source.
2. One auxiliary contact that is closed when automatic transfer switch is connected to normal and one auxiliary contact that is closed when automatic transfer switch is connected to emergency. Rated 10 A, 600 volts, 60 Hz AC.
3. A test switch to simulate normal source failure.
4. Auxiliary relay to provide 1 NO and 1 NC contacts for remote alarms and connections to elevator controller and related systems.

5. Visual indication at control panel and remote audible annunciation if automatic transfer switch is not in automatic mode.
6. Visual indication at control panel and remote audible annunciation if automatic transfer switch is in bypass mode.
7. Transfer switch shall have means for safe, manual mechanical operation.
8. In phase monitor adjusted to signal the transfer switch to operate when the incoming power source is within ten electrical degrees of the connected power source.
9. Transfer control center microprocessor to detail information on:
  - system status
  - power source parameters
  - voltage, frequency, time delay and settings
  - optional settings – historical even lag, system diagnostic

## **2.5. EQUIPMENT IDENTIFICATION**

1. Provide equipment identification in accordance with Section 26 05 00 – Common Work Results - Electrical.
2. Control panel:
  1. for selector switch and manual switch: size 4 nameplates
  2. for meters, indicating lights, minor controls: size 2 nameplates

## **2.6. FABRICATION**

1. Shop assemble transfer equipment including:
  1. Mounting base and enclosure.
  2. Transfer switch and operating mechanism.
  3. Control transformers and relays.
  4. Accessories.
  5. Manual bypass switch.

## **2.7. STANDARD OF ACCEPTANCE**

1. ASCO
2. Eaton

3. Cummins
4. or approved equivalent

### **PART 3 – EXECUTION**

#### **3.1. INSTALLATION**

1. Locate, install and connect transfer equipment as indicated.
2. Provide 100mm concrete housekeeping pad under floor standing equipment.
3. Check relays and solid state monitors and adjust as required.
4. Install and connect battery and remote alarms as indicated.
5. Provide all required controls and connections between automatic transfer switch and emergency generator.

#### **3.2. TESTS**

1. Perform tests and verify equipment operation at the time of the engine generator set start up.
2. Energize transfer equipment from normal power supply.
3. Set selector switch in “Test” position to ensure proper standby start, running, transfer, retransfer. Return selector switch to “Auto” position to ensure standby shuts down.
4. Set selector switch in “Manual” position and check to ensure proper performance.
5. Set selector switch in “Engine start” position and check to ensure proper performance. Return switch to “Auto” to stop engine.
6. Set selector switch in “Auto” position and open normal power supply disconnect. Standby should start, come up to rated voltage and frequency, and then load should transfer to standby. Allow to operate for 10 min., then close main power supply disconnect. Load should transfer back to normal power supply and standby should shutdown.
7. Repeat, at 1 h intervals, 4 times. Complete test with selector switch in each position, for each test.

END OF SECTION 26 36 23

## SYMBOLS

SYMBOL	DESCRIPTION
	ELECTRICAL CABINET - APPROXIMATELY 1500MM (W) X 1500MM (H) X 400MM (D) NEMA 3R STAINLESS STEEL, FREE STANDING CABINET C/W ADDITIONAL THERMAL INSULATION, ELECTRIC FAN DRIVEN HEATER, THERMOSTAT, EXHAUST FAN, INTERNAL LIGHTING FIXTURE, 100A-24 CIRCUITS-120/240 VAC PANELBOARD AND MOUNTED ON THE SIDE OF THE CABINET A HYDRO CHECK METER AND 2.5KVA UPS WITH BATTERIES FOR APPROXIMATELY 4 HRS
	COMMUNICATION CABINET, REFER TO COMMUNICATION DRAWINGS T00-004, T00-005 AND T00-006 FOR MORE DETAILS
	POLE-MOUNTED LUMINAIRE WITH PHOTOCELL AND POLE FOUNDATION. SEE PHOTOMETRIC LAYOUTS FOR LIGHTING FIXTURES ORIENTATION.
	6M POLE-MOUNTED LIGHTING WITH 180° LUMINAIRE CONFIGURATION. SEE PHOTOMETRIC LAYOUTS FOR LIGHTING FIXTURES ORIENTATION.
	6M POLE-MOUNTED LIGHTING WITH 45° LUMINAIRE CONFIGURATION. SEE PHOTOMETRIC LAYOUTS FOR LIGHTING FIXTURES ORIENTATION.
	THREE (3) RPVC CONDUIT STUB-UPS FOR ELECTRICAL OR COMMUNICATIONS
	120/240V DIRECT CONNECTION C/W DISCONNECT SWITCH TO EQUIPMENT AS NOTED
	GROUND BUS
	HANDHOLE. - "HHE" INDICATES HANDHOLE ELECTRICAL; - "HHC" INDICATES HANDHOLE COMMUNICATION; - "XX" INDICATES SEQUENTIAL NUMBER
	CCTV
	SPEAKER
	INTERCOM
	PHOTO CELL
	GROUND TESTING WELL
	BARE COPPER CONDUCTOR BURIED OR EMBEDDED IN CONCRETE
	HYDRO SERVICE FEEDER. NEGOTIATION BETWEEN THE CONTRACTOR AND HYDRO TO DETERMINE IF IT IS OVERHEAD LINE, UNDERGROUND OR COMBINATION OF BOTH
	ELECTRICAL CONDUIT ROUTING IN DUCTBANK FOR ELECTRICAL
	COMMUNICATION CONDUIT ROUTING IN DUCTBANK FOR COMMUNICATIONS, SECURITY, ACCESS AND DATA
	ELECTRICAL CONDUIT ROUTING FOR GENERATOR IN DUCTBANK FOR ELECTRICAL
	COMMUNICATION AND CONTROLS CONDUIT ROUTING FOR GENERATOR IN DUCTBANK FOR COMMUNICATIONS AND CONTROLS
	TRANSIENT VOLTAGE SURGE SUPPRESSOR (TVSS)

## ABBREVIATIONS

AC - AC ALTERNATING CURRENT  
AFF - ABOVE FINISHED FLOOR  
AFG - ABOVE FINISHED GRADE  
ATS - AUTOMATIC TRANSFER SWITCH  
BAS - BUILDING AUTOMATED SYSTEM  
BBH - BASED BOARD HEATER  
BFG - BELOW FINISHED GRADE  
C - CEILING MOUNTED  
CT - CURRENT TRANSFORMER  
CCT - CIRCUIT  
DC - DIRECT CURRENT  
DS - DISCONNECT SWITCH  
DWG - DRAWING  
EM - EMERGENCY  
E.O. - ELECTRICALLY OPERATED  
EMT - ELECTRICAL METALLIC TUBING  
EQUIP- EQUIPMENT  
FA - FIRE ALARM  
GFI - GROUND FAULT INTERRUPTER  
GND - GROUND  
HP - HORSEPOWER  
HH - HAND HOLE (HAND WELL)  
I/O - INPUT/OUTPUT  
IG - ISOLATED GROUND  
JB - JUNCTION BOX  
kV - KILOVOLT  
kW - KILOWATT  
LED - LIGHT EMITTING DIODE  
LTG - LIGHTING  
MCC - MOTOR CONTROL CENTER  
MDB - MAIN DISTRIBUTION BOARD  
M.O. - MANUALLY OPERATED  
MTD - MOUNTED  
N.C. - NORMALLY CLOSE  
NIC - NOT IN CONTRACT  
N.O. - NORMALLY OPEN  
NTS - NOT TO SCALE  
PLC - PROGRAMMABLE LOGIC CONTROLLER  
PNL - PANEL  
R - RAIN TIGHT  
R.I. - ROUGH-IN ONLY  
RM - ROOM  
RGS - RIGID GALVANIZED STEEL  
RPVC- RIGID PVC DUCT  
SW - SWITCH  
U/G - UNDERGROUND  
UPS - UNINTERRUPTED POWER SYSTEM  
WP - WEATHERPROOF  
WG - WIRE GUARD  
WT - WATER TIGHT  
XFMR- TRANSFORMER  
XP - EXPLOSION PROOF

## GENERAL NOTES

1. READ AND UNDERSTAND FULL SET OF CONTRACT DOCUMENTS.
2. THE LOCATIONS AND DETAILED LAYOUTS OF POWERED EQUIPMENT ITEMS SHOWN ON THE ELECTRICAL DRAWINGS ARE APPROXIMATE ONLY. THIS INFORMATION IS GOVERNED BY THE FOLLOWING DRAWINGS: MECHANICAL - 'M' SERIES DRAWINGS, ARCHITECTURAL - 'A' SERIES DRAWINGS, STRUCTURAL - 'S' SERIES DRAWINGS, COMMUNICATION - 'T' SERIES DRAWINGS.
3. ALL ELECTRICAL SYSTEMS HEREIN ARE TO BE CONSIDERED AS GOVERNED BY THE REQUIREMENTS OF THE LATEST EDITION OF ONTARIO ELECTRICAL SAFETY CODE "OESC", THE LATEST EDITION OF ONTARIO BUILDING CODE "OBC", CSA STANDARDS FOR INSTALLATION AND TESTING REQUIREMENTS AND THE ELECTRICAL SAFETY AUTHORITY (ESA). IT IS THE CONTRACTOR RESPONSIBILITY TO ENSURE CONFORMANCE WITH ALL APPLICABLE CODES AND SPECIFICATIONS.
4. ONLY CSA/ULC MARKED EQUIPMENT AND MATERIALS CAN BE USED FOR THE PROJECT.
5. CONFIRM ON SITE THE FINAL LOCATION OF ALL EQUIPMENT PRIOR TO INSTALLATION WITH THE OWNER/SITE REPRESENTATIVE.
6. ALL FLOOR MOUNTED ELECTRICAL EQUIPMENT SHALL BE MOUNTED 200mm (MIN.) AFF ON CHANNEL OR CONCRETE BASE.
7. - ALL LIGHTING AND RECEPTACLES WIRING TO BE MINIMUM #12 AWG COPPER, 600V, R90 XLPE INSULATION.  
- ALL CONTROL WIRING TO BE MINIMUM #14 AWG COPPER, 600V, R90 XLPE INSULATION.  
- ALL LOW VOLTAGE WIRING AS RECOMMENDED BY THE MANUFACTURER.  
- ALL NETWORK DATA WIRING AS RECOMMENDED BY THE MANUFACTURER.
8. CONDUIT ROUTING IS SHOWN DIAGRAMMATICALLY. CONTRACTOR SHALL DETERMINE THE MOST EFFICIENT ROUTING UNDER ACTUAL FIELD CONDITIONS. JUNCTION BOXES, FITTINGS, ETC, ARE NOT SHOWN FOR CLARITY BUT ARE THE RESPONSIBILITY OF THE CONTRACTOR.
9. ANY PENETRATION TO THE FIRE RATED WALL SHALL BE SEALED WITH PROPER FIRE STOPPING.
10. BY THE END OF PROJECT ALL CONDUIT OR OTHER EQUIPMENT OPENINGS SHALL BE CAPPED AND SEALED.
11. SUBMIT TO AUTHORITIES HAVING JURISDICTION NECESSARY NUMBER OF DRAWINGS AND SPECIFICATIONS FOR EXAMINATION AND APPROVAL PRIOR TO COMMENCEMENT OF WORK.
12. PAY ALL ASSOCIATED FEES RELATED TO PERMITS, FEES AND INSPECTION.
13. NOTIFY PROJECT ENGINEER OF ANY CHANGES REQUIRED BY ELECTRICAL SAFETY AUTHORITY OR OTHER AUTHORITIES.
14. FURNISH CERTIFICATES OF ACCEPTANCE FROM ELECTRICAL SAFETY AUTHORITY AND OTHER AUTHORITIES HAVING JURISDICTION TO PROJECT ENGINEER ON COMPLETION OF WORK.
15. SAFETY DISCONNECTS, STARTERS, AND CONTACTORS WILL BE SUPPLIED BY THIS CONTRACTOR. INSTALL AND WIRE LINE SIDE CONNECTIONS OF MECHANICAL EQUIPMENT COMPLETE.
16. THIS CONTRACTOR TO PROVIDE ISOLATION DISCONNECTS FOR ALL EQUIPMENT SUPPLIED BY OTHER DIVISIONS. PROVIDE RAIN TIGHT EQUIPMENT WHERE APPLICABLE.
17. ANY PENETRATION TO WALL ABOVE OR BELOW GROUND SHALL BE SEALED WITH PROPER SEALING MATERIAL.
18. UNDERGROUND CONDUITS SHALL BE SLOPPED 1/400 AWAY FROM THE BUILDING OR OUTDOOR CABINETS.
19. COMMUNICATION CABINET TO BE PROVIDED BY STATION CONTRACTOR C/W ACCESSORIES, PDUs, FANS, TERMINAL BLOCKS, PATCH PANELS, SURGE PROTECTION AND 4U RACK. COMMUNICATION EQUIPMENT SUCH AS NETWORK SWITCHES, ROUTERS, DOOR CONTROLLER, TO BE INSTALLED BY OTHERS. REFER TO COMMUNICATION DRAWINGS T00-004, T00-005 AND T00-006 FOR MORE INFORMATION.
20. PROVIDE CONCRETE ENCASED DUCT BANKS UNDER ROADS OR AREAS WITH HEAVY VEHICULAR TRAFFIC AS SPECIFIED BY CSA C22.1 AND CSA C22.3-NO7.
21. HANDWELLS TO BE "DURALTE" MODEL-1015, TIER 22, HEAVY DUTY, POLYOLEFIN BLEND MATERIAL OR APPROVED EQUIVALENT.
22. THE HANDHOLES SPECIFIED IN THE COMMUNICATION DRAWINGS INDICATE HANDHOLES EXCLUSIVELY DESIGNATED FOR COMMUNICATION CABLE BRANCHING AND CONDUIT ARRANGEMENTS. THE ELECTRICAL DRAWINGS COVER ALL PROPOSED HANDHOLES FOR COMMUNICATION AND ELECTRICAL ALONG THE PLATFORMS.
23. FOR CIRCUIT NUMBERS REFER TO THE TYPICAL PANELBOARD SINGLE LINE DRAWING E00-003. CIRCUIT NUMBERS ARE TYPICAL FOR ALL STATIONS.
24. PERFORM COORDINATION AND ARC FLASH STUDY AND PROVIDE WARNING LABELS AS REQUIRED BY THE LAST REVISION OF CSA Z462.
25. ALL EQUIPMENT/ DEVICES MOUNTED EXPOSED TO THE ENVIRONMENT SHALL BE PROVIDED IN WEATHERPROOF ENCLOSURE.

**PRICING SET: 2025-04-04**  
**NOT FOR CONSTRUCTION**

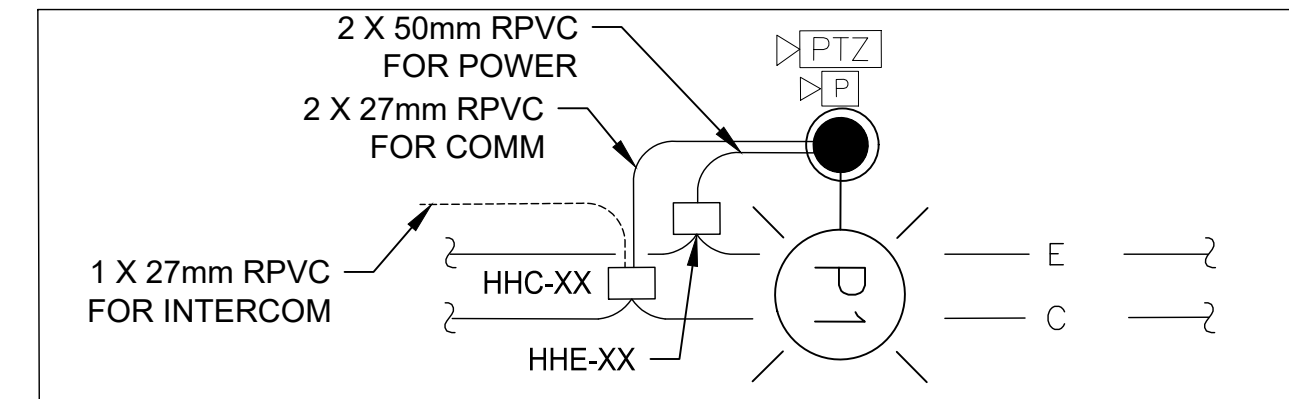
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REVISIONS														
REVISIONS														



NOTES:

- ① DIRECT CONNECTION FOR BACKLIT TOTEM. SEE CIVIL DRAWINGS, C-SERIES FOR THE TOTEM LOCATION.
- ② ELECTRICAL CONDUIT ROUTING FOR POWER CONNECTION TO BACKLIT TOTEM. THE CONTRACTOR SHALL PROVIDE A 1X53MM RPVC DUCTBANK FOR BACKLIT TOTEM. THE CONTRACTOR TO DETERMINE FINAL ROUTING OF THE DUCTBANK BASED ON THE SITE CONDITIONS. THE DUCTBANK DETAILS ARE AS SHOWN IN DWG E00-005 AS REFERENCE.
- ③ THE POWER FOR ENGLEHART REINSTATED STATION SCOPE IS PROPOSED TO BE FED FROM EXISTING MAIN ELECTRICAL PANEL LOCATED IN THE BASEMENT OF THE STATION BUILDING AT THE PROPERTY. THE CONTRACTOR SHALL COORDINATE WITH THE SITE MANAGER FOR THE FINAL ROUTE OF THE INCOMING POWER AND COMMUNICATION RACEWAYS. THE DUCTBANK DETAILS ARE AS SHOWN IN DWG E00-005 AS REFERENCE.
- ④ ELECTRICAL AND COMMUNICATION CONDUIT ROUTING FOR ALL INFRASTRUCTURE IN PLATFORM AND PARKING LOT. THE CONTRACTOR SHALL PROVIDE 2X3 53MM RPVC DUCTBANK TO MEET COMMS AND ELECTRICAL REQUIREMENTS. ALL COMMS AND ELECTRICAL SERVICES SHALL BE IN DEDICATED CONDUITS. THE CONTRACTOR SHALL FINALIZE THE FINAL ROUTING OF THE DUCTBANK BASED ON THE SITE CONDITIONS. THE 2X3 53MM DUCTBANK SHALL INCLUDE 3 X 53MM CONDUIT FOR COMMS, AND 3X53MM FOR POWER.
- ⑤ CONTRACTOR TO PROVIDE CONDUIT EXPANSION JOINTS. ⚠

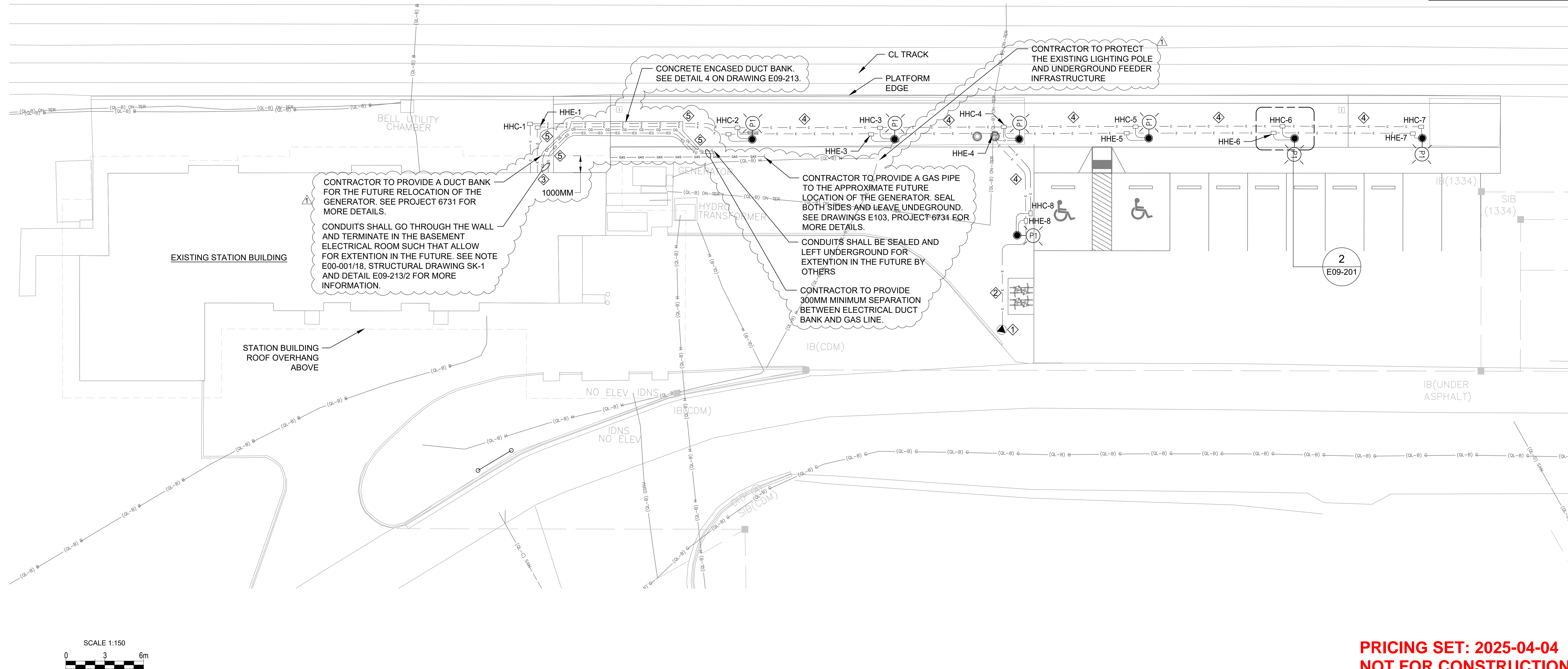
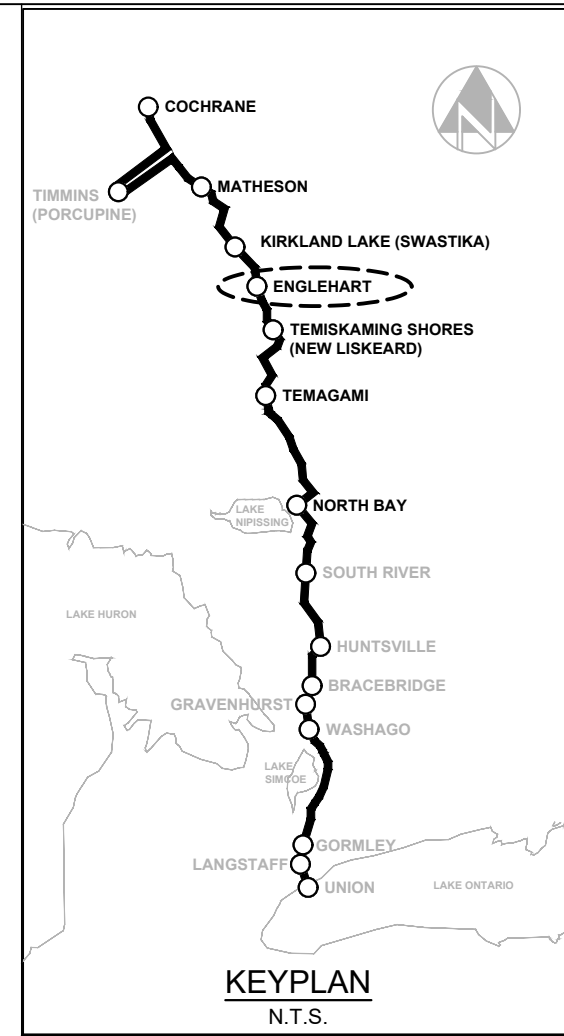
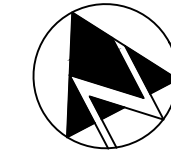


## DETAIL

### HANDWELL CONNECTION



NTS

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E09-201

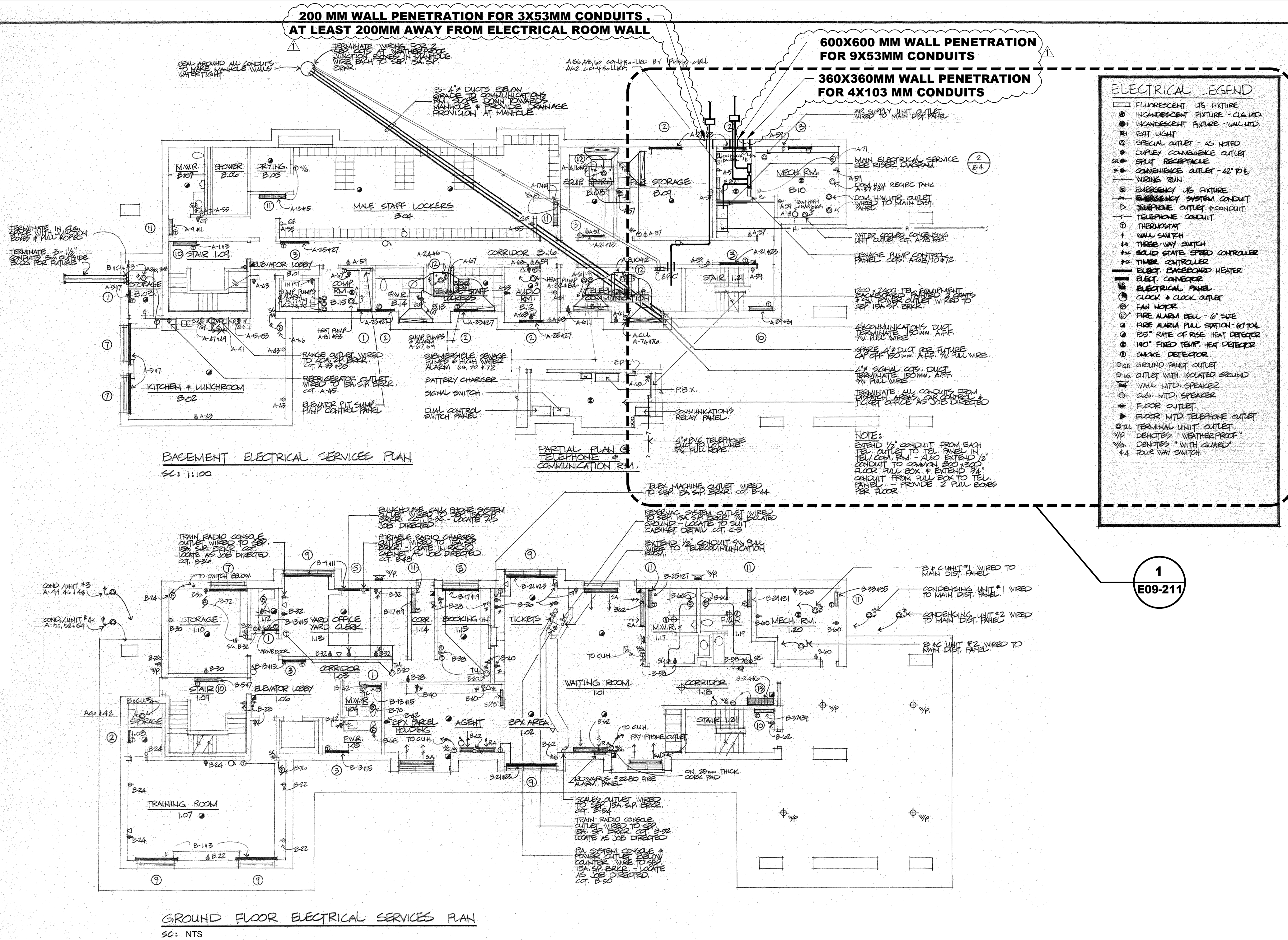


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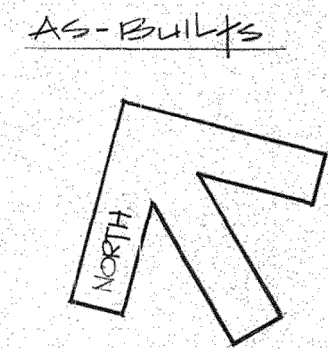
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DRAWN	OM			SCALE 1:150	DATE 03/24/2025
CHECKED	SM		ENGLEHART STATION ELECTRICAL SITE PLAN	DRAWING NUMBER E09-201	
APPROVED	SM			SHEET -	OF -



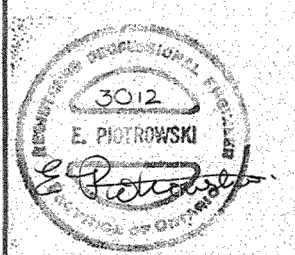


THIS DRAWING AS AN INSTRUMENT OF SERVICE IS THE PROPERTY OF THE ARCHITECT, AND MAY NOT BE REPRODUCED WITHOUT HIS PERMISSION AND UNLESS THE REPRODUCTION CARRIES HIS NAME AS ARCHITECT.

THE CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS BEFORE PROCEEDING WITH THE ORDER OF PRE-FABRICATED MATERIAL AND/OR CONSTRUCTION.



DATE PRINTED



**Smith**  
Stewart Smith  
Architect Ltd.,  
Timmins, Ont.

**DESCRIPTION OF DRAWING**  
BASEMENT & GROUND FLOOR  
ELECTRICAL SERVICES  
PLANS

SCALE 1:100

DRAWN BY CJS.

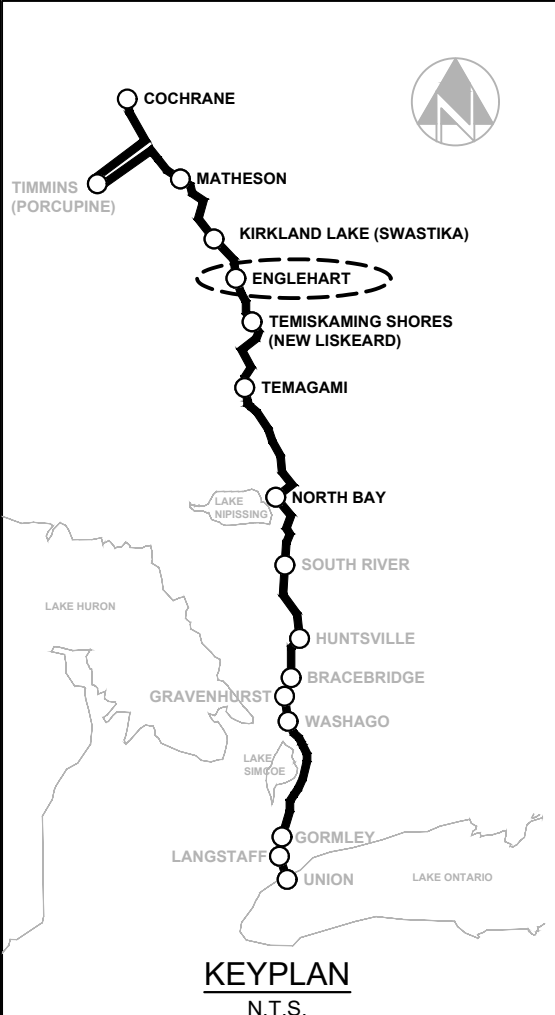
DRAWING NO.

E-3

**PROJECT**  
INTERMODAL - INTERCITY  
BUS & RAIL TERMINAL  
ENGLEHART, ONTARIO

**PROJECT NO.**

11.86



NO.	DATE	MODIFICATION	DRAWN	CHKD.	APPRVD.	NO.	DATE	MODIFICATION	DRAWN	CHKD.	APPRVD.
						1	04/04/2025	GENERATOR UPDATES	OM	SM	SM
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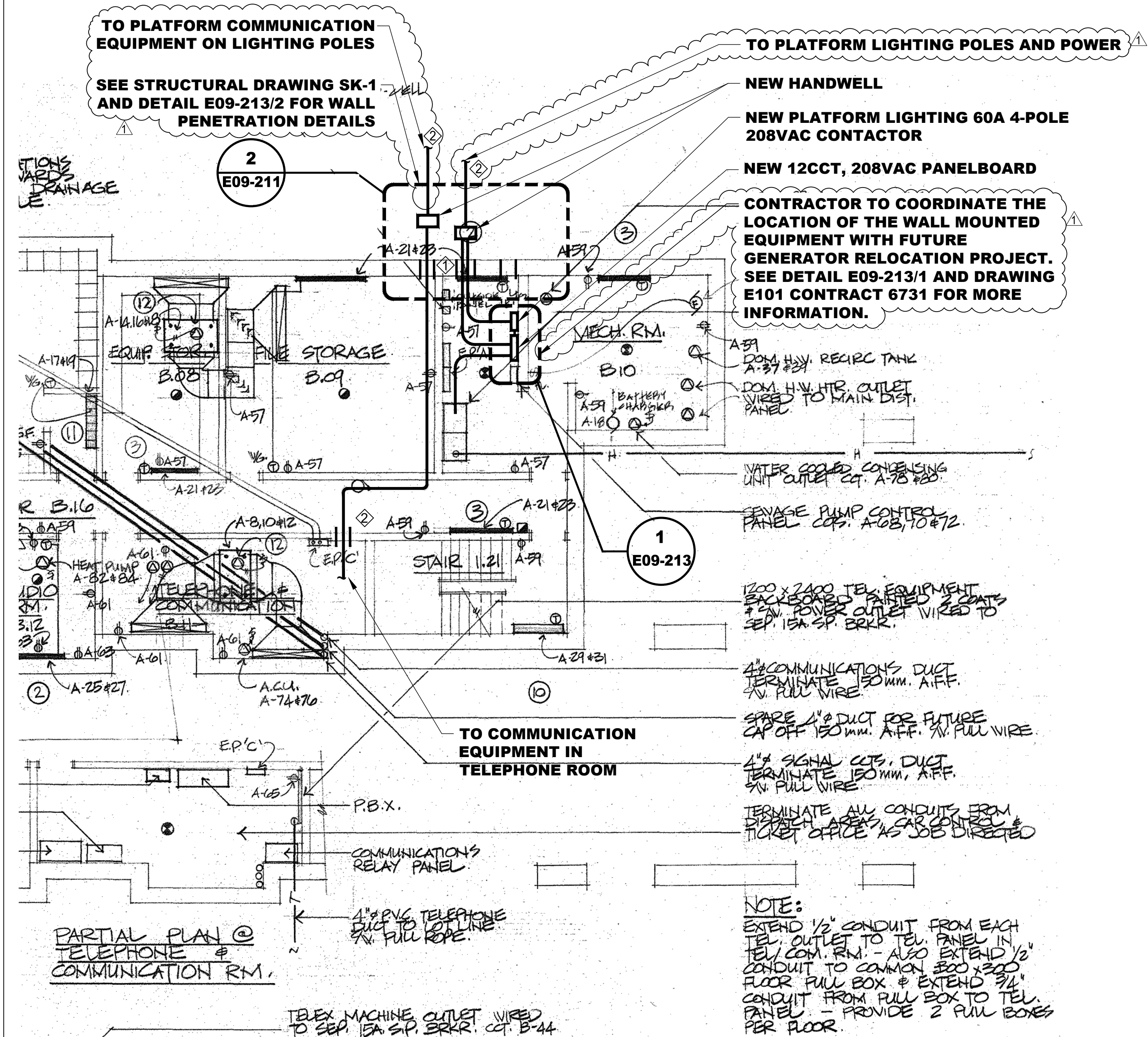


NORTHEAST PASSENGER RAIL SERVICE  
ONTARIO, CANADA  
REINSTATED STATIONS (PACKAGE 1 & 2)  
ENGLEHART STATION  
ELECTRICAL  
STATION BASEMENT LAYOUT

CONTRACT NUMBER	13258
SCALE	AS NOTED
DATE	03/24/2025
DRAWING NUMBER	E09-210
SHEET	OF

PRICING SET: 2025-04-04  
NOT FOR CONSTRUCTION





DETAIL  
ENGLEHART STATION ELECTRICAL AND  
COMMUNICATION ROOM LAYOUT  
NTS

ELECTRICAL LEGEND

- FLUORESCENT LITE FIXTURE
- INCANDESCENT FIXTURE - CLG. MTD.
- INCANDESCENT FIXTURE - WALL MTD.
- EXIT LIGHT
- SPECIAL OUTLET - AS NOTED
- DUPLEX CONVENIENCE OUTLET
- SPLIT RECEPTACLE
- CONVENIENCE OUTLET - 42" TO E.
- WIRING RUN
- EMERGENCY LITE FIXTURE
- EMERGENCY SYSTEM CONDUIT
- TELEPHONE OUTLET & CONDUIT
- TELEPHONE CONDUIT
- THERMOSTAT
- WALL SWITCH
- THREE-WAY SWITCH
- SOLID STATE SPEED CONTROLLER
- TIMER CONTROLLER
- ELECT. BASEBOARD HEATER
- ELECT. CONNECTOR
- ELECTRICAL PANEL
- CLOCK & CLOCK OUTLET
- FAN MOTOR
- FIRE ALARM BELL - 6" SIZE
- FIRE ALARM PULL STATION - 60 TOL
- 85° RATE OF RISE HEAT DETECTOR
- 140° FIXED TEMP. HEAT DETECTOR
- SMOKE DETECTOR
- GROUND FAULT OUTLET
- OUTLET WITH ISOLATED GROUND
- WALL MTD. SPEAKER
- CLG. MTD. SPEAKER
- FLOOR OUTLET
- FLOOR MTD. TELEPHONE OUTLET
- TERMINAL UNIT OUTLET
- 1/2" DENOTES "WEATHER PROOF"
- 1/8" DENOTES "WITH GUARD"
- #4 FOUR WAY SWITCH

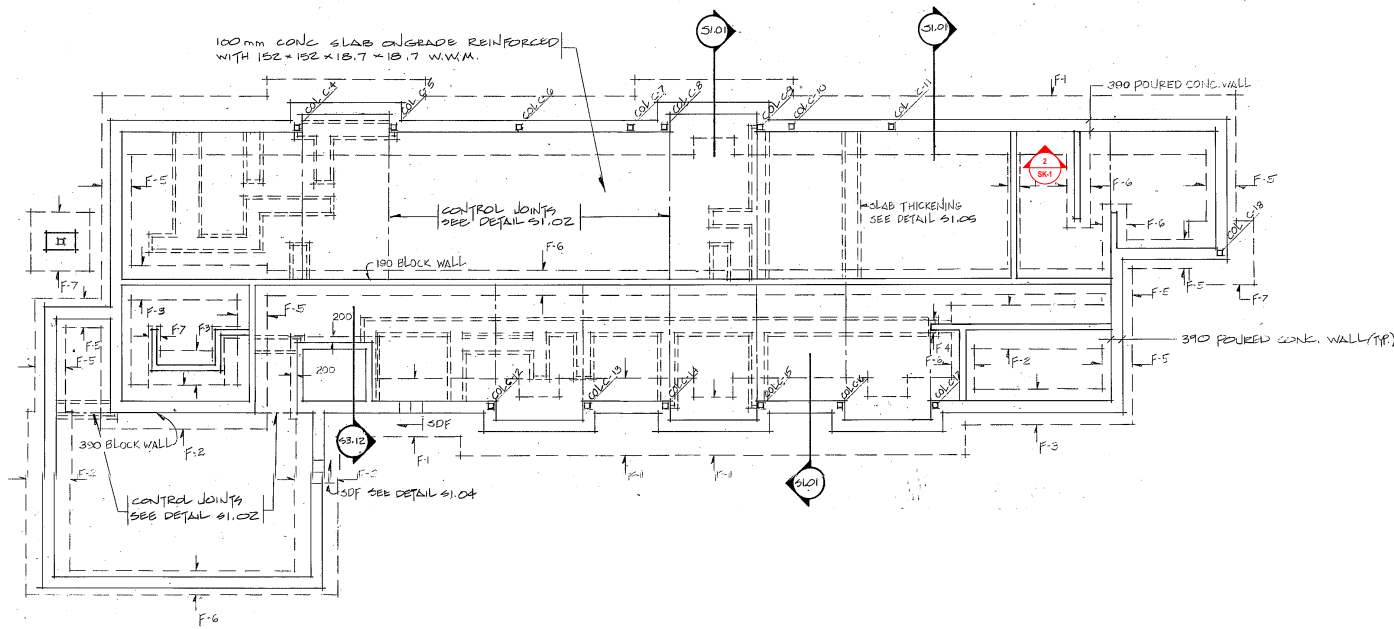
- NOTES:
- PENETRATE THE BASEMENT WALL BELOW THE HVAC DUCTS INSIDE THE BASEMENT. PROTECT HVAC DUCTS. SLOPE THE CONDUITS 1:400 AWAY FROM THE BUILDING TO THE NEAREST HANDWELL. SEAL THE OPENING.
  - 3X53MM RPVC.
  - SEE DRAWING E09-212 FOR MORE INFORMATION.

PRICING SET: 2025-04-04  
NOT FOR CONSTRUCTION

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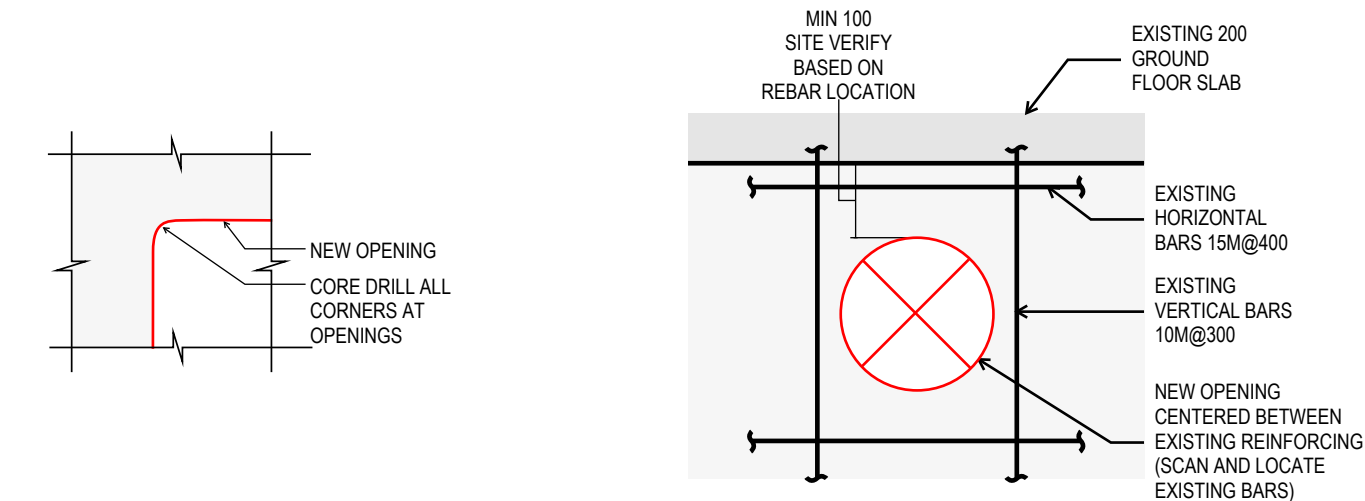






**1 EXISTING KEY PLAN**  
SK-01

NOTES:  
1. EXISTING DRAWING BACKGROUNDS SOURCED FROM DRAWING S-1 TITLED "FOUNDATION PLAN & FIRST FLOOR FRAMING PLAN" PREPARED BY STWEART SMITH ARCHITECTS LTD, DATED JUNE 1987



**4 TYPICAL CORNER AT ALL OPENINGS**  
SK-01

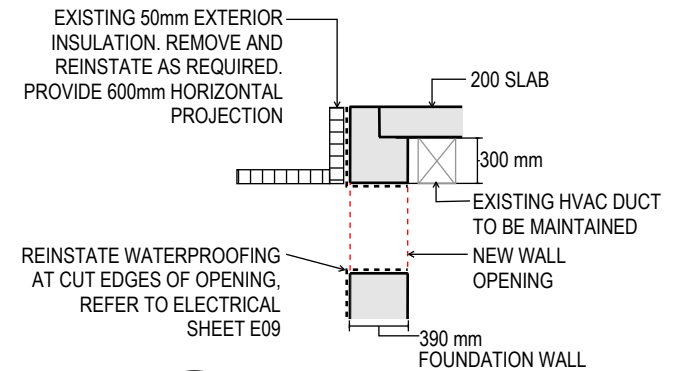
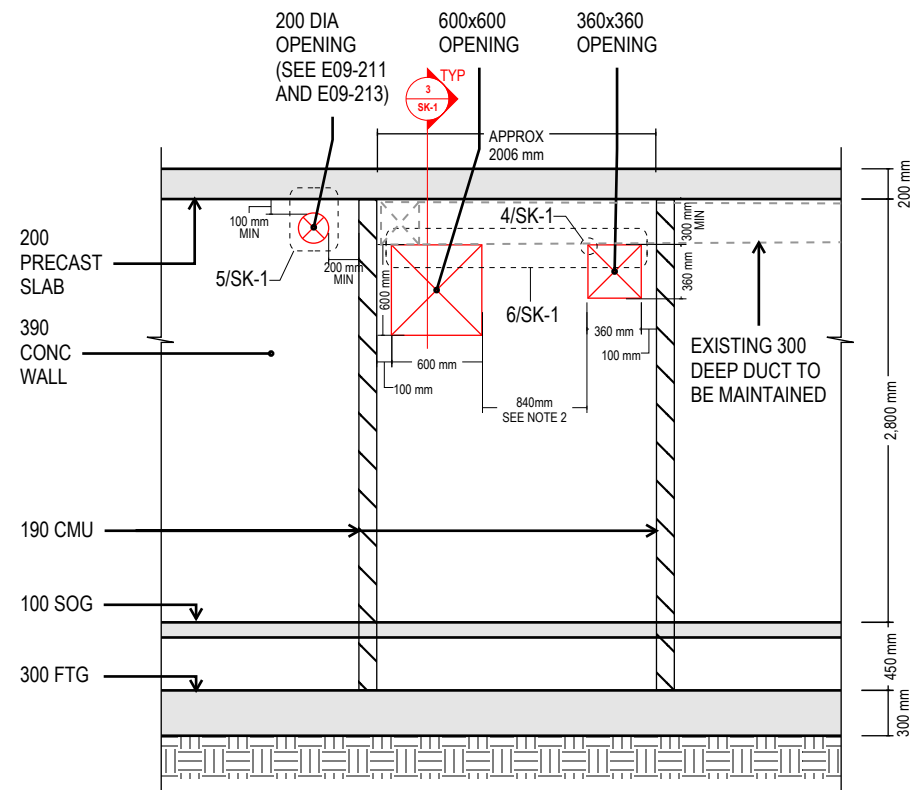
**5 200 DIA OPENING IN EXISTING WALL**  
SK-01

NOTES:  
1. THIS OPENING IS INCLUDED UNDER BASE SCOPE WORK, REFER TO E09-211 AND E09-213

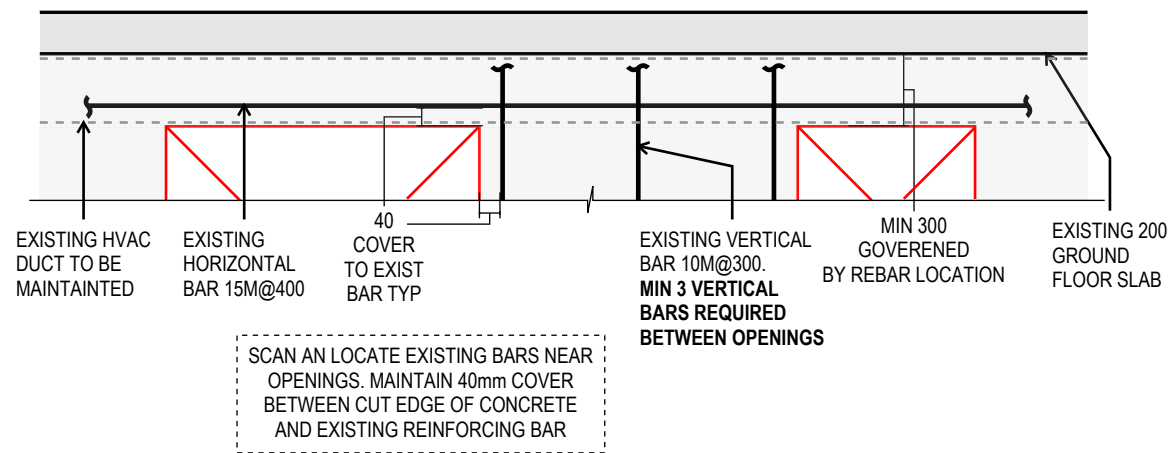
LEGEND	
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<span style="display:inline-block; width:10px; height:10px; background-color:red;"></span>	NEW

**2 FOUNDATION WALL ELEVATION**  
SK-01

- NOTES:  
1. SCAN AND LOCATE EXISTING REINFORCING AROUND 200 DIAMETER OPENING. CENTER OPENING BETWEEN EXISTING BARS (SEE 5/SK-5)  
2. SCAN AND LOCATE BARS BETWEEN AND ABOVE NEW OPENINGS PRIOR TO CUTTING. MIN 3 VERTICAL BARS REQUIRED TO REMAIN BETWEEN OPENINGS. ADJUST LOCATION OF OPENINGS AS REQUIRED (SEE 6/SK-5). MAINTAIN 40mm COVER TO EXISTING REBAR TYP  
3. ALL OPENINGS TO HAVE CORE DRILLED CORNERS. DO NOT OVERCUT AND DAMAGE EXISTING REINFORCING OUTSIDE OF NEW OPENING EXTENTS (SEE 4/SK-5)



**3 FOUNDATION WALL SECTION AT OPENING**  
SK-01



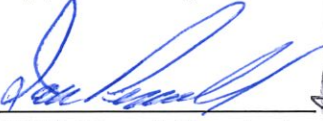
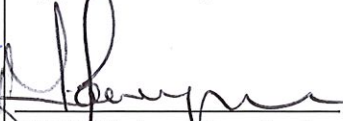
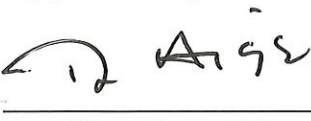
**6 EXISTING BAR REQUIREMENTS AT OPENINGS**  
SK-01

## APPENDIX I - POLICIES AND PROCEDURES

The Successful Proponent will be required to adhere to the following ONTC Policies and Procedures while under contract with ONTC, and which are attached to this Appendix G.

TITLE
ONTC Lockout / Tag Out Procedure
ONTC Contractor / Subcontractor Policy
ONTC Electrical Safety Policy and Program



Lockout Tag out Procedure		
Procedure No. HSP-008		Revision:
Date Issued: February 9, 2017		Date:
Approved By: 	Approved By: 	Approved By: 
H&S Mgmt Co-chair	H&S Union Co-chair	Director of Operations

### PURPOSE AND SCOPE

To ensure that dangerous machines are properly shut off and not started up again prior to the completion of maintenance or servicing work. This must be followed to avoid the unexpected energization or start up of the machinery or equipment, or the release of stored energy, which could cause injury to employees.

### RESPONSIBILITIES

The Supervisor is responsible for ensuring this procedure is adhered to. Employees are to follow the instructions included in this safe operating procedure as well as any additional instructions given by his or her supervisor.

### PROCEDURE

The following **SIX STEPS** are a review of basic steps for safely de-energizing equipment:

1. Notify all "affected employees" that the equipment will be shut down.
2. Shut down the equipment by normal stopping procedures. Open the main disconnect switch or breaker.  
Note: Disconnect switches should never be pulled while they are under load. Shutdown everything you can at the point of operation, then pull the main switch with your LEFT hand while facing away from the switch box.
3. "Isolate" all the equipment's energy sources.
  - a. **Electrical-** All Electrical lockouts must be done by designated qualified personnel the only acceptable electrical lock out is to lock the correct disconnect switch in the OFF position. Where possible, it is also advisable to remove the fuses. When an electrical lockout is necessary and the control is a breaker, lockout the breaker where possible or switch off the breaker and lock the panel door,
  - b. **Steam/Air/Gas & Hydraulics-** These sources of power can be locked out by chains attached to the valves, by valves with built-in lockout devices or by designing special attachments for the valves. In pneumatic and hydraulic power systems, the pressure between the lock out and the machine must be reduced to zero before any work is begun. The pressure should be reduced slowly through a bleed-off valve. If the system does not incorporate a bleed-off valve, very slowly loosen a line fitting to reduce the pressure.
  - c. **Confined Spaces** – Where work is to be done in the confined spaces such as tanks, bins, etc., the supply lines must be blanked off or disconnected. Valves alone must never be depended upon. Pumps or other related power equipment must be locked out and the person in the confined space must keep the key.
4. Lock out and/or tag out the energy isolating devices with assigned, individual locks. Every employee involved must also put their own lockout and tag on each source of power at this time.
5. Release or restrain any stored energy by grounding, blocking, bleeding down, etc.

6. Assure that no personnel are exposed, and then test the equipment to assure that it will not operate. (check the lockout cannot be operated, then try the machine controls to verify a proper disconnect)

**Restoring Equipment to Service:**

1. Check to Assure that all employees have been safely positioned or removed from the area.
2. Verify that equipment controls are in neutral.
3. Remove lockout devices and/or tags and re-energize the machine or equipment. (each employee involved is responsible for removal of their own lockout and tag)
4. Notify affected employees that servicing is complete and the equipment is ready for use.

**REQUIREMENTS**

1. Employee should have metal tag with name and number stamped on the tag for each lock out you use. The tag is to be placed on the shank of the lockout each time the lock out is used.
2. Disconnects should be clearly marked to identify the equipment they energize or control.
3. Never depend on a push button as a means of locking out the equipment. The only positive lock out is made at the disconnect or breaker.
4. If you are being reassigned or going off shift and someone else is going to finish the job, your relief must put on their lock out before you remove your lock out
5. Employees will be issued one key with each lock. A duplicate key will be kept in the Supervisor's office. Each lock and key shall be numbered for ease of identification. The duplicate key is to be used in case of emergency.
6. Under circumstances should lockout be borrowed or loaned.

**LOCK OUT REMOVAL PROCEDURE:**

1. The area Supervisor shall be informed that a lock out needs to be removed and that the person assigned the lock out cannot be located.
2. The area supervisor will make every effort to contact the lock out owner and documents these attempts
3. If the area supervisor removing the lockout is not the supervisor of the lock out owner, that supervisor will be contacted if possible
4. If the above persons cannot be contacted and the area in question has been inspected and is clear of hazards to everyone, the lock out may be removed (cut-off).

**REFERENCES**

OSHA Standard: 29 CFR 1910.147

Canada Labour code – Part II

**REVISION RECORD**

<i>Description of Change</i>	<i>Date</i>
Original Issue	2/9/17

<b>DATE FORMALIZED</b> February 2019  <b>REVISED</b> September 17, 2024	<b>CONTRACTOR/SUBCONTRACTOR HEALTH AND SAFETY POLICY</b>
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## **POLICY STATEMENT**

In keeping with our values of Safety Full Stop, Go Beyond, Lead the Way, and Never Stop Caring, Ontario Northland Transportation Commission (ONTC) adheres to the requirements of the Canada Labour Code and all applicable Regulations by ensuring that all selected contractors and subcontractors meet the set health and safety standards associated with each project.

All work shall be done safely no matter how urgent the job is and ONTC will assure that all contractors and subcontractors working on any ONTC property and/or project will follow this policy, adhering to all health and safety legislation and working in a manner that puts the safety of each employee/worker and the environment as the top priority.

## **PURPOSE**

The purposes of this policy are to:

- Ensure that the health and safety of all Ontario Northland Transportation Commission (ONTC) employees, equipment, property, and environment are protected when work is being performed by an outside agency.
- Ensure that all contractors retained by the ONTC are compliant with ONTC policies, procedures, standards, and applicable legislation.
- Ensure that all contractor employees and ONTC employees are provided with a safe and healthy work environment.
- Eliminate or minimize the risk of loss to employees, equipment, property, and environment.
- Minimize corporate liabilities.

## **APPLICATION AND SCOPE**

This procedure applies to all ONTC divisions and departments that engage the services of an outside agency to perform work at any level.

## **DEFINITIONS**

**Adequate:** in relation to a procedure, plan, material, device, object, or thing, means

- a) Sufficient for both its intended use and actual use; and
- b) Sufficient to protect a worker from occupational illness or occupational injury.

**Competent Person:** a person who is:

- a) qualified because of knowledge, training, and experience to organize the work and its performance,
- b) familiar with the Occupational Health and Safety Act and/or the Canada Labour Code and the regulations that apply to the work, and
- c) has knowledge of any potential or actual danger to health or safety in the workplace.

**Construction:** includes erection, alteration, repair, dismantling, demolition, structural maintenance, painting, land clearing, earth moving, grading, excavating, trenching, digging, boring, drilling, blasting, or concreting, the installation of any machinery or plant, and any work or undertaking in connection with a project, but does not include any work or undertaking in a mine.

**Constructor:** a person who undertakes a project for an owner and includes an owner who undertakes all or part of a project by himself/herself or by more than one employer.

**Consultant:** a person who is retained by ONTC to provide professional non-construction services.

**Contractor:** any person or entity contracted to provide service to ONTC.

**Employer:** a person who employs one or more workers, or contracts for the services of one or more workers, and includes a contractor or subcontractor who performs work or supplies services and a contractor or subcontractor who undertakes with an owner, constructor, contractor, or subcontractor, to perform work or supply services.

**Lead Employer:** an employer who contracts for the services of one or more other employers or independent contractors in relation to one or more confined spaces that are located,

- a) in the lead employer's own workplace, or
- b) in another employer's workplace.

**Prescribed:** means established in a Regulation made under the Occupational Health and Safety Act or Canada Labour Code

**Project:** a construction project, whether public or private, including:

- a) the construction of a building, bridge, structure, industrial establishment, mining plant, shaft, tunnel, caisson, trench, excavation, highway, railway, street, runway, parking lot, cofferdam, conduit, sewer, watermain, service connection, telegraph, telephone or electrical cable, pipeline, duct or well, or any combination thereof,
- b) the moving of a building or structure, and
- c) any work or undertaking, or any lands or appurtenances, used in connection with construction.

**Project Administrator:** a person who leads/coordinates a project.

**Regulation:** the regulations made under the Occupational Health and Safety Act or the Canada Labour Code.

**Subcontractor:** a person or company that a contractor pays to do part of a job that the contractor has agreed to do and is responsible for.



## **SUPPORTING MATERIAL REQUIRED**

Contractor Safety Checklist and Orientation Form  
ONTC Contractor Health and Safety Responsibility Agreement  
Project Hazard Assessment  
Contractor Orientation Training Package

## **PROCEDURE**

Once it has been determined that a contractor will be required, a lead must be immediately established regardless of the size of the project. That lead will become the Project Administrator for the purposes of this policy, ensuring that all requirements of this policy are met.

Before Contractors/Subcontractors begin work/project ensure the following are adhered to:

- All Contractors on the property are compliant and current with all legislative licensing requirements.
- All Contractors provide a valid WSIB Clearance Certificate and/or liability insurance before beginning any work on ONTC property.
- Orientation training is provided to contractors prior to commencement of work.
- Contractors understand their contractual obligations under this standard.
- Provide a designated ONTC contact person to ensure Contractors' compliance to ONTC policies, procedures and standards through ongoing work site inspections, communications and reported safety concerns.
- Ensure that application of this standard is delivered and used consistently throughout ONTC operations.
- Where the work/project is occurring in an area where there may be ONTC employees, inform those employees of potential risk and communicate all restrictions and responsibilities.

The Project Administrator shall establish practices so that all Contractors, subcontractors, or contract workers perform their work in a safe and effective manner and meet all the requirements of the Occupational Health and Safety Act, the Canada Labour Code, and the Construction Regulations. The Project Administrator must be adequately familiar with all applicable laws, codes and regulations and be capable of applying them.

### **Construction Work that meets Provincial “Project” Definition**

Where ONTC retains a Contractor with provincial jurisdiction, and the work meets the definition of “project” per the Provincial Construction Regulations, the Contractor will assume the position of Constructor. Under these circumstances:

- ONTC is not responsible for ensuring that Contractors meet their provincial obligations as they relate to applicable Regulations.
- Contractors will assume control of all work at the construction site.
- ONTC will ensure that any Contractor is pre-qualified before awarding any contract and will monitor work activity to ensure work is being done safely and meets expectations.

ONTC will ensure that:

- all Contractors/Subcontractors are properly trained,
- contractors/Subcontractors are monitored and requirements for safety are observed, and

- procedures for safe conduct of the work are in place and known to Contractor's employees.

The Project Administrator shall direct the Contractor in completion of all applicable documentation, as described by the Contractor Safety Prequalification Procedure. The Project Administrator shall ensure that the Constructor maintains full responsibility for safety.

Where the Project Administrator identifies unsafe situations, they are responsible for bringing this forward to the Contractor and shall stop work if deemed necessary.

### **Non-Construction Work where ONTC is Acting as the “Employer”**

The Project Administrator shall review the ONTC's applicable policies and procedures with the contractors/subcontractors. It is recommended that all contractor/subcontractor workers undergo this training orientation, but it is mandatory that at least the contractor's supervisor or site superintendent receive the orientation and then have a method to ensure that this information is passed on to all employees under their direct control.

**NOTE:** The requirement of “Lead Employer” must be fulfilled if the work is Confined Space Entry work.

It is the responsibility of the Project Administrator to ensure the contractor is aware that project specific training is to be conducted.

The Project Hazard Assessment form shall be completed by the Project Administrator and reviewed with all contractors prior to commencement of work.

Contractors/subcontractors who regularly perform services at ONTC must complete a Contractor Training Orientation on an annual basis or whenever there is a change in personnel or applicable and safety conditions which may affect the contractor's/subcontractor's workers. For project contracts, a Hazard Safety Assessment form will be completed each time the contractor performs a new project, unless the same contract personnel have performed project work of a similar nature within the previous 12 months.

### **Prequalification**

Pre-Qualification of a contractor is designed to ensure that the contractor has:

- Appropriate current and sufficient insurance,
- WSIB Coverage,
- An appropriate and compliant health and safety policy,
- Competent supervisors, and
- A program to completely undertake and control the construction work being conducted at ONTC.

When pre-qualifying a contractor who will not act as “Constructor,” ONTC shall determine whether the contractor has the specific policies, procedures, training, and supervision to perform the job safely and in compliance with all provisions of the Occupational Health and Safety Act and the applicable Regulations. Use the Contractor Safety Prequalification form to fulfill this policy obligation.

If the Procurement department is completing the prequalification procedure, input may be required from the Manager of Health and Safety or the Project Administrator if there are specific requirements for a project.

The following items must be submitted by the contractor for prequalification:

- Certificates of insurance – general liability insurance (Minor projects \$2,000,000 minimum, Major Projects \$5,000,000 minimum).
- WSIB Safety Record – submit a copy for the last 3 years or equivalent accident/injury data.
- Current Clearance certificate – Confirms Contractor has met reporting and payment obligations to WSIB. ONTC requires the Contractor to submit a copy of the clearance certificate every 2 months and before the final payment on the contract has been made.
- Contractor's Health and Safety Policy.
- Past environmental, Health and Safety Records – a copy for the last 2 years.
- Training and Certification Records – Documentation verifying all workers have received the necessary safety training required for the specific job.
- Hazardous material list – List of all hazardous materials that will be brought onto ONTC property.
- ONTC may require a separate work plan detailing higher hazard work activity or any tasks that may tend to produce adverse consequences.

Procurement or the Project Administrator will ensure that the Contractor Health and Safety Responsibility Agreement has been completed by the Contractor.

Procurement or the Project Administrator will ensure current copies of insurance, WSIB clearance certificates, and annual safety reviews are maintained for pre-qualified contractors.

Contractors who have already been prequalified should be reasonably favoured and used for OTNC projects.

### **Project Management**

In all circumstances except where a Contractor has assumed the role of Constructor, the Project Administrator is responsible for health and safety on the project and must halt the project if there are health and safety concerns. The Project Administrator must maintain communication with the Contractor throughout the project.

The Project Administrator is responsible to ensure that all health and safety documentation for the project is completed and maintained.

The Project Administrator is responsible to create an ONTC Project Assessment Folder and complete it with Contractor prior to any work beginning. The folder includes the following documents:

- Signed Contractor Safety Responsibility Agreement,
- Certificates of Insurance – General Liability Insurance,
- WSIB Safety Record,
- Current Clearance Certificate,
- Contractor's health and safety policy and procedures applicable to the work being conducted,
- Training, licensing, and certification records,

- Hazardous materials list and current SDS for material brought onto ONTC property and already onsite that will be used during or encountered during the project,
- Completed Contractor Orientation Training Records,
- Copies of any applicable ONTC procedures that have been reviewed,
- Completed Contractor Prequalification form.

The Project Hazard Assessment form must be filed once the project has been completed and made available for review if required for auditing purposes.

The Project Administrator must ensure that the Contractor Orientation Training is completed for all workers on the project.

**On-Site Safety:** All ONTC safety procedures (Fall protection, Confined Space Entry, Lockout/Tagout, Ladder Safety, WHMIS, Personal Protection Equipment, Respiratory Protection, etc.) apply to all construction work on ONTC projects, unless the Contractor's procedures exceed ours.

The Project Administrator shall review all applicable safety procedures with contractors/subcontractors at the site. Copies of the ONTC procedures can be obtained through MyPolicies.

The Project Administrator will ensure that daily safety briefings are conducted prior to the beginning of each project workday, as well as regularly inspect the work site as the project requires.

If the Contractor or subcontractor has a question or concern regarding safety on the project, they should speak to the Project Administrator or their immediate supervisor.

All contractor(s) or subcontractor(s) supervisors must report to the Project Administrator:

- Any unsafe actions or conditions,
- Contraventions of the Occupational Health and Safety Act, Canada Labour Code and Regulations or any ONTC safety procedure, or
- Existence of any hazard at the project.

Any incident (first aid, near miss, etc.) on the project must be immediately reported to the Project Administrator.

**NOTE:** Workers and their supervisors shall be held accountable for violations of health and safety rules, regulations, and procedures. Disciplinary action, where necessary, will be dictated by the ONTC disciplinary procedure and will be based on the merits of the specific case.

## **RESPONSIBILITIES**

To ensure clarity of responsibility, where a Contractor is hired to conduct work for ONTC and the provincial Occupational Health and Safety Act applies in respect of that work, the Contractor will assume the position of Constructor.

No ONTC employee will be assigned to work on the same project as the general contractor unless there is an agreement between the Contractor and ONTC determining the contractor as the Constructor.

Where a project requires more than one Employer, ONTC may enter into an agreement before the commencement of the project to determine control over the project identifying who will be the Constructor.

### **Employer**

The Employer is responsible to:

- Ensure contractors, employees, supervisors, and managers are adequately aware of the provisions and requirements of the Purchasing Policy and Procedure.
- Ensure that contractors, subcontractors, and project worker companies are adequately prequalified in accordance with the Contractor Safety Prequalification Form for large projects or projects where the combined value of the project exceeds \$50,000.00 and where ONTC is the Constructor.
- Ensure contractors, subcontractors and project worker companies have agreed with and endorsed in writing the terms of the Contractor Health and Safety Responsibility Agreement.
- Properly implement and periodically audit the Contractor prequalification and safety procedure.
- Ensure that authorized staff comply within the Contractor Prequalification and Safety Procedure.
- Discipline and or remove from the authorized contractors list any contractor that fails to comply with this procedure.

### **Procurement**

The Procurement Department is responsible to:

- Conduct prequalification in conjunction with the Project Administrator for consultants and service providers and ensure completion of the Contractor Health and Safety Responsibility Agreement.
- Where required ensure the Contractor completes the Prequalification Form before any construction work is initiated on any of the ONTC properties.
- Maintain a list of all service agreements, memoranda of understanding, and service contracts.
- Obtain a current copy of WSIB Clearance Certificates and Insurance Certificate for pre-qualified consultants and service providers.

### **Project Administrator**

The Project Administrator is responsible to:

- Contract a prequalified contractor.
- Ensure contractors, subcontractors and project worker companies are prequalified in accordance with the Contractor Safety Prequalification Form.
- Ensure the Contractor completes the Contractor Orientation Training with the Contractor's workers prior to the beginning of a project.
- Complete with the Contractor and maintain the Project Hazard Assessment.
- Request applicable training records, certificates, licenses, and written procedures and measures from the Contractor as required.
- Ensure the Contractor Health and Safety Responsibility Agreement is completed by the Contractor prior to the beginning of work.

- Conduct safety briefings with the Contractor(s) prior to the work beginning and as required by the project.
- Periodically view the work areas to ensure compliance with the Occupational Health and Safety Act, associated Regulations and the relevant ONTC safety procedures.
- Respond to safety concerns from contractors and others impacted by a project.
- Ensure all relevant ONTC safety procedures are being implemented at the project.
- Ensure all contractors have provided SDS for all hazardous product used and that the SDS are readily available if stored on ONTC property.
- Inform the supervisor and employees in the area where the work/project is occurring of potential risk, including restrictions and responsibilities needed to ensure their safety.

Where a Contractor is hired to perform work for ONTC and the work is subject to the requirements of the Occupational Health and Safety Act, the Contractor will assume the position of Constructor. The aforementioned duties or similar must then be completed by the Contractor.

**Note:** The Contractor – Constructor will be required to utilize their own prequalification and safety contract documents for any and all subcontractors hired to perform work on the project.

### **Contractors**

Contractors are responsible to:

- Employ competent Supervisors and Workers.
- Comply with the Contractor Prequalification and Safety Procedure.
- Complete the ONTC Project Hazard Assessment and Contractor Health and Safety Responsibility Agreement.
- Furnish the ONTC with hard copies of applicable training records, certificates, licenses and written procedures and measures as required.
- Ensure that the Contractor Safety Checklist and Orientation form are completed and signed.
- Notify the Project Administrator of any questions or concerns with Contractor Prequalification and Safety Policies.
- Notify the Project Administrator of any contraventions of the Act or ONTC's Procedures.
- Participate in required safety training.
- Provide WSIB documentation and/or liability insurance confirming the Contractor is registered and their account is in good standing.
- Have all products used in their process evaluated by ONTC personnel prior to the products being brought onto ONTC property. This will be done through the evaluation of Safety Data Sheets (SDS) provided by the Contractor/subcontractor.
- Ensure copies of all SDS are readily available.
- Immediately inform designated ONTC contact person of there are any changes in their process or products used in their operation.
- Prior to entering ONTC property, register with Security, appropriate supervisor or designated ONTC contact person for direction.
- Ensure that all equipment and vehicles are properly maintained and meet prescribed safety standards, e.g., no loose pins on backhoe extensions or arms, safety pins and safety features are working properly.

### **Workplace/Policy Health and Safety Committees**

The WHSC/PHSC are responsible to:

- Participate in the development and review of the Contractor/Subcontractor Health and Safety Policy, procedure, and applicable forms.
- Serve as a resource to employees regarding the Contractor/Subcontractor Health and Safety Policy, procedure, and applicable forms.

### **Manager Health and Safety**

The Health and Safety Department is responsible to:

- Provide assistance if needed with prequalification process of contractors as required by the Procurement Department and/or the Project Administrator.
- Approve/disapprove exceptions to the Contractor Safety Prequalification process.
- Facilitate the development and review of the Contractor/Subcontractor Health and Safety Policy, procedure, and applicable forms.
- Apply and audit compliance, and discharge discipline when required, specific to the Contractor/ Subcontractor Health and Safety Policy, procedure, and applicable forms.

### **TRAINING**

ONTC is responsible to ensure that those ONTC employees who have duties and responsibilities to act under this procedure are adequately trained in these duties as applicable.

The training shall reinforce the hazard control hierarchy as follows:

- **Elimination:** activities or practices that involve the complete removal of the hazard from the worker in the workplace.
- **Substitution:** involves the replacement of high hazard task or workplace circumstance with a lower hazard task or workplace circumstance.
- **Engineering Controls:** involves creating and using designed infrastructure or equipment to minimize a hazard.
- **Administrative Controls:** involves creating protocols involving stated obligations and prohibitions that change the way people work.
  - E.g., **Warning Signs:** postings and placards that communicate the presence of a hazard as well as hazard control directives.
- **Personal Protective Equipment (PPE):** involves the use of gear that is worn by the worker to create a barrier between the hazard and the worker. PPE can include gloves, respirators, hard hats, safety glasses, high-visibility clothing, and safety footwear.

The Manager, Health and Safety will ensure that the training is refreshed at adequate frequency.

Retraining will be provided for all authorized workers or contractors whenever there is a change in their job assignments, a change in condition, equipment or processes that presents a new hazard, or when there is a change in the Contractor Safety Prequalification Process.

Additional retraining shall also be conducted whenever a periodic inspection reveals, or whenever there is reason to believe, that there are deviations from or inadequacies in workers' knowledge or use of the Contractor Safety Prequalification Process. The Project Hazard Assessment will be updated to add any additional hazards and corresponding controls, as required.

### **APPENDICES/EDUCATIONAL MATERIAL**

- Contractor Safety Prequalification Form
- Contractor Health and Safety Responsibility Agreement
- Contractor Safety Checklist and Orientation
- Project Hazard Assessment

## **REFERENCES**

- Ontario Occupational Health and Safety Act R.S.O 1990
- O.Reg 213/91 Construction Projects
- Canada Labour Code R.S.C., 1985 c L-2
- Canada Occupational Health and Safety Regulations SOR/86-304
- Contractors Subcontractors Safety NBRHC OH&S4-017



<b>DATE FORMALIZED</b> April 6, 2023  <b>REVISED</b>	<b>Electrical Safety Policy</b>
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## **POLICY STATEMENT**

In keeping with our values of Safety Full Stop, Go Beyond, Lead the Way and Never Stop Caring Ontario Northland Transportation Commission (ONTC) commits to ensuring that all employees who may be exposed to electrical hazards associated with their work have the knowledge, skill, tools, and equipment needed to ensure their safety.

In our efforts to Go Beyond our minimal requirements, ONTC commits to continuously improving our safe work practice by striving to incorporate the Workplace Electrical Safety standard, CSA Z462.

All authorized employees will ensure the power supply to electrical installations, equipment, or conductors is disconnected, locked out of service, connected to ground, and tagged before any work is done. **It is a requirement that, where possible, all hazardous energy sources are reduced to and maintained at a ZERO ENERGY state before starting any electrical work.** Should it become necessary that maintenance, cleaning, or adjustments need to be performed on any piece of equipment while it is in operation, safe work procedures for this type of work shall be made available and easily accessible. Only authorized employees shall be allowed to perform such work.

## **PURPOSE**

To ensure employee safety by allowing only **Authorized Employees, Qualified Persons, Certified Electricians** or **Electricians in Training (EIT's)** who are under direct supervision of a **Certified Electrician** to do electrical work such as connect, maintain, or modify electrical equipment or installations at ONTC work locations.

To ensure that all ONTC employees or contractors working for ONTC comply with the Canada Labour Code, Occupational Health and Safety Act, associated regulations and ONTC procedures.

## **APPLICATION AND SCOPE**

This procedure applies to all ONTC workers and contractors at all workplace locations. The procedure applies whenever exposure to a hazardous energy may occur while servicing, installing or maintaining, machinery or equipment.

## **DEFINITIONS**

**Affected employee** – persons who are not directly involved in the work requiring the hazardous energy control, but who are (or may be) located in the work area.

**Authorized employee** – a qualified person who, in their duties or occupation, is obliged to approach or handle electrical equipment; or a person who, having been warned of the hazards involved, has been instructed or authorized by a qualified Supervisor or management member.

**Certified Electrician** – Electricians who have obtained a 442A Industrial or a 309A Construction certificate of qualification.

**Control Device** – means a device that will safely disconnect electrical equipment from its source of energy.

**Electrical Equipment** – means equipment for the generation, distribution, or use of electricity.

**Electrician in Training (EIT's)** – Aspiring electrician's registered with Skilled Trades Ontario who must complete specific criteria, a set number of hours, and a final test to be eligible to become a **Certified Electrician**.

**Isolated** – means separated or disconnected from every source of electrical, hydraulic, pneumatic, or other kind of energy that is capable of making electrical equipment dangerous.

**Qualified Person** – One who has demonstrated skills and knowledge related to the construction and operation of electrical equipment and installations and has received safety training to identify hazards and reduce the associated risk.

## **RESPONSIBILITIES**

**Employer is responsible to:**

1. Provide training and instruction on the Electrical Safety Policy and LOTO program.
2. Properly implement and periodically audit the Electrical Safety Policy and LOTO program.
3. Provide single key locks and tags as well as other LOTO equipment and maintain records of issuance of lock.
4. Provide all relevant PPE to ensure staff are performing their tasks in a safe manner.
5. Prequalify and approve contractors who work at any ONTC location.
6. Discipline, ensuring authorized and affected personnel perform their duties within the requirements of the LOTO Procedure.

**Managers/Supervisors are responsible to:**

1. Communicate any actual and potential hazards of which they are aware;
2. Apply and enforce the LOTO Program for all personnel in the workplace.
3. Identify those personnel who are authorized and affected and trained in accordance with this policy.
4. Periodically inspect the work area to ensure compliance with this policy;
5. Ensure that only authorized workers perform LOTO, and that work is performed in compliance to the procedure.
6. Provide written instructions as required; and
7. Provide to workers, company supplied LOTO equipment and PPE as required.

**Workers and contractors of ONTC are responsible to:**

1. Comply with the Electrical Safety Policy and LOTO Procedure.
2. Notify their supervisor or contact person of any questions or concerns with respect to LOTO.
3. Participate in electrical safety training as required.
4. Provide input on the effectiveness of the LOTO Procedure and participate in annual reviews of the electrical safety policy and LOTO Procedure as required.

5. Achieve a zero-energy state where hazardous energy may harm a person and ensure proper LOTO is achieved.
6. Ensure all power sources remain locked out before resuming work after a temporary absence.
7. Ensure only single keyed locks are used. The key must remain in the direct possession of the authorized person engaged in lockout.
8. remove only the locks that have been assigned by ONTC; and
9. avoid using a Point of Operation switch or controller for the sole Lockout of a device or piece of equipment unless it has been designed to accommodate an energy isolating device.

## **ELECTRICAL SAFETY RULES**

1. A sign warning of the danger, and forbidding entry by unauthorized persons will be posted at the entrance to a room or similar enclosure containing exposed live electrical parts.
2. Any piece of equipment or tool found to be damaged or have defective electrical components or found to pose a safety or health hazard to any employee will be disconnected and removed from service without delay and must be tagged appropriately.
3. Any tool or piece of equipment that is capable of conducting electricity and/or endangering the safety of any worker will not be used around or close to any live electrical installation or equipment that might cause electrical contact with the live conductor.
4. Flammable materials/liquids shall not be stored anywhere near electrical equipment.
5. Eye protection must be worn when carrying out a work assignment.
6. Consider all electrical equipment to be live until you have properly tested it to confirm it's dead.
7. Do not work on "live" equipment unless it is absolutely necessary. If it is necessary, a safe work procedure must be in place.
8. If it is necessary to work on "live" equipment wear rubber gloves and work from a dry location.

9. Do not close any switch without knowledge of the circuit and the reason the switch was left open.
10. Notify the persons affected before the power on any circuit is shut off.
11. All electrical equipment of 110 volts or over must be grounded. Circuits sometimes retain a charge.
12. Portable electrical equipment used outdoors or in damp locations must be equipped with a ground fault circuit interrupter installed at the receptacle or on the circuit at the panel.
13. Specially authorized persons and electricians are the only ones permitted to change fuses.
14. Rubber gloves, tools and equipment must be maintained in good condition.
15. Do not handle “live” wires while standing in water or on moist or steel surfaces.
16. Electrically driven machinery and controls should normally be locked out before servicing. However check with your Supervisor to be sure.
17. Only persons authorized to do so may enter any electrical room and/or enclosure containing live parts. The entrance to any electrical and/or enclosure containing live parts will be marked by conspicuous warning signs stating that entry by unauthorized persons is prohibited.

## **TRAINING**

Employees exposed to an electrical hazard when the risk associated with that hazard is not adequately reduced by the applicable electrical installation requirements shall be trained to understand the specific hazards associated with electrical energy.

- Safety-related work practices and procedural requirements necessary to provide protection from the electrical hazards associated with their job or task assignments; and
- They shall be trained to identify and understand the relationship between electrical hazards and possible injury.

Qualified persons shall be trained in and knowledgeable about the construction and operation of equipment or a specific work method and trained to identify and avoid the electrical hazards that might be present with respect to that equipment or work method. The training required shall meet the requirements of the CSA Z462.21 and may include classroom, on-the-job, electronic, or web-based training methodologies with interactive components.

Employees involved in or affected by the lockout procedure must be trained in the lockout procedure and their responsibility in the execution of the procedures.

Retraining in the lockout procedure shall be performed:

- When the procedures are revised;
- At intervals not to exceed 3 years; and
- When supervision or annual inspections indicate that the worker is not complying with the lockout procedure.

Employee training must be documented to confirm that each employee has received the training and retained for the duration of the employee's employment. The documentation must include

- when the employee demonstrates proficiency in the work practices involved
- contain the content of the training, each employee's name, and date of the training.

## REFERENCES

Part II Canada Labour Code R.S.C, 1985, c. L-2

Published by the Minister of Justice at the following address:

<http://laws-lois.justice.gc.ca>

Implementing an Occupational Health and Safety (OH&S) program November 2017 DSS Catalogue Number CC273-2/17-1E Canadian Centre for Occupational Health and Safety (CCOHS): [www.ccohs.ca](http://www.ccohs.ca)

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Workplace electrical safety, CSAZ462:21 CSA Group., July 20214