



**REQUEST FOR TENDER
FOR THE PROVISION OF CONSTRUCTION SERVICES FOR
FIRE TRAINING GROUND REPLACEMENT – STEEL
STRUCTURE MECHANICAL INSTALLATION**

BID CALL: June 16, 2022

BIDS DUE: JULY 7, 2022 & 3:00 PM EST

2022-RFT-037

SECTION A – TENDER CALL

1. INTRODUCTION

1.1 The City of Iqaluit Department of Public Works and Engineering (the City) is issuing a Request for Tender (RFT) for qualified Proponents to provide construction services as further outlined in this RFT document. The purpose and objectives of this project are as follows:

- a) Have the contractor supply and install the specified mechanical equipment and materials in the steel structure at the City's Fire Training Grounds (adjacent to the West 40 Landfill). Includes appropriate permits.
- b) Have the contractor commission the mechanical installations

2. BACKGROUND

2.1 Location:

Iqaluit is the capital of Nunavut and is located at the south end of Baffin Island, Frobisher Bay 64°31'N latitude and 68°31'W longitude. Access to Iqaluit is provided by regular scheduled commercial aircraft year-round, snowmobile trails from other Baffin Island communities in the winter, and sealift from the port of Montreal in the summer.

2.2 Geology and Terrain:

Iqaluit's location is above the tree line and within the continuous permafrost zone of Canada. The region generally consists of glacially scoured igneous/metamorphic terrain. In some locations, a thin layer of organic material is found.

2.3 Climate:

Iqaluit has an Arctic climate with January and July high and low mean temperatures of -21.5° C/ -29.7°C (high/low) and 11.4° C/3.7° C (high/low) respectively. The annual precipitation is made up of 19.2 cm of rainfall and 255.0 cm of snowfall for a total of 43.0 cm precipitation. The prevailing winds are northwest at 16.7 km/hr.

3. TENDER CALL

3.1 Proponents must submit their Tenders by electronic bid submission only, through MERX Canadian Public Tenders. MERX can be accessed via the following website link – <https://www.merx.com/>. Tenders must address tenders to:

**City of Iqaluit
Attn: Alison Drummond
Procurement Agent**



CONSTRUCTION SERVICES
PART I – PROCUREMENT AND CONTRACT REQUIREMENTS



**901 Nunavut Drive, P.O. Box 460
Iqaluit, Nunavut, X0A 0H0**

- 3.2 Tenders are required to conform to the conditions below. For further instructions on how to submit an electronic bid through MERX, refer to the MERX Electronic Bid Supplier Guide, via the following link – <https://marketing.merx.com/Support/EBSGuide.pdf>. Alternatively, you can contact MERX customer service at 1-800-964-6379.
- 3.3 Bidders must obtain a unique PIN number from MERX in order to upload electronic bid submission documents. It is important to keep this PIN number in a permanent location as it will be required each time you wish to submit a bid response to a call to tender.
- 3.4 Electronic Tenders are to be received before **July 7, 2022** at 3:00 PM EST local Iqaluit time.
- 3.5 The final decision on whether to accept late Bids is at the City's discretion.

END OF SECTION

SECTION B – TENDER CONDITIONS

1. SUBMISSION REQUIREMENTS

- 1.1 The Tenderer shall complete all documents pertaining to this Contract in ink or in type.
- 1.2 If the Tenderer is a corporation, an authorized officer of the corporation shall sign and seal the Form of Tender.
- 1.3 If the Tenderer is a partnership, a minimum of two partners shall sign the Form of Tender and signatures shall be witnessed.
- 1.4 If the Tenderer is a sole proprietorship, the sole proprietor shall sign the Form of Tender and the signature shall be witnessed.
- 1.5 The Tenderer shall submit its Tender by the date and time specified in Part I of the Tender.
- 1.6 The Tenderer shall submit to the City in their complete bid submission:

.i Completed Form of Tender Form, which includes:

.a Appendix A – Consent of Surety.

.b Appendix B – Cost Submission Form.

.ii Bid bond.

Failure to submit the required items identified in (ii) and (iii) may present a Major or Minor Irregularity on the bid. Refer to 1.7 and 1.8 on how Major and Minor Irregularities are to be addressed. The City shall be the sole judge of whether or not a Tender contains irregularities.

- 1.7 Bidders will be automatically disqualified for any Major Irregularities on their bid submission. Major Irregularities are defined as deviations from the competitive procurement process request that affects the price, quality, quantity or delivery, and is material to the award.
- 1.8 Tender irregularities that are Minor Irregularities will be handled in the first instance by conferring with the Tenderer to seek clarification. Minor Irregularities are defined as deviations from the competitive process request, which affects form, rather than substance. The effect on the price, quality, quantity or delivery is not material to the award. The bidder will be given the opportunity to adjust the irregularity and continue in the process. However, if an unsatisfactory irregularity remains after consulting with the Tenderer, the Tenderer may be disqualified.
- 1.9 The Tenderer shall submit electronic files through MERX for both their Security Deposit and Consent of Surety, alongside the electronic tender submission.

1.10 The successful Tenderer shall submit to the City the following documents within five (5) business days of the day the City notifies the successful Tenderer that the documentation should be sent to the City.:

- .i Valid City of Iqaluit Business License.
- .ii Form of Tender forms, which include
 - .a Appendix C – Subcontractors List.
 - .b Appendix D – Equipment List.
 - .c Appendix E – Product Suppliers List.
 - .d Appendix F – Labour & Equipment Rates.

2. INQUIRIES AND AMENDMENTS

2.1 All inquiries concerning this RFT are to be directed by email only to:

Rami Rahhal
Project Manager
Colliers Project Leaders
rami.rahhal@colliersprojectleaders.com

and;

Priyanka Varmora
Assistant Project Manager
Colliers Project Leaders
priyanka.varmora@colliersprojectleaders.com

2.2 Written addendums issued as part of this RFT, in response to inquiries, will be posted publicly on the City's website and on MERX. Verbal explanations or instructions will not be binding.

2.3 Tenderers assume all risk of delivery of amendments. Without limiting the foregoing, the City shall not be held liable for any claim, demand or other action should a transmission be interrupted, not received in its entirety, received after the Closing Time, received by another electronic means other than specified through MERX, or for any other reason over which the City does not have control.

3. SECURITY DEPOSIT

3.1 Every submission shall be accompanied by a security deposit payable to the City of Iqaluit, in an amount not less than 10% of the total Tender amount. The

security deposit shall be in the form of one of the two following security deposit options and shall be submitted with the tenderer's electronic tender submission.:

3.2 OPTION #1: A Digital Bid Bond

- .i Tenderers shall submit a copy of the Digital Bid Bond and follow the submission instructions as stated above in Section 1.9.
- .ii If Tenderer's are using this option, the Tenderer and the Tenderer's Surety should refer to the digital bonding information on Surety Association of Canada's website. Information at this site includes:
 - .a A list of third parties that provide online surety digital bond services, such as Mobile Bonds or Xenex. The City does not endorse or promote any third-party digital bond service provider.
 - .b An Industry Checklist which digital bonds provided should meet.
- .iii The Digital Bid Bond shall be digitally verifiable. The results of the digital verification process shall provide a clear and immediate indication that the document received is the true document executed and that the content has not been changed or altered.
- .iv All instruction details for performing the digital verification of the bond should be included with the uploaded bond and be clear and concise.

3.3 OPTION #2: Scanned Paper Bid Bond / Certified Cheque, Bank Draft, Money Order (PDF Format)

- .i Tenderer's shall scan and attach a copy of the paper Bid Bond, Certified Cheque, Bank Draft or Money Order and follow the submission instructions as stated above in 1.9. Tenderer's will be required to provide to the City the original Bid Bond, Certified Cheques, Bank Draft, and/or Money Order that were scanned and attached with the tender submission within 72 hours of tender close. Failure to provide the above original document(s) or to enter into a contract may result in the tenderer being barred from future tender opportunities for the City of Iqaluit for an indeterminate period of time.
- .ii If an alternative Bid Bond is used, it is recommended that tenderer's request either an ink seal from their Surety or that they trace over the embossed seal prior to scanning to allow for the seal to be visible to the City.

- 3.4 Bid bonds shall be in the name of the City of Iqaluit as obligee and signed and sealed by the Tenderer and by a surety licensed to conduct business as a surety in Nunavut.
- 3.5 The City shall not pay interest on security deposits.
- 3.6 Bid bonds shall be Bid Bond Form CCDC Document No. 220, latest edition, effective until sixty (60) business days after the Closing Date.
- 3.7 Security deposits will be returned after delivery to the City of the required performance bond and labour and material payment bond by the successful Tenderer.
- 3.8 If the Contract is not awarded, all security deposits will be returned with reasonable promptness after such decision is made by the City.
- 3.9 After all executed contracts and bonds are received, and the contract award is made, the successful tenderer and the contract value will be posted on the MERX website. After contract award, the bid deposit of the successful tenderer and all tenderers shall be null and void.

4. CONSENT OF SURETY

- 4.1 Tenderers must submit with the Bid and Bid Bond, a “Consent of Surety,” stating that the surety is willing to supply the performance bond and labour and material payment bond as specified.
- 4.2 A “Consent of Surety” shall be in one of the two following options and shall be submitted with the Tenderer’s submission and as instructed above in 1.9.
 - .i The City’s “Consent of Surety” Form provided in Appendix A.
 - ii. Other “Consent of Surety” Form used by a Surety company and authorized by law to do business in the Territory of Nunavut, and acceptable to the City.

5. PERFORMANCE ASSURANCE

- 5.1 The accepted Bid shall provide security (by way of bonds or a security deposit) as stated in the Contract Documents.
- 5.2 The cost of all security shall be included in the Tender prices.

6. ORDER OF PRECEDENCE

- 6.1 The following order of precedence will apply:

Order of Precedence
Issued Addenda

CONSTRUCTION SERVICES
PART I – PROCUREMENT AND CONTRACT REQUIREMENTS

SUPPLEMENTAL CONDITIONS
PROCUREMENT AND CONTRACT REQUIREMENTS
SERVICE AGREEMENT
GENERAL CONDITIONS
TERMS OF REFERENCE
GENERAL REQUIREMENTS

7. TERMS AND CONDITIONS

- 7.1 Submission of a Bid constitutes acknowledgement that the Tenderer has read and agrees to be bound by all the terms and conditions of this RFT.
- 7.2 The City will not make any payments for the preparation of a response to this RFT. All costs incurred by a Tenderer will be borne by the Tenderer.
- 7.3 This is not an offer. The City does not, by virtue of this Tender call, commit to an award of a Bid, nor does it limit itself to accepting the lowest price or any Bid submitted, but reserves the right to award this Bid in any manner deemed to be in the City's best interest.
- 7.4 Tenderers may amend their Bid at any time prior to the closing date time. Tenderers may not amend their Bid after the closing date time.
- 7.5 The City has the right to cancel this RFT at any time and to reissue it for any reason whatsoever, without incurring any liability and no Tenderer will have any claim against the City as a result of the cancellation or reissuing of the RFT.
- 7.6 The City will not consider any Bid that is delivered to any address or in any manner other than that provided in Part I Tender Call of this RFT.
- 7.7 If a contract is to be awarded as a result of this RFT, it will be awarded to the Tenderer whose Bid for each service, in the City's opinion, provides the best potential value to the City and is capable in all respects to perform fully the contract requirements and has the integrity and reliability to assure performance of the contract obligations.
- 7.8 If the City decides to award a contract based on a submission received in response to this RFT, the Successful Tenderer(s) will be notified of the intent to award in writing, and the subsequent execution of a written agreement shall constitute the making of a Contract. Tenderers will not acquire any legal or equitable rights or privileges whatsoever until a Contract is signed by both parties.
- 7.9 Any resulting contract will be in the form of the City's standard "City of Iqaluit Services Agreement" and it will contain the relevant provisions of this Request for Tenders, the accepted bid as well as such other terms as may be mutually agreed upon, whether arising from the accepted bid or as a result of any negotiations prior or subsequent thereto. The City reserves the right to negotiate modifications with any Tenderer who has submitted a Bid.
- 7.10 A copy of the Services Agreement is included in RFT.
- 7.11 Any amendment made by the City to the Request for Tender will be issued in writing and posted onto the bidding platform in accordance with Section 2.

- 7.12 The Bid and accompanying documentation submitted by the Tenderers are the property of the City and will not be returned. Bid bonds will be returned to all unsuccessful Tenderers.
- 7.13 Tenderers must acknowledge receipt of any addenda issued by the City in their Bid on the Section C – Form of Tender document.
- 7.14 Tenderers shall disclose in their Bid any actual or potential conflicts of interest and/or existing business relationships it may have with the City, its elected or appointed officials or employees. The City may rely on such disclosure.
- 7.15 Tenderers and their agents will not contact any member of the City Council, City Staff or City Consultants with respect to this RFT, other than the City Representative named in Part I Tender Call, at any time prior to the award of a contract or the cancellation of this RFT.
- 7.16 If an arithmetical error is identified in the submitted Bid between any individual price and the price extension (e.g. Unit Price x Quantity of Units), the individual price shall govern. The price extension and the total Bid amount will be corrected accordingly.
- 7.17 For contracts that include multi-phased work which spans more than the current fiscal year, authorization to proceed with work phases that are to be completed in future years is conditional upon approval of capital spending by the City of Iqaluit Council for each future year. Contracts will only be executed for work that has approved funding under the current fiscal budget.

8. VALIDITY OF OFFER

- 8.1 Bids shall remain open for acceptance for a period of not less than sixty (60) business days from the closing date of this RFT.

9. TENDER INELIGIBILITY

- 9.1 Bids that are unsigned, improperly executed, submitted to a location or in a manner other than specified in this RFT, incomplete, conditional, illegible, obscure or contain arithmetical errors, additions not called for, reservations, qualifications, erasures, alterations, or irregularities of any kind, or which are otherwise not completed or submitted in strict compliance with the Instructions to Tenderers, may be rejected by the City whether they constitute as a Major or Minor Irregularity.
- 9.2 Notwithstanding anything to the contrary herein, the City may in its sole discretion elect to retain any such Bid for consideration and may waive any or all of the foregoing, on such terms or conditions as the City may consider appropriate, even if any of the foregoing would otherwise render the Bid null and void and the Bid may be considered in the same manner as Bids that fully conform to the requirements of the Tender Documents without qualification.

10. REVIEW AND ACCEPTANCE OF BID

- 10.1 Upon receipt of the Bids, the City in its discretion may elect to conduct a post tender meeting with one or more Tenderers to discuss in detail their respective bid submission and such other items as the City may consider appropriate or necessary without invalidating the procurement process.
- 10.2 Before award of the Contract, the Tenderer may be required to provide specific information with respect to its legal and or financial status.
- 10.3 **THE LOWEST OR ANY TENDER WILL NOT NECESSARILY BE ACCEPTED.**
- 10.4 Notwithstanding any custom of the trade to the contrary, the City reserves the right to reject the lowest Bid, even if the lowest Bid is a compliant Bid, accept any Bid or part thereof, negotiate any aspect of any Bid, advertise for new Bids, negotiate a contract as the City deems to be most advantageous to the City's interest without incurring any liability, and to award a contract to whomever the City in its sole and absolute discretion deems appropriate and solely in the best interest of the City and no Tenderer will have any claim against the City as a consequence. Unless required otherwise, the City shall not, at any time, be required to disclose any information to the Tenderers regarding the City's consideration and evaluation of Bids.
- 10.5 Following acceptance by the City, a written Notice of Award will be issued to the successful Tenderer. If the Tenderer fails for any reason to execute and return the Articles of Agreement within seven (7) working days of receipt for signature of the Articles of Agreement from the City, or fails to provide the performance bond and labour and material bond or other security deposit stipulated in GC 11 or to satisfy such other terms and conditions specified hereunder within any period specified, or such extension of time as may be granted by the City, then the City reserves the right to terminate the Tenderer's right to complete the Contract and to award the Contract to whomever the City considers appropriate. The bid bond shall forthwith become payable.
- 10.6 The City shall not be obligated in any manner to the successful Tenderer whatsoever until the Contract has been awarded and the Contract has been duly executed by the parties.
- 10.7 If the City receives no Bids satisfactory to the City in its sole discretion, the City reserves the right in its sole discretion to negotiate a contract for the whole or any part of the Work with any one or more persons whatsoever, including any one or more of the Tenderers, or to postpone or cancel this Bid and then issue a new tender, or to cancel or postpone some or all of the Work.
- 10.8 The City shall not, under any circumstances, be responsible for any costs, expenses, loss, damage or liabilities, whether direct, indirect, consequential or economic in nature, incurred by a Tenderer as a result of, in connection with or incidental to:

- .i The tendering of the work;
- .ii Costs incurred for the preparation of this Bid;
- .iii The acceptance or rejection of any Bid; or
- .iv The exercise by the City of its rights under this RFT.

10.9 By participation in the tendering process, the Tenderer on its own behalf and on behalf of all firms, corporations and individuals comprising the Tenderer, agrees that none of the City or its directors, officers, employees, agents and other representatives shall be liable to any Tenderer, or any firm, corporation or individual comprising the Tenderer, including in contract, tort, statutory duty, duty of fairness, duty of care, law, equity or otherwise, for any claims, direct or indirect, whether for costs, expenses, losses or damages, or loss of anticipated profits, or for any matter whatsoever, incurred in preparing and submitting a Bid, or negotiations of a Contract, or in any way arising in connection with the Bid Documents. The Tenderer further agrees on its own behalf and on behalf of all firms, corporations and individuals comprising the Tenderer, that the award of the Contract is in the sole discretion of the City and in no event shall the Tenderer or any firms, corporations or individuals comprising the Tenderer seek injunctive or other relief to prevent or delay the award of the Contract or the performance of any Work or services in relation thereto.

11. UNBALANCED TENDERS

11.1 The Tenderer shall not submit an unbalanced Tender.

11.2 The City shall have the right to:

- .i Deem a Tender to be unbalanced; and
- .ii Reject a Tender which may be, in its opinion, unbalanced.

12. COLLUSION

12.1 The Tenderer shall not engage in collusion of any sort and, in particular, shall:

- .i Ensure that no person or other legal entity, other than the Tenderer, has any undisclosed interest in the Tenderer's Tender; and
- .ii Prepare its Tender without any knowledge of, comparison of figures with or arrangement with any other person or firm preparing a Tender for the same work.

13. RIGHT TO ACCEPT OR REJECT TENDERS

13.1 Notwithstanding any other provision in this Contract, the City shall have the right to:

- .i Accept any Tender;
- .ii Reject any Tender; and
- .iii Reject all Tenders.

13.2 Without limiting the generality of 13.1, the City shall have the right to:

- .i Accept an irregular Tender;
- .ii Accept a Tender which is not the lowest Tender; and
- .iii Reject a Tender even if it is the only Tender received by the City.

13.3 Acceptance of the Tender shall occur at the time the City awards the Tender and not necessarily at the time the award is communicated to the successful Tenderer.

14. CONTRACT DOCUMENTS

14.1 The Tenderer shall obtain and review all Contract Documents as listed in the Form of Tender and all Addenda issued by the City pertaining to this Contract.

15. COMMENCEMENT AND COMPLETION OF WORK

15.1 The Tenderer, in submitting the Bid, agrees that the Tenderer can complete the Work by the date for completion stated in the Tender Form.

16. OMISSIONS, DISCREPANCIES AND INTERPRETATIONS

16.1 Tenderers finding discrepancies or omissions in the drawings or terms of reference or having doubt as to the meaning or intent thereof, shall at once notify the Purchasing Coordinator who will, if necessary, send written instructions or explanations to all Tenderers.

16.2 Oral interpretations made to any Tenderer shall not affect a modification of any provision of the Tender Documents. Only addenda written and issued by the City can be considered.

16.3 The City reserves the right in its sole discretion at any time, and for whatever reason to, by Addendum, modify, amend or otherwise change the Tender Documents. Any such Addendum shall be issued in writing and shall be expressly identified as an Addendum to these Tender Documents. All such changes shall become part of the Tender Documents and their effects shall be

reflected in the Tender prices. The City also reserves the right in its sole discretion to cancel this Tender at any time.

17. IRREVOCABILITY OF OFFER

- 17.1 The Tenderer shall not revoke its offer until after the expiration of sixty (60) business days after the opening of Tenders by the City.
- 17.2 If the Tenderer revokes its offer prior to the expiration of sixty (60) business days after the Tender opening, the Tenderer shall forfeit its Tender security deposit, but this shall not prohibit the City from pursuing and other legal remedy which it may have.

18. ALTERNATIVES & EQUALS

- 18.1 Where requested in this RFT, Tenderers may propose alternatives or equals to the stated scope of work. In case alternate or equals are requested in this RFT, the following will apply:
- .i Where the Tender Documents stipulate a particular product, alternatives or equals will be considered by the City up to ten (10) calendar days prior to the Closing Time.
 - .ii When a request to substitute an allegedly equal product is made to the City, the City may approve the substitution either as an equal or as an alternative and will issue an Addendum to all Tenderers. If a product is approved as equal, all Tenderers may use that product in place of the specified product. If the product is approved as an alternative, Tenderers shall base their prices upon the specified product and shall indicate in the Bid the change in price which will apply if use of the alternative product is allowed.
 - .iii In their submission of alternatives to products specified, Tenderers shall include and allow for any changes required in the Work to accommodate such alternative products. A later claim by the Contractor for an addition to the Contract Price because of changes in the Work necessitated by use of alternative products shall not be considered.
 - .iv Where selected products are stipulated in the Tender Documents the Bid shall be based on the use of only these selected products.
 - .v Bids with alternative products will not be considered, unless the alternative has been approved by the City and communicated to the Bidders through an Addendum as noted in 18.1(ii). Bids with alternatives that have not been approved by the City will be deemed non-compliant.
 - .vi Submissions shall provide sufficient information to enable the City to determine the acceptability of such products.

- .vii Provide complete information on required revisions to other work and products to accommodate each alternative product, and the amount of addition or reduction from Tender prices, including required revisions, for each alternative product.
- .viii Unless a bid for an alternative product is submitted in this manner and later accepted, provide the product specified.

19. PUBLIC OPENING

- 19.1 No public opening of bids will be completed for this competition. Video conference appointment by request only

20. TENDER SIGNING

- 20.1 The Bid must be executed under seal by the Tenderer.
- 20.2 If the Tenderer is an individual or a partnership, the Bid shall be executed by the individual or a partner in the presence of a witness and the signatory must show the capacity in which he or she signs (e.g.: “Partner” or “Proprietor”).
- 20.3 If the Tenderer is a corporation, the Bid shall be executed under the seal of the company, affixed in the presence of the authorized officers or two directors.
- 20.4 If the Tenderer is a joint venture, each party to the joint venture shall execute the Bid under seal in the manner appropriate to such party.

21. APPENDICES TO FORM OF TENDER

- 21.1 Tenderers shall complete all Appendices attached to the Form of Tender and submit these with the Tender.

22. PROVISIONAL ITEMS

- 22.1 Once a Tenderer has been chosen by the City for the Project, it shall be open to the City to accept, reject or negotiate the Tenderer’s bid for any provisional item contained in the Bid. Should the City choose to reject the successful Tenderer’s bid for such provisional work, it shall be open to the City to call for new Bids for this work and the successful Tenderer for the Project may submit a Bid if he so chooses.

23. SUCCESSFUL TENDERER – BONDS

- 23.1 The successful Tenderer and its surety shall provide:
 - .i A performance bond signed and sealed by the Tenderer’s surety; and
 - .ii A labour and material payment bond signed and sealed by the Tenderer’s surety;

Each in the amount of at least fifty percent (50%) of the total Tender price. The cost of Bonds shall be included in the Tender price.

- 23.2 The surety of the successful Tenderer and the bonds referred to in 23.1 must be originals and shall be to the satisfaction of the City.

**24. SUCCESSFUL TENDERER – WORKERS’ SAFETY AND COMPENSATION
COMMISSION CERTIFICATE OF CLEARANCE**

- 24.1 The successful Tenderer shall provide the City with a valid Workers’ Safety and Compensation Commission Certificate of Clearance to the satisfaction of the City.

25. SUCCESSFUL TENDERER – EXECUTION OF ARTICLES OF AGREEMENT

- 25.1 The successful Tenderer shall execute in accordance with Section 1, in triplicate, the Articles of Agreement provided in the Contract Documents.
- 25.2 The successful Tenderer shall forward the executed Articles of Agreement to the City.

26. SUCCESSFUL TENDERER – INSURANCE

- 26.1 The successful Tenderer shall provide the City with an original Certificate of Insurance for each type of insurance coverage required by GC12.3 and any additional coverage specified in the Supplementary Conditions.
- 26.2 The Contractor shall carry insurance in accordance with the requirements detailed in the City's Service Agreement (Part II - Service Agreement of this RFT). The SA has all of the other insurance requirements

- 26.3 The Contractor shall carry insurance, which names the following as additional insureds:

Address

City of Iqaluit

1085 Mivvik Street, P.O. Box 460,
Iqaluit, NU, X0A 0H0

Colliers Project Leaders

2720 Iris Street, Ottawa, ON, K2C
1E6

27. SUCCESSFUL TENDERER – TIME FOR COMPLETION

- 27.1 The successful Tenderer shall Substantially Perform the work by Monday, the 31st day of October, 2022.
- 27.2 The successful Tenderer shall Complete the Work by Tuesday, the 15th day of November, 2022.
- 27.3 The successful Tenderer acknowledges that time shall be deemed to be of the essence of the Contract. For the Tenderer's purpose of establishing a scheduled for the Work, it is anticipated that the Contract Award will be complete 30 calendar days after the opening of Tenders by the City, and then the Commence Work Order will be issued 3 business days after the Contract Award is complete. Milestone dates associated with the Contract will be adjusted, when possible, due to any delays caused by the City during the Contract Award and/or issuance of the Commence Work Order.
- 27.4 The Contract general timelines have been identified below.

ACTION	DATE
Opening Date for RFT	June 16, 2022
Last Day for Bidder to Submit Questions	June 27, 2022 at 3 PM EST
Last Date for Addenda to be Issued	July 1, 2022
Closing Date for RFT	July 7, 2022, at 3:00 pm EST
Contract Award Date	July 14, 2022
Project Kick-Off	July 18, 2022
Substantial Performance	October 31, 2022
Completion	November 15, 2022

28. SUCCESSFUL TENDERER – SUBMISSION OF DOCUMENTATION

- 29.1 The successful Tenderer shall submit the documentation required in 1.1.10 within five (5) business days of the day the City notifies the successful Tenderer that the documentation should be sent to the City.
- 29.2 If the successful Tenderer fails to comply with 29.1 the City may, in its sole discretion, withdraw its acceptance of the Tender and the Tenderer shall have no recourse whatsoever against the City.

29. SUCCESSFUL TENDERER – COMMENCEMENT OF THE WORK

- 30.1 The successful Tenderer shall not commence the Work until it has received a Commence Work Order issued by the City.

30. COVID-19 MITIGATION MEASURES (CMM)

- 30.1 Definitions:
- .i COVID-19 Mitigation Measures (CMM) means measures required to be in compliance with the CMM Guidelines.
 - .ii “CMM Guidelines” means all guidelines and regulations published by the Government of Nunavut Department of Health and the Canadian Construction Association *COVID-19 Standardized Protocols for All Canadian Construction Sites, Version 4, April 16, 2020* regarding measures to mitigate COVID-19.
 - .iii “COVID-19 Change” means any change in the work caused by or attributable to changes in CMM or changes made to applicable laws, ordinances, rules, regulations, or codes of authorities having jurisdiction that pertain to the control of COVID-19 that come into force after the time of Bid Closing.
- 30.2 Instructions to Bidders:
- .i If, in the Owner’s sole opinion, substantial changes to the CMM Guidelines occur within five (5) business days of the Tender Closing, the Owner may adjust the Tender Closing as the Owner deems appropriate to allow for adjustment for these changes.
 - .ii By submitting a Bid, the Contractor acknowledges its willingness and ability to execute the Work under the CMM in force as of the Bid Closing.
 - .iii The Bidder shall ensure that all of its subcontractors are aware of the CMM and the CMM Guidelines.
 - .iv The Bid is to assume that the CMM as of the date of Bid Closing are to be in effect up to and including December 31, 2022, following which the additional scope of work required to meet the Canadian Construction Association COVID-19, *Standardized Protocols for All Canadian*

Construction Sites, Version 4, April 16, 2020 should be assumed to be substantially eliminated.

- .v The incremental cost of any COVID-19 Change will be addressed as a Claim for Change in Contract Price.
- .vi Notwithstanding the foregoing, the Bidder acknowledges its obligation to adhere to the CMM Guidelines and any subsequent revision as part of its responsibility for health and safety on the Work Site.

30.3 Site-Specific Health and Safety Plan

- .i The Site-Specific Health and Safety Plan, as defined in Section K of the General Requirements (PART VI), is to specifically define CMM, a COVID Safety Plan, and is to comply with CMM Guidelines. The Site-Specific Health and Safety Plan is to be updated promptly after the CMM Guidelines are updated.
- .ii The Site-Specific Health and Safety Plan must consider best practices and requirements for construction sites, as provided by the Government of Nunavut (GN) and the Workers Safety and Compensation Commission (WSCC).

30.4 Site Shutdown Plan

- .i “Site Shutdown Plan” means a plan outlining the shutdown procedures for the project in the event of a shutdown directive from the City or governing authority relating to COVID-19.
- .ii The Site Shutdown Plan” shall address items such as how the site will be made safe, how any materials or equipment will be stored or removed, plans regarding any portion or work that requires ongoing monitoring and how the site will be kept secure. Associated timelines required for execution of the plan are to be identified. These procedures are to be updated as required as the project progresses.

30.5 Schedule Impact

- .i If the Contractor is delayed in completion of the Work by Force Majeure or by changes to the CMM, then the time of completion shall be extended by the Town for a period of time equal to the time lost due to such delays. Force Majeure is defined as labour disputes, strikes, lockouts, fire, unusual delay by common carriers or unavoidable casualties, or such other cause beyond the reasonable control of the Contractor. The Contractor's lack of funds is not a cause beyond the Contractor's control. For clarity, any issues or delays in any way arising from or related to COVID-19 (or any similar or related disease), except for delays as a result of changes to the CMM, are expressly excluded and do not fall under the definition of Force Majeure. The Contractor agrees that the

scheduling requirements of the Contract are reasonable in light of any issues that may arise from COVID-19's impact on the Work and the Project, and that the Contractor may not rely on COVID19 (or any similar or related disease) in any manner as a Reason or cause for delay except for delays as a result of changes to the CMM.

- .ii Notwithstanding the foregoing, no extension shall be made for delay unless the Contractor provides to the City written notice within five (5) Working Days of the commencement of the Force Majeure or commencement of the changes to the CMM.

30.6 Cost Impact

- .i In the case of a shut-down or suspension of the Work resulting from changes to the CMM Guidelines, the Contractor shall provide the City the value of any change in the Contract Price and/or Contract Time.
- .ii In the case of a shut-down or suspension of the Work resulting from changes to the CMM Guidelines, the Contractor is to provide, not less than monthly, and more frequently if requested, an accounting of actual incremental costs incurred for any Work required to maintain the Work Site in a safe and secure state.
- .iii Any adjustments to the Contract Amount associated with re-starting the Work is to be quantified within thirty (30) calendar days of such time that authorization to re-commence the Work has been provided.
- .iv When the change to the Work is caused by changes to the CMM Guidelines the City will pay net actual costs only. No allowance for mark-up, contributions to overhead, profit, or stand-by charges will be considered. Labour rates shall include only the actual wage paid to the employee, plus the payroll burden. The Contractor will mitigate cost and time impact to the Contract Amount and the Work Schedule. The Contractor is to provide detailed supporting documentation to substantiate reasonable incurred impact to the Contract Amount & the Work Schedule.
- .v No consideration will be given to adjustment of the Contract Amount or Work Schedule where the impact to the Contract Amount or Work Schedule is as a result of the Contractor's failure to comply with the CMM Guidelines.

END OF SECTION



CONSTRUCTION SERVICES
PART I – PROCUREMENT AND CONTRACT REQUIREMENTS



SECTION C – FORM OF TENDER

Date: _____

Submitted By: Name: _____

Address: _____

Telephone: _____

To: **City of Iqaluit
City Hall
Iqaluit, Nunavut**

Project: **Project Title: Fire Training Ground Replacement – Steel Structure
Mechanical Installation.
Project Number: 821222**

The undersigned Tenderer, having carefully examined the Tender Documents and the Site, and having full knowledge of the Work and of the materials and products to be furnished and used, hereby agrees to provide all necessary materials, products, supervision, labour and equipment and perform and complete all Work and fulfill everything for the stipulated lump sum price of:

(Total in Words)

Dollars \$

in Canadian funds, which price includes all specified cash and contingency allowances and the applicable taxes in force at this date excluding GST.

We have included herewith the security deposit and Consent of Surety as required by the Instructions to Tenderers.

The undersigned also agrees:

1. That the provisions of the Instruction to Tenderers apply, including without limitation provisions that provide that City is in no way obligated to accept this Bid, the City may at its sole discretion to accept any Tender or part thereof or waive any defect, irregularity, mistake or insufficiency and accept any Tender or alternative bid, in whole or in part, which is deemed by the City to be most favorable to its interest, and that limit the City's liability.
2. That the estimate of quantities shown in Tender Documents serves only to provide a basis for comparing Bids and that no representations have been made by either the City or their

Agent that the actual quantities correspond therewith, and further, that the City has the right to increase or decrease the quantities in any or all items and to eliminate items entirely from the Work.

3. That this Bid is made without knowledge of the Bid prices to be submitted for the Work by any other company, firm or person.
4. That this Bid is made without connection or arrangement with any company, firm or person submitting a bid for the Work.
5. That this Bid is made without any undisclosed connection or arrangement with any other company, firm, or person having an interest in this Bid or in the proposed contract.
6. That this Bid is irrevocable for sixty (60) business days after the Closing Time and that the City may at any time within such period accept this Bid whether any other contract has previously been awarded or not and whether acceptance of another Bid has been given or not.
7. If this Bid is accepted by the City, to execute the Articles of Agreement and to present to the City the required security (by way of bonds or a security deposit) as stated in the General Conditions within seven (7) calendar days after the date of Notice of Award.
8. If this Bid is accepted within the time stated herein, and we fail to execute the Articles of Agreement and provide the required Bonds or security deposit, or we request to withdraw, the security deposit provided with the Bid shall be forfeited as damages to the City by reason of our failure, limited in amount to the lesser of the face value of the deposit or the difference between this Bid and the price the Contract is signed.
9. In the event our Bid is NOT accepted within the time stated herein the required security deposit shall be returned to the undersigned in accordance with the provisions in the Instructions to Bidders, unless a mutually satisfactory arrangement is made for its retention and validity for an extended period of time.
10. That payment for the Work done will be made on the basis of the quantities measured by the City or its Agent and at the Bid prices shown in the Tender Form which shall be compensation in full for the Work done under the terms of the Contract.
11. That payment of the contingency allowance or portion thereof will only be made in the event that the City or its Agent authorizes work, in which case the amount of payment will be determined as specified in the General Conditions. Any unused portion thereof will be retained by the City.
12. To commence and proceed actively with the Work on Site within seven (7) business days of the date of the execution of the contract, and to substantially perform the Work by

October 31, 2022, subject to the provisions of Section 6 of the General Conditions for extension of the Contract Time.

13. That should the undersigned fail to complete the Work in the time specified above, he shall compensate the City of Iqaluit in accordance with GC 6 of the General Conditions.
14. That the undersigned has carefully examined the Work described herein, has become familiar with local conditions and the character and extent of the Work, has carefully examined every part of the proposed contract and thoroughly understands its terms and conditions, has determined the source of supply and transport of the materials required, has investigated labour conditions and has arranged for the continuous performance of the Work described in the Tender Documents.

15. Appendices:

- 16.1 Appendix A – Consent of Surety
- 16.2 Appendix B – Cost Submission Form
- 16.3 Appendix C – List of Subcontractors
- 16.4 Appendix D – List of Equipment
- 16.5 Appendix E – List of Product Suppliers
- 16.6 Appendix F – Labour and Equipment Rates

16. Addenda

- 17.1 The following Addenda have been received. The modifications to the Tender Documents noted therein have been considered and the effects are included in the Tender prices.

Addendum #:		Date:	
Addendum #:		Date:	
Addendum #:		Date:	
Addendum #:		Date:	
Addendum #:		Date:	
Addendum #:		Date:	
Addendum #:		Date:	

This Tender is executed under seal at _____ this _____ day of _____ 2022.

Name of Firm: _____



CONSTRUCTION SERVICES
PART I – PROCUREMENT AND CONTRACT REQUIREMENTS



Address: _____

FOR INDIVIDUAL OR PARTNERSHIP:

SIGNED, SEALED AND DELIVERED by:

(Tenderer – Please Print) _____ (Seal)
(Signature of Tenderer)

In the presence of:

(Witness – Signature)

Name: _____

Address: _____

Occupation: _____

FOR LIMITED COMPANY:

The Corporate Seal of:

(Tenderer – Please Print) _____ (Seal)

Was hereunto affixed in the presence of:

Authorized Signing Officer and Title

Authorized Signing Officer and Title

Note: If the Tender is by a joint venture, add additional forms of execution for each member of the joint venture in the appropriate form or forms as above.

END OF SECTION

APPENDIX A – CONSENT OF SURETY

Herewith is the Consent of Surety of the Tender submitted.

By: _____

To: The City of Iqaluit

Dated: _____ 2022 and which is an integral part of the Tender

CONSENT OF SURETY COMPANY

Should it be required, the undersigned Surety Company hereby consents and agrees with the City to become bound as Surety in all performance bonds and labour and material payment bonds required by the Tender Documents, all for the fulfillment of the Contract for the Work covered by the annexed Tender, which may be awarded to:

(Name of Tenderer)

(Address)

At prices set forth in the attached Tender. The said Surety is legally entitled to do business in Nunavut.

The Corporate Seal of:

(Surety – Please Print)

Was hereunto affixed in the presence of:

(Authorized Signing Officer) Title

(Authorized Signing Officer) Title

END OF SECTION

APPENDIX C – LIST OF SUBCONTRACTORS

Re: Bid for **Fire Training Ground Replacement – Steel Structure Mechanical Installation.**

1. This List of Subcontractors Form is acknowledged and agreed to form an integral part of the Bid for:

Fire Training Ground Replacement – Steel Structure Mechanical Installation.

2. The Subcontractors listed below will remain unchanged and will be used to perform the work of the trade section indicated, unless the Owner gives written permission to change one or more of the Subcontractors. Where subcontractors are not intended to be used for the work of the trade section indicated, the term “By Own Forces” is inserted.
3. Each Subcontractor listed below has been consulted and is fully acquainted with the extent and nature of the Work, the contract conditions and requirements, the proposed construction schedule, and has agreed to execute the Work in accordance with the terms of the Contract and for the Bid Price amount shown.

TRADE SECTION	SUBCONTRACTOR COMPANY NAME
Insert Scope Section/ Discipline	_____
Insert Scope Section/ Discipline	_____
Insert Scope Section/ Discipline	_____
Insert Scope Section/ Discipline	_____
Insert Scope Section/ Discipline	_____
Insert Scope Section/ Discipline	_____
Insert Scope Section/ Discipline	_____
Insert Scope Section/ Discipline	_____

Add rows if required.

END OF SECTION

APPENDIX D – LIST OF SUPPLIES

Re: Bid for **Fire Training Ground Replacement – Steel Structure Mechanical Installation.**

This List of Supplies Form is acknowledged and agreed to form an integral part of the Bid for:
Fire Training Ground Replacement – Steel Structure Mechanical Installation.

DESCRIPTION	SIZE	MAKE	MODEL

Add rows if required.

END OF SECTION

APPENDIX E – PRODUCT SUPPLIERS

Re: Bid for **Fire Training Ground Replacement – Steel Structure Mechanical Installation.**

1. This List of Product Suppliers Form is acknowledged and agreed to form an integral part of the Bid for:

Fire Training Ground Replacement – Steel Structure Mechanical Installation.

PRODUCT	PRODUCT SUPPLIER

Add rows if required.

END OF SECTION

APPENDIX F – LABOUR AND EQUIPMENT RATES

Re: Bid for **Fire Training Ground Replacement – Steel Structure Mechanical Installation.**

1. This List of Product Suppliers Form is acknowledged and agreed to form an integral part of the Bid for:
Fire Training Ground Replacement – Steel Structure Mechanical Installation.
2. The rates listed below will remain unchanged and will be used to measure payment for additional work, not include in the Contract Documents.

POSITION	RATE
Insert Position	
Insert Position	
Insert Position	
Insert Position	
Insert Position	

Add rows if required.

EQUIPMENT	RATE
Insert Position	
Insert Position	
Insert Position	
Insert Position	

END OF SECTION

SECTION D – ARTICLES OF AGREEMENT

THIS AGREEMENT MADE IN DUPLICATE THIS _____ DAY OF _____ 2022

BETWEEN:

THE CITY OF IQALUIT

(“the City”)

-and-

(“the Contractor”)

ARTICLES OF AGREEMENT

IN CONSIDERATION of the mutual promises and obligations contained in the Contract Documents, the City and the Contractor agree as follows:

A1. CONTRACT DOCUMENTS

1.1 The documents forming the Contract between the City and the Contractor, referred to herein as the Contract Documents shall consist of:

- a) these Articles of Agreement;
- b) the document attached hereto entitled “General Conditions”;
- c) the document attached hereto entitled “Supplementary General Conditions”;
- d) the documents attached hereto entitled “Plans and Specifications”;
- e) the documents attached hereto entitled “Tender Documents”; and
- f) any amendment or variation of the Contract Documents that is made in accordance with the General Conditions.

1.2 The City will designate a representative for the purposes of the Contract.

1.3 In the Contract:

- a) “Fixed Price Arrangement” means that part of the Contract that prescribes a lump sum as payment for performance of the Work to which it relates; and
- b) “Unit Price Arrangement” means that part of the Contract that prescribes the product of a price multiplied by a number of units of measurement of a class as payment for performance of the Work to which it relates.

- 1.4 Any of the provisions of the Contract that are expressly stipulated to be applicable only to a Unit Price Arrangement are not applicable to any part of the Work to which a Fixed Price Arrangement is applicable.
- 1.5 Any of the provisions of the Contract that are expressly stipulated to be applicable only to a Fixed Price Arrangement are not applicable to any part of the Work to which a Unit Price Arrangement is applicable.

A.2 DATE OF COMPLETION OF WORK AND DESCRIPTION OF WORK

- 2.1 The Contractor shall between the date of these Articles of Agreements and substantial completion in a careful and workmanlike manner, diligently perform and complete the following Work: **Fire Training Ground Replacement – Steel Structure Mechanical Installation.**

A.3 CONTRACT PRICE

- 3.1 Subject to any increase, decrease, deduction or set-off that may be made under the Contract, the City shall pay the Contractor at the times and in the manner set out or referred to in the General Conditions.
 - 3.1.1 the sum of \$ _____ in consideration for the performance of the Work or the part thereof that is subject to a Fixed Price Arrangement, excluding goods and services tax (GST); and
 - 3.1.2 a sum that is equal to the aggregate of the products of the number of units of measurement of each class of labour, plant and material, as certified by the Engineer, multiplied in each case by the appropriate unit price that is set out in the Unit Price Table in consideration for the performance of the Work or the part thereof that is subject to a Unit Price Arrangement, excluding goods and services tax (GST).
- 3.2 For the information and guidance of the Contractor and the persons administering the Contract on behalf of the City, but not so as to constitute a warranty, representation or undertaking of any nature by either party, it is estimated that the total amount payable by the City to the Contractor for the part of the Work to which a Unit Price Arrangement is applicable will not exceed _____, GST excluded.
- 3.3 A3.1.1 is applicable only to a Fixed Price Arrangement.
- 3.4 A3.1.2 and A3.2 are applicable only to a Unit Price Arrangement.
- 3.5 The Contract Price shall exclude Goods and Services Tax.

A.4 ADDRESSES

- 4.1 For all purposes of the Contract, the Contractor's address shall be deemed to be:



CONSTRUCTION SERVICES
PART I – PROCUREMENT AND CONTRACT REQUIREMENTS



4.2 For all purposes of the Contract, the City's address shall be deemed to be:

City of Iqaluit
P.O. Box 460
Iqaluit, Nunavut, X0A 0H0

SIGNED, SEALED AND DELIVERED in the presences of:

CONTRACTOR:

Per:	_____	_____
	Signature	Witness
	_____	_____
	Name	Date

	Position	
Per:	_____	_____
	Signature	Witness
	_____	_____
	Name	Date

	Position	

MUNICIPAL CORPORATION OF THE CITY OF IQALUIT

Per:	_____	_____
	Mayor	Date
Per:	_____	_____
	Chief Administrative Officer	Date

END OF SECTION



CONSTRUCTION SERVICES
PART II – SERVICE AGREEMENT



CITY OF IQALUIT SERVICES AGREEMENT

BETWEEN: THE MUNICIPAL CORPORATION OF THE CITY OF IQALUIT
(hereinafter referred to as the "CITY OF IQALUIT")

OF THE FIRST PART

AND: . **<CONTRACTOR NAME>**
(hereinafter referred to as the "Contractor")

OF THE SECOND PART

WHEREAS the CITY OF IQALUIT has requested the Contractor to provide a price to carry out the Steel Structure Mechanical installation works.

AND WHEREAS the Contractor has agreed to provide such services to the CITY OF IQALUIT in its bid dated **<Bid Submission Date>**;

AND WHEREAS the CITY OF IQALUIT and the Contractor wish to set out the terms and conditions relating to the provision of such services;

THEREFORE the CITY OF IQALUIT and the Contractor agree as follows:

1. SERVICES AND PAYMENT

1.1 The Contractor agrees to provide to the CITY OF IQALUIT those services set out in the job description and scope of work provided on **<RFT Date>**. A copy of the bid is attached as Appendix "A".

1.2 The CITY OF IQALUIT agrees to pay for the services described above, a total amount not greater than **<Bid Value>**, for the provision of professional services based on the Bid dated **<Bid Submission Date>**.

2. TERM

2.1. This Contract shall commence on the **<Contract Commence Date>** and terminates on the **<Contract Termination Date>** unless otherwise terminated in accordance with the provisions of this Contract.

3. NOTICE AND ADDRESS

3.1 Any notice required to be given herein or any other communication required by this contract shall be in writing and shall be personally delivered, sent by facsimile, or posted by prepaid registered mail and shall be addressed as follows:



**CONSTRUCTION SERVICES
PART II – SERVICE AGREEMENT**



i) If, to the CITY OF IQALUIT:

Amy Elgersma
Chief Administrative Officer
City of Iqaluit
P.O. Box 460
Iqaluit, NU
X0A 0H0
Fax: 979-5922

Reference:

ii) If to the Contractor at:

<Contractor Representative – Name>
<Contractor Organization Name>
<Contractor Address>

- 3.2 Every such notice and communication, if delivered by hand, shall be deemed to have been received on the date of delivery or if sent by prepaid registered mail shall be deemed to have been received on the seventh day after posting, or if by facsimile, 48 hours after the time of transmission, excluding from the calculation weekends and statutory holidays.

4. COMPLETE AGREEMENT

- 4.1 This Contract and its attachments constitute the complete Contract between the parties. Except as provided herein, it supersedes and shall take effect in substitution for all previous agreements. It is subject to change only by an instrument executed in writing by the City.
- 4.2 If this Contract arises from a request for proposals or tender call, the provisions of the request for proposals or tender call and the Contractor's bid or proposal submission are incorporated into this Contract and may be used to clarify, explain or supplement this Contract, but shall not be used to contradict any express terms of this Contract.
- 4.3 In the event of a conflict between this Contract, the Contractor's bid or proposal submission, and the City's original tender bid instructions or Request for Proposals, the more recently prepared document shall govern to the extent of such inconsistency.

5. GENERAL TERMS

- 5.1 Any information obtained from or concerning any department of the CITY OF IQALUIT or clients of any department of the CITY OF IQALUIT, by the contractor, its agents or employees in the performance of any contract shall be confidential. The Contractor shall take such steps as are necessary to ensure that any such information is not disclosed to any other person and shall maintain confidential and secure all material and information that is the property of the CITY OF IQALUIT and in the possession of or under the control of the Contractor. This clause survives the termination of this contract.
- 5.2 Time shall in every respect be of the essence. The Contractor shall deliver the services specified in the contract and according to the project schedule on costs. The CITY OF IQALUIT may grant reasonable extensions to the Contractor for delays, if the Contractor can show those delays were caused by circumstances beyond the control of the Contractor.
- 5.3 The Contractor is an independent Contractor with the CITY OF IQALUIT and nothing in this contract shall be construed or deemed to create the relationship of employee and employer or of principal and agent between the CITY OF IQALUIT and the Contractor. The Contractor is solely responsible for payments of all statutory deductions or contributions including but not limited to pension plans, unemployment insurance, income tax, workers' compensation and the Nunavut Payroll Tax.

- 5.4 This contract shall be interpreted and governed in accordance with the laws of Nunavut and the laws of Canada as they apply in Nunavut.
- 5.5 No waiver by either party of any breach of any term, condition or covenant of this contract shall be effective unless the waiver is in writing and signed by both parties. A waiver, with respect to a specific breach, shall not affect any rights of the parties relating to other or future breaches.
- 5.6 The failure of either party at any time to require the performance of any provision or requirement of this contract shall not affect the right of that party to require the subsequent performance of that provision or requirement.
- 5.7 Title to any report, drawing, photograph, plan, specification, model, prototype, pattern, sample, design, logo, technical information, invention, method or process and all other property, work or materials which are produced by the Contractor in performing the contract or conceived, developed or first actually reduced to practice in performing the contract (herein called "the Property") shall vest in the CITY OF IQALUIT and the Contractor hereby absolutely assigns to the CITY OF IQALUIT the copyright in the property for the whole of the term of the copyright. The Contractor shall not be responsible for any loss or damage suffered by the City of Iqaluit or any third parties resulting from any unauthorized use or modification of the property, errors in transmission of the property, changes to the Property by others, the consequences of design defects due to the design of others, or defects in contract documents prepared by others, and the City of Iqaluit agrees to defend, indemnify, and hold the Contractor harmless from and against all claims, demands, losses, damages, liability and costs associated therewith. Subject to the foregoing, the Property may be relied by the City of Iqaluit for design and construction work undertaken by other parties with respect to the Services provided that such parties verify the accuracy and completeness of the Property to their satisfaction.
- 5.8 It is intended that all provisions of this agreement shall be fully binding and effective between the parties, but in the event that any particular provision or provisions or a part of one is found to be void, voidable or unenforceable for any reason whatever, then the remainder of the agreement shall be interpreted as if such provision, provisions, or part thereof, had not been included.
- 5.9 This contract may be extended by the written consent of the parties.
- 5.10 The CITY OF IQALUIT may delegate any of its authority and undertaking pursuant to this contract to any employee or contractor the CITY OF IQALUIT by notice in writing to the Contractor.
- 5.11 This contract shall ensure to the benefit of and be binding on the respective administrators, successors and assignment of each of the parties hereto.
6. CONTRACTOR RESPONSIBILITIES
- 6.1 The Contractor shall indemnify and hold harmless, the CITY OF IQALUIT, its officers, employees, servants and agents from and against all claims, actions, causes of action, demands, losses, costs, damages, expenses, suits or other proceedings by whomsoever made, brought or prosecuted in any manner based upon or related to the negligent acts, errors, or omissions of the Contractor under this contract.
- 6.2 The Contractor shall be liable to the CITY OF IQALUIT for any loss or damage to property or equipment that is supplied to or placed in the care, custody or control of the Contractor for use in connection with the contract if such loss or damage is attributable to the negligence or deliberate acts of the Contractor or its employees or agents.
- 6.3 If, in the opinion of the CITY OF IQALUIT acting reasonably, the Contractor is in default in respect of any obligation of the Contractor hereunder, the CITY OF IQALUIT may rectify such default and pursue a claim against the Contractor for any direct costs associated with any such remediation, including a reasonable allowance for the use of the CITY OF IQALUIT's own employees or equipment.

- 6.4 The Contractor may not assign or delegate work to be done under this contract, or any part thereof, to any other party without the written consent of the CITY OF IQALUIT. In the case of a proposed assignment of monies owing to the Contractor under this contract, the consent in writing of the CITY OF IQALUIT must be obtained.
- 6.5 The Contractor shall keep proper accounts and records of the services for a period of 3 years after the expiry or termination of this agreement. At any time during the term of this contract or during the three years following the completion or termination of this agreement, the Contractor shall produce copies of such accounts and records upon the written request of the CITY OF IQALUIT.
- 6.6 The Contractor shall notify the CITY OF IQALUIT immediately of any claim, action, or other proceeding made, brought, prosecuted or threatened in writing to be brought or prosecuted that is based upon, occasioned by or in any way attributable to the performance or non-performance of the services under this contract.
- 6.7 If at any time the Contractor considers their estimates indicate costs will exceed the project budget they will immediately advise the City of Iqaluit. If in the opinion of the City of Iqaluit, acting reasonably, the excess is due to design, costs factors or matters under the control or reasonably foreseeable by the Contractor, the CITY OF IQALUIT may require the Contractor to do everything by way of revision of the design to bring the cost estimate within the project budget. Costs of completing such revisions shall be based upon a level of compensation reasonably appropriate to the circumstances, including the reason for the revisions.
- 6.8 Except as required in the performance of services set out in this agreement, the Contractor must maintain as confidential all data and information made available to the Contractor, the CITY OF IQALUIT, or any other parties which is generated by or results from the Contractor's performance of the Services described in this Contract. All such data and information is the property of the City of Iqaluit. This clause shall survive the termination of the Contract.

7. TERMINATION

- 7.1 The CITY OF IQALUIT may terminate this contract at any time upon giving written notice to this effect to the Contractor if, in the opinion of the CITY OF IQALUIT, the Contractor is unable to deliver the service as required, the Contractor's performance of work is persistently faulty, in the event that the Contractor becomes insolvent or commits an act of bankruptcy, in the event that any actual or potential labor dispute delays or threatens to delay timely performance of the contract or the (Contractor's Sub-Contractor) defaults or fails to observe the terms and conditions of the contract in any material respect.
- 7.2 This contract shall terminate as of the day for termination set out in the written notice and the Contractor shall forthwith invoice the CITY OF IQALUIT for work performed to the date of termination.
- 7.3 Any invoice submitted by the Contractor pursuant to clause 7.2 shall be reviewed by the CITY OF IQALUIT to assess the amount which is properly due and owing for work done by the Contractor prior to termination.

8. FINANCIAL

- 1.1 The CITY OF IQALUIT, having given written notice of a breach, may withhold or hold back in whole or in part any payment due the Contractor without penalty, expense or liability, if in the opinion of the Contracting Authority, the Contractor has failed to comply with or has in any way breached an obligation of the Contractor. Any such hold back shall continue until the breach has been rectified to the satisfaction of the CITY OF IQALUIT.
- 8.2 The CITY OF IQALUIT may set off any payment due the Contractor against any monies owed by the Contractor to the CITY OF IQALUIT.
- 8.3 The City of Iqaluit will pay the Goods and Services Tax (GST).

- 8.4 Provided all terms and conditions on the part of the Contractor have been complied with, each invoice will be paid thirty (30) calendar days after receipt of the invoice, or thirty (30) calendar days after delivery of the services, whichever is later.
- 8.5 The CITY OF IQALUIT may, in order to discharge lawful obligations or to satisfy lawful claims against the Contractor or a Sub-Contractor arising out of the execution of work, pay any amount, which is due and payable to the Contractor under the contract, if any, directly to the obligee of and the claimants against the Contractor or Sub-Contractor.

9. INSURANCE AND LIABILITY

- 9.1 The Contractor's liability to the City of Iqaluit for claims arising out of this Agreement, or in any way relating to the Services, will be limited to direct damages and to the re-performance, without additional compensation, of any Services not meeting a normal professional standard of care and such liability will, in the aggregate, not exceed the amount of \$1,000,000.00. The limitations of liability will apply, to the extent permitted by law, whether Contractor's liability arises under breach of contract or warranty; tort, including negligence; strict liability; statutory liability; or any other cause of action, and will extend to and include Contractor's directors, officers, employees, insurers, agents and sub-contractor.
- 9.2 In no event will either party be liable to the other party for indirect or consequential damages including without limitation loss of use or production, loss of profits or business interruption.
- 9.3 The Contractor shall, without limiting his obligations or liabilities hereto, obtain, maintain and pay for during the period of this agreement, the following insurance with limits not less than those shown:
- Workers' Compensation insurance covering all employees engaged in the work in accordance with the statutory requirements of the Territory or Province having jurisdiction over such employees. If the Contractor is assessed any additional levy, extra assessment or super-assessment by a Workers' Compensation Board as a result of an accident causing injury or death to an employee of the Contractor or any sub-contractor, or due to unsafe working conditions, then such levy or assessment shall be paid by the Contractor at its sole cost and is not reimbursed by the CITY OF IQALUIT.
 - Employer's liability insurance with limits not less than \$500,000 for each accidental injury to or death of the Contractor's employees engaged in the work. If Workers' Compensation insurance exists, then in such event, the aforementioned Employer's Liability insurance shall not be required but the Comprehensive General Liability policy referred to in item (d) herein shall contain an endorsement providing for Contingent Employers' Liability insurance.
 - Motor Vehicle, water craft and snow craft standard liability insurance covering all vehicles and/or craft owned or non-owned, operated and/or licensed by the Contractor and used by the Contractor in the performance of this agreement in an amount not less than one million dollars (\$1,000,000.00) per occurrence for bodily injury, death and damage to property; and with respect to busses limits of not less than one million dollars (\$1,000,000.00) for vehicle hazards and not less than one million dollars (\$1,000,000.00) for Bodily Injury to or death of one or more passengers and loss of or damage to the passengers property in one accident.)
 - Comprehensive General Liability Insurance with limits of not less than \$5,000,000.00 (inclusive) per occurrence for bodily injury, death and damage to property including loss of use thereof. Such insurance shall include but not be limited to the following terms and conditions:
 - Products & Completed Operations Liability *
 - Contractor's Protective Liability



CONSTRUCTION SERVICES
PART II – SERVICE AGREEMENT



- Blanket Contractual Liability
- Broad Form Property Damage
- Personal Injury Liability
- Cross Liability
- Medical Payments
- Non-owned Automobile Liability *
- Contingent Employers Liability *
- Employees as Additional Insureds *

**WHERE APPLICABLE*

- e) Professional Liability Insurance with limits of not less than two hundred fifty thousand dollars (\$250,000.00) per claim and five hundred thousand dollars (\$500,000.00) in the annual aggregate, to cover claims arising out of the rendering of or failure to render any professional service under this contract or agreement.

All policies shall provide that thirty days written notice be given to the CITY OF IQALUIT prior to any cancellations of any such policies.

The Comprehensive General Liability Insurance policies shall name the CITY OF IQALUIT and any permitted sub-contractor's as additional insureds only with respect to the terms of this contract and shall extend to cover the employees of the insureds hereunder.

The Contractor shall be responsible for any deductibles, exclusions and/or insufficiency of coverage relating to such policies.

The Contractor shall deposit with the CITY OF IQALUIT prior to commencing with the work a certificate of insurance evidencing the insurance(s) required by this clause in a form satisfactory to the CITY OF IQALUIT and with insurance companies satisfactory to the CITY OF IQALUIT.

IN WITNESS WHEREOF the parties hereto have set their hand as of the date and year entered below.

FOR THE CITY OF IQALUIT:

FOR THE CONTRACTOR:

Name/Title

Name/Title

Signature

Signature

Date

Date

Witness

Witness

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1. GENERAL PROVISIONS

1.1 Definitions

The following terms, whenever used in the Contract Documents, shall mean:

- a) **“Adjustment”**: a change in either the Contract Price or the Contract Time, or both, in accordance with the applicable provisions of the Contract Documents;
- b) **“Applicable Laws”**: any and all applicable laws, rules, regulations, by-laws, codes and orders of any and all government bodies, agencies, authorities and courts;
- c) **“Arbitrator”**: the person appointed under GC 9.3(a);
- d) **“Articles of Agreement”**: the executed Articles of Agreement;
- e) **“Change Order”**: a written instrument prepared by the City Representative and signed by the City and the Contractor stating their agreement upon:
 - i. a change in the Work, and
 - ii. the method and/or the amount of Adjustment, if any;
- f) **“City”**: the party defined as such in the Articles of Agreement;
- g) **“City Representative”**: A Consultant, Owner’s Agent, and/ or Engineer designated as such in the Articles of Agreement, or such other person designated as such by the City from time to time, who will be responsible for administering the construction contract;
- h) **“Claim”**: any or all of:
 - i. a demand or assertion by the City or the Contractor seeking an interpretation of Contract terms, an Adjustment, or other relief with respect to the terms of this Contract;
 - ii. other disputes and matters in question between the City and the Contractor arising out of or relating to this Contract; and
 - iii. allegations by the City or the Contractor of errors or omissions on the part of the City Representative;
- i) **“Completion Date”**: the date of Substantial Performance of the Work, as certified by the City Representative;

- j) **“Construction Schedule”**: the Construction Schedule referred to in GC 3.6, including revisions thereto as provided in GC 3.6, GC 10.2(d) or otherwise required by the City Representative;
- k) **“Consultant”**: a person retained by the City to act as the City’s Representative;
- l) **“Contract”**: the undertaking by the parties to perform their respective duties and discharge their obligations as set out in the Contract Documents which represents the entire agreement between the parties;
- m) **“Contract Documents”**: the documents referred to in the Articles of Agreement and amendments agreed on by the parties in writing;
- n) **“Contract Price”**: the sum stated in the Articles of Agreement and as may be amended during the progress of the Work;
- o) **“Contract Time”**: the time stated in the Articles of Agreement, and as may be amended during the progress of the Work, elapsing from the date of commencement of the Work until the date of Substantial Performance of the Work, as certified by the City Representative;
- p) **“Contractor”**: the party defined as such in the Articles of Agreement;
- q) **“Day”**: a calendar day;
- r) **“Engineer”**: a person retained by the City to act as the City’s Representative;
- s) **“Final Completion”**: when the Work has been performed in accordance with the Contract Documents, as certified by the City Representative;
- t) **“GC”**: an acronym reference to a clause in these general conditions of this Contract;
- u) **“Holdback Payment Certificate”**: a certificate issued in accordance with GC 5.6;
- v) **“Lien Holdback”**: has the meaning given in GC 5.2(a)(i);
- w) **“Owner’s Agent”**: a person retained by the City to act as the City’s Representative;
- x) **“Project”**: the total construction of which the Work to be performed under this Contract may be the whole or a part;
- y) **“Referee”**: the person appointed under GC 9.2(a);

- z) **“Site”**: the land or actual place designated in the Contract Documents for the performance of the Work;
- aa) **“Subcontractor”**: a party having a direct contract with the Contractor for the performance of any part of the Work, or to supply products worked to a special design for the Work;
- bb) **“Substantial Performance”**: when the Work has progressed to the point where, in the opinion of the City Representative as evidenced by the certificate of Substantial Performance, it is sufficiently complete, in accordance with the Contract Documents, so that the Work can be utilized for the intended purpose;
- cc) **“Supplier”**: a party having a direct contract with the contractor to supply products not worked to a special design for the Work;
- dd) **“Work”**: all or any part of the construction and services required by the Contract Documents, including all labor, materials, equipment and services provided or to be provided by the Contractor to fulfill his obligations under this Contract.

1.2 Documents and Interpretation

- a) It is the intent of the Contract Documents to include all labour, materials, equipment and services necessary to perform the Work in accordance with the Contract Documents. Any labor, materials, equipment and services that may be reasonably inferred from the Contract Documents or from prevailing custom or trade usage as being required to produce the intended result, will be furnished and performed by the Contractor, whether or not specifically called for.
- b) The Contract Documents are complementary, and what is required by one document shall be as binding as if required by all.
- c) This Contract represents the entire agreement between the City and the Contractor and supersedes all prior negotiations, representations and agreements, either written or oral.
- d) When words or phrases which have a well-known technical or construction industry or trade meaning are used in the Contract Documents and are not otherwise defined, they shall be interpreted in accordance with that meaning.
- e) The Contract Documents shall not be construed to create a contractual relationship of any kind between:

- i. the City Representative and the Contractor, a Subcontractor, a Supplier, a subcontractor or its or their agent or employee, or other person performing any of the Work;
- ii. the City and a Subcontractor, a Supplier, or their agent, employee, or other person performing any of the Work, or
- iii. between any persons or entities other than the City and the Contractor.

The City Representative shall however, be entitled to demand performance and enforce the obligations of the parties under this Contract, to facilitate performance of the City Representative's duties.

- f) Clarifications and interpretations of the Contract Documents shall be issued by the City Representative as provided in GC 4.1.
- g) In the event of any inconsistency or conflict between provisions of the Contract Documents, the following shall apply:
 - i. documents of later date shall govern over earlier documents of the same classification;
 - ii. figured dimensions shown on drawings shall govern over scaled dimensions;
 - iii. drawings of larger scale shall govern over those of smaller scale;
 - iv. specifications shall govern over drawings;
 - v. the general conditions shall govern over the specifications;
 - vi. supplementary general conditions shall govern over the general conditions, and
 - vii. the Articles of Agreement shall govern over all documents.
- h) The City shall provide the Contractor with as many sets of Contract Documents as are reasonably required for the performance of the Work.
- i) The Contractor shall maintain a set of drawings on the Site and record accurately and legibly all deviations caused by Site conditions and written instructions or change orders ordered by the City Representative. The Contractor shall also keep one copy of all current Contract Documents and shop drawings on the Site, in good condition. These documents shall be available to the City Representative throughout the duration of the Work.

- j) All Contract Documents, including copies, and all models furnished by or to the Contractor are and shall remain the property of the City and are not to be used on other work. The Contract Documents are not to be copied or revised in any manner without the City's written consent.
- k) The division into sections, the table on contents, and the heading in the Contract Documents, other than in the drawings and specifications, form no part of this Contract but are inserted for convenience of reference only.
- l) Any reference to a statutory provision shall include any subordinate legislation made and from time-to-time amended, extended or re-enacted.
- m) Unless otherwise indicated, all dollar amounts referred to in this Contract are in lawful money of Canada.
- n) If any provision of this Contract is determined to be invalid or unenforceable in whole or in part, such invalidity or unenforceability shall attach only to such provision and everything else in this Contract shall continue in full force and effect, In the event that any provision of this Contract, as amended from time to time, shall be deemed invalid or void, in whole or in part, by any court of competent jurisdiction, the remaining terms and provisions of this Contract shall remain in full force and effect.
- o) The schedules, appendices and attachments to this Contract are an internal part of this Contract and a reference to this Contract includes a reference to the schedules, appendices and attachments.
- p) The language of the specifications and other documents comprising this Contract is in many cases written in the imperative for brevity. Clauses containing instruction, directions or obligations are directed to the Contractor and shall be construed and interpreted as if the words "the Contractor shall" immediately preceded the instructions, directions or obligations.
- q) Unless the context otherwise requires, wherever used herein the plural includes the singular, the singular includes the plural, and each of the masculine, feminine and neuter genders include all other genders.
- r) Unless otherwise provided in this Contract, all accounting and financial terms used in this Contract shall be interpreted and applied in accordance with Canadian generally accepted accounting principles, consistently applied from one period to the next.
- s) References containing terms such as:

- i. “hereof,” “herein,” “hereto,” “hereinafter,” and other terms of like import are not limited in applicability to the specific provision within which such references are set forth but instead refer to this Contract taken as a whole; and
- ii. “includes” and “including”, whether or not used with the words “without limitation” or “but not limited to”, shall not be deemed limited by the specific enumeration of items but shall in all cases be deemed to be without limitation and construed and interpreted to mean “includes without limitation” and “including without limitation”;
- t) Whenever the terms “will” or “shall” are used in this Contract in relation to the Contractor they shall be construed and interpreted as synonymous and to read “the Contractor shall”.

1.3 Notices

- a) Where a notice is required by the Contract Documents to be given in writing to the Contractor, it may be delivered personally to the Contractor or his site superintendent, or delivered or sent by mail or facsimile transmission to the Contractor’s address set out in the Articles of Agreement or to his office at or near the Site.
- b) Where a notice is required by the Contract Documents to be given in writing to the City Representative, it may be delivered personally, by email, or delivered or sent by mail or facsimile transmission to the City Representative’s address set out in the Articles of Agreement, or to the office of the City Representative at or near the Site.
- c) Notwithstanding the foregoing provisions of this GC 1.3, each party shall use the most expeditious method of giving the written notice or communication.
- d) A written notice or communication sent by mail shall be deemed to have been received ten (10) calendar days from the date of posting. Whenever a notice or communication is sent by facsimile transmission, acknowledgement from the receiving party must be given to the other party that the notice or communication has in fact been received, for it to be effective; this acknowledgement may be made verbally, in person or by telephone. If no such acknowledgement is given, it shall be deemed to have been received and be effective ten (10) calendar days from the date the original document was sent.

1.4 Rights and Renders

- a) No obligations or responsibilities of any kind by or on behalf of the City shall be implied into the Contract Documents if in the opinion of the City Representative, it is

not reasonable under the circumstances to imply that such obligations or responsibilities form part of the Contract Documents.

- b) Any failure by the City or the City Representative to enforce or to require the strict performance of any of the provisions of this Contract shall not, in any way constitute a waiver of those provisions and affect or impair those provisions or any right the City has at any time to avail itself of any remedies the City may have for any breach of these provisions or to require the Work to be performed in accordance with the Contract Documents.
- c) Except as expressly provided in the Contract Documents, the duties and obligations imposed by the Contract Documents and the rights and remedies available thereunder shall be in addition to and not a limitation of any duties, obligations, rights and remedies otherwise imposed or available by law.

1.5 Assignment

This Contract, or any part of it, or any benefit or interest in it, shall not be assigned by either party without the prior written consent of the other party, which consent shall not be unreasonably withheld. Notwithstanding the foregoing, the City has the right, in the event of any default by the Contractor, to assign all its rights and remedies against the Contractor to the Government of Nunavut.

1.6 Applicable Law

This Contract shall be deemed to have been made in Nunavut and shall be governed by and interpreted in accordance with the laws of Nunavut and the laws of Canada applicable therein.

1.7 Successors and Assigns

This Contract shall ensure to the benefit of and be binding upon the parties hereto and their lawful heirs, executors, administrators, successors and assigns.

2. CITY'S OBLIGATIONS

2.1 Payment

Subject to any other provision in the Contract Documents, the City shall make payments to the Contractor at the times and in the manner set out in GC 5.

2.2 Site Availability

- a) The City shall furnish, as indicated in the Contract Documents, the lands upon which the Work is to be performed, rights-of-way and easements for access to the Site and any other lands designated for the use of the Contractor. The Contractor shall

provide and pay for any additional lands and access the Contractor may require, in accordance with GC 3.10(a).

- b) Except for permits and fees which are the responsibility of the Contractor under GC 3.13, the City shall obtain and pay for necessary approvals, easements and charges required for the development of the Site and for the use or occupancy of permanent structures or for permanent changes in existing facilities.

2.3 Consultant, Owner’s Agent, and/ or Engineer as City Representative

- a) Unless otherwise provided in the Contract Documents, the City shall communicate with the Contractor through the Consultant, and the Contractor shall communicate with the City through the Consultant.
- b) If the contract with the Consultant is terminated, the City shall promptly appoint a replacement.

2.4 Reference Points

The City shall establish physical reference points for construction on the Site which are, in the opinion of the City Representative, necessary to enable the Contractor to proceed with the Work. The Contractor shall safeguard such reference points in accordance with GC3.11(b).

2.5 Materials Supplied by the City

Any materials, instructions, information or services required to be supplied by the City under this Contract shall be furnished with reasonable promptness to avoid delay in the orderly progress of the Work.

2.6 Control of the Work

Neither the City nor the City Representative shall supervise or have control or authority over, nor be responsible for, the Contractor’s means, methods, techniques or procedures of construction. Neither the City nor the City Representative will be responsible for the Contractor’s failure to perform the Work in accordance with the Contract Documents, nor for its failure to comply with Applicable Laws.

2.7 Limitation of Liability

In no event, including without limitation if the City breaches its obligations under this Contract, shall the City be liable to the Contractor, its Subcontractors, its Suppliers, or any other parties engaged directly or indirectly by or acting on their behalf, for indirect loss, consequential loss, loss of business opportunity or loss of anticipated profit.

3. CONTRACTOR'S OBLIGATIONS

3.1 General Obligations

Notwithstanding any omissions from the Contractor's tender, the Contractor is required to perform all of the Work required by the Contract Documents, including any Work which can be reasonably inferred from them as being necessary to produce the intended result. The Contractor is to perform the Work within the Contract Time, in accordance with the Construction Schedule referred to in GC 3.6.

3.2 Independent Contractor

The Contractor is an independent contractor and shall have complete control of the Work. The Contractor shall effectively direct and supervise the Work to ensure conformance with the Contract Documents. The Contractor shall be solely responsible for all construction means, methods, techniques, sequences and procedures and for coordinating all parts of the Work, except as may be otherwise specified in the Contract Documents.

Nothing in this Contract shall be construed to mean that the Contractor is an employee, agent or other representative of the City.

3.3 Review of Contract Documents

- a) By executing this Contract, the Contractor represents that the Contractor has reviewed the Contract Documents and has verified the dimensions, quantities and details described in them. Failure to discover or correct errors, omissions, conflicts or discrepancies which ought to have been discovered by such a review shall not relieve the Contractor from full responsibility for unsatisfactory Work, faulty construction or improper operations resulting therefrom, nor from rectifying such conditions at the Contractor's expense.
- b) If the Contractor proceeds with the Work in the face of an error, inconsistency or omission that the Contractor discovered, or that a competent Contractor reasonably experienced in the Work would have discovered, without additional instructions from the City Representative, then the Contractor shall at the Contractor's cost remove or replace any incorrectly constructed Work.

3.4 Site Conditions

- a) By executing this Contract, the Contractor represents that the Contractor is familiar with the conditions under which the Work is to be performed. The Contractor further represents that the Contractor understands the requirements of the Contract Documents and what effects the Site conditions will have on the Work. The Contractor's failure to visit the Site will not excuse the Contractor from the responsibility which otherwise would have been assumed, had the Contractor visited the Site.

- b) Following the start of the Work, if the subsurface conditions are substantially different from what could reasonably have been expected, based on a reasonable and proper examination of the Site by the Contractor and the information provided in the tender documents, if any, the Contractor must promptly notify the City Representative in writing prior to performing the Work. The Contractor may make a claim for changed site conditions in only accordance with GC 9.1.

3.5 Temporary Structures

The Contractor shall have the sole responsibility for the design, erection, operation, maintenance and removal of temporary structures and other temporary facilities and the design and execution of construction methods required in their use. The Contractor shall engage and pay for professional engineering personnel, registered to practice in Nunavut, skilled in the appropriate discipline, to perform these functions where required by law or by the Contract Documents and in all cases where such temporary facilities and their method of construction are of such a nature that professional engineering skill is required to produce safe and satisfactory results. The Contractor shall submit engineered documents to the City Representative, for review, before commencing temporary work.

3.6 Schedule

- a) Within fourteen (14) calendar days of executing the Articles of Agreement and as a condition of the first progress payment, the Contractor shall submit to the City Representative for review, a proposed Construction Schedule showing the anticipated time of commencement and completion of each of the major activities of the Work to be performed. This Construction Schedule shall include the sequence and coordination of the various operations and the estimated time required for the Work and shall provide sufficient detail to permit the City Representative to monitor the progress of the Work. The Contractor shall revise the proposed Construction Schedule as requested by the City Representative, and the Contractor shall perform the Work in strict adherence to the Construction Schedule, including revisions thereto required by the City Representative, unless it is changed in accordance with the terms of this Contract.
- b) If at any time it should appear to the City Representative that the actual progress of the Work does not conform to the Construction Schedule, the Contractor shall produce at the City Representative's request, a revised Construction Schedule showing the modifications necessary to ensure completion of the Work in accordance with the previously approved Construction Schedule and shall promptly adopt acceptable additional means and methods of construction, at no cost to the City, which will make up for the time lost and will ensure completion in accordance with the revised Construction Schedule.

- c) If the Contractor fails or refuses to revise the Construction Schedule as required by this GC, this Contract may be terminated at the City's option, in accordance with GC 10.3.
- d) The City Representative's review, comments, consent, acceptance or approval to the Construction Schedule shall not relieve the Contractor of any of the Contractor's obligations under this Contract.

3.7 Superintendent

- a) The Contractor shall assign a competent superintendent and necessary assistants, one or more of whom shall be in attendance at the Site at all times during the progress of the Work. The superintendent and necessary assistants, if any, shall be designated in writing to the City Representative and shall act as the Contractor's authorized representative at the Site. All written or oral communications to the superintendent shall be deemed to have been given to the Contractor. The superintendent shall only be replaced after the Contractor has received written approval from the City.
- b) The City may order the removal from the Work of any superintendent, supervisor, foreman or other employee who is in the opinion of the City, unfit for the Work, unskilled in the work assigned to him or otherwise unsuitable. Any person so removed shall not be re-employed on the Work by the Contractor or by a Subcontractor.

3.8 Subcontractors

- a) The Contractor shall not employ any Subcontractor without the approval of the City. Once the names of the proposed Subcontractors have been submitted, the Contractor shall not change these Subcontractors without the advance written consent of the City. If any changes are made without consent, this Contract may be terminated at the City's option, in accordance with GC 10.3.
- b) The City, through the City Representative, may, at any time during the performance of the Work, object to the use of a Subcontractor and direct the Contractor in writing to employ a different Subcontractor satisfactory to the City Representative.
- c) The Contractor shall be fully responsible to the City for the acts and omissions of Subcontractors, their agents, employees, and all parties engaged by the Contractor or its Subcontractors for the provision of work or the supply of materials.
- d) The Contractor agrees to incorporate the terms of the Contract Documents into all the Contractor's subcontract agreements.

- e) The Contractor shall maintain good order and discipline among the Contractor's employees and the Subcontractors engaged in the Work. The Contractor shall not employ, or permit Subcontractors to employ, workers who are not skilled in the assigned task. The Contractor shall employ sufficient workers to perform the Work in compliance with the Construction Schedule.

3.9 Other Contractors

- a) The City reserves the right to let separate contracts with other contractors or workers, or to undertake work using the City's own forces to do other work. If other contractors, workers or the City's own forces are sent onto the Site, with or without plant and material, the Contractor shall, to the satisfaction of the City, grant access to and cooperate with such persons and, in accordance with usual construction practice, coordinate the Work with the other work and connect to other work as specified or shown in the Contract Documents.
- b) The Contractor shall at all times remain the Constructor, with regards to the Health and Safety Act requirements. The City and other contractors entering the Contractors site shall be responsible for adhering to the Contractor's Health and Safety policy.
- c) If the sending of other contractors, workers or the City's own forces onto the Site results in a delay in the performance of the Work, which could not have been reasonably foreseen or anticipated by the Contractor when executing the Articles of Agreement, the Contractor may make a claim therefor in accordance with GC 6.2 and 9.1.
- d) If the Contractor discovers any deficiencies in any other work which might affect the Work, the Contractor shall immediately report such deficiencies to the City Representative and then confirm such report in writing.

3.10 Use of the Site

- a) The Contractor shall make every effort to confine the Contractor's equipment and plant, storage of materials and operations to limits indicated by the Contract Documents, by a specific direction of the City Representative or by Applicable Laws and shall not unreasonably occupy the Site. Where the Contractor requires additional land for the erection of temporary facilities and storage of materials, including access to them, the Contractor shall arrange for such and assume all costs and liabilities arising therefrom.
- b) The Contractor shall not load or permit to be loaded on any part of the Work, a weight or load or force that will endanger its safety or exceed the design loads.

- c) The Contractor shall not interfere in any way with the work or scheduling of any other contractor, worker or employee of the City. Subject to GC 3.9(b), in order to avoid or minimize such interference, the City may in its absolute discretion, establish schedules or methods and shall notify the Contractor accordingly.

3.11 Survey

- a) The Contractor shall provide the City Representative with assistance, as required, to make any surveys and measurements, and to establish or check lines and grades.
- b) The Contractor shall safeguard all points, stakes, grade marks and benchmarks made or established on the Work. The Contractor shall bear the expense of re-establishing them and for rectifying Work improperly installed due to the Contractor's failure to safeguard such points, stakes and marks. Additional surveys and staking required by the Contractor to perform the Work, shall be provided by the Contractor at its expense.

3.12 Protection of the Work, Property and the Public

- a) The Contractor shall be responsible for protecting the Work, the City's property at the Site including the Contract Documents and any plant and material, including plant and material supplied by the City to the Contractor, against loss or damage from any cause but subject to GC 3.15(c). In particular, the Contractor shall take necessary precautions, at the Contractor's expense, to ensure that:
 - i. no person, adjacent property, right, easement or privilege is injured, damaged or infringed by reason of the Contractor's activities in performing the Work;
 - ii. pedestrian and other traffic on any public or private road or waterway is not unduly impeded, interrupted or endangered by the performance or existence of the Work;
 - iii. fire hazards in or about the Work or the Site are minimized;
 - iv. adequate medical services are available to all persons employed on the Work at all times during the performance of the Work;
 - v. adequate sanitation measures are taken in respect of the Work; and
- b) The City Representative may order the Contractor to do such things and to perform such additional Work as the City Representative considers reasonable and necessary to ensure compliance with or to remedy a breach of GC 3.12(a) and the Contractor shall comply with the directions of the City Representative, at the Contractor's expense.

3.13 Permits

- a) The Contractor shall procure and post at the Site all permits, certificates and licenses required for the construction of the Work and shall be responsible for all fees in respect thereof.
- b) The Contractor will be responsible for procuring and coordinating all permits that the GN Office of the Chief Boiler and Gas Inspector regulates.
- c) The Contractor will be responsible for procuring and coordinating all permits issued by the City's Public Works and Engineering Department. Such permits include:
 - i. Water & Sewer Service Connection/ Disconnection Permit
 - ii. Utility Permit
 - iii. Road Closure Permit

Permit applications must be submitted to the City twenty (20) business days prior to the start of the works.

3.14 Applicable Laws

- a) The Contractor shall perform the Work and give any required notices in full compliance with all Applicable Laws, ordinances, rules, regulations, codes and orders of the municipal and other authorities having jurisdiction which are in or come into force during the performance of the Work.
- b) The Contractor shall have due regard for the protection of the environment in the performance of the Work and shall not place any materials, including without limitation, hazardous materials, or dispose of any such materials, or perform any Work in a manner contrary to applicable federal or territorial or municipal environmental laws and regulations, either at the Place of the Work, or at any other place or property.

3.15 Material and Plant Supplied by City

- a) The Contractor is liable for any loss or damage to material, plant or real property that is supplied or placed by the City in the care, custody and control of the Contractor for use in connection with the Work, whether or not that loss or damage is attributable to causes beyond the Contractor's control.
- b) The Contractor shall not use any material, plant or real property placed in the Contractor's care, custody and control by the City, except for the purpose of performing the Work.

- c) The Contractor is not liable to the City for any loss or damage to material, plant or real property if that loss or damage results from and is directly attributable to reasonable wear and tear.

3.16 Equipment, Plant and Material Supplied by Contractor

- a) Unless otherwise specified in the Contract Documents, the Contractor shall furnish and assume full responsibility for all materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities and all other facilities and incidentals necessary for the performance, testing, finishing, start-up and completion of the Work. All materials, equipment, facilities, etc., furnished by the Contractor shall be maintained in a working, clean and sanitary manner.
- b) Materials provided shall be new unless otherwise specified in the Contract Documents. Products that are not specified shall be of a quality best suited to their purpose and use, as approved by the City Representative.
- c) All equipment, plant and material owned by the Contractor and to be incorporated in the Work, from the time of initial delivery to the Site, shall be deemed to be the property of the City; provided always that the vesting of such property shall not prejudice the right of the Contractor to the sole use of the said equipment, plant and material for the purpose of performing the Work nor shall it affect the Contractor's responsibility to operate and maintain the same in accordance with the Contract Documents. The City shall not at any time be liable for the loss of, damage to or risk of loss of any of the Contractor's equipment, plant or materials.

3.17 Workers' Compensation Act

- a) The Contractor shall comply with and ensure compliance at time of tender by all Subcontractors, with the requirements of the Workers' Compensation Act, R.S.N.W.T. 1988, c. W-6, as duplicated for Nunavut by s. 29 of the Nunavut Act. The Contractor and its Subcontractors shall maintain accounts in good standing with the Workers' Safety and Compensation Commission. The Contractor shall provide verification from the Workers' Compensation Board that the Contractor's account is in good standing prior to the release of holdbacks, at the end of the warranty period and as requested by the City Representative. The City may refuse to make a payment to the Contractor unless the Contractor furnishes evidence from the Workers' Compensation Board that the Contractor's account is in good standing.
- b) If the City receives a notice from the Workers' Compensation Board that the Contractor's accounts, or any Subcontractors' accounts are not in good standing, or if a demand for payment is received, the City may suspend payments due to the Contractor until a letter of clearance is obtained or the City has paid the amount on behalf of the Contractor.

- c) If the City is required to pay any amount to the Workers' Compensation Board on behalf of the Contractor, or any Subcontractor, the City may deduct the amount from any amount owing to the Contractor under this or any other contract, or may demand a reimbursement by the Contractor to the City for the amount paid by the City.
- d) If at any time the performance of the Work is stopped because the Contractor unreasonably fails or refuses to comply with a regulation or order issued pursuant to the Workers Compensation Act, then such failure or refusal shall be considered a default under this Contract, and this Contract may be terminated at the City's option, in accordance with GC 10.3.

3.18 Occupational Health and Safety

- a) The Contractor shall be solely responsible for construction safety at the Site as and to the extent required by the Safety Act, in effect at time of tender, and any other applicable construction safety legislation, regulations and codes, any City safety Policies, as amended from time to time, and by good construction practice.
- b) In any case where, pursuant to the provisions of the Safety Act, R.S.N.W.T. 1988, c. S-1, as duplicated for Nunavut by s. 29 of the Nunavut Act, the Director of Inspections or a Safety Officer orders the Contractor or any Subcontractor performing the Work, to cease work because of failure to install or adopt safety devices directed by the regulations made under the said Act, or required by it, or because the Director of Inspections or a Safety Officer is of the opinion that conditions of immediate danger exist that would likely result in injury to any person, the City may exercise its right to terminate this Contract or suspend the Work immediately, in accordance with GC 10, until the default or failure is corrected.

3.19 Cutting and Patching

- a) The Contractor shall do all cutting, fitting or patching of the Work that may be required to tie in properly with the work of other contractors shown in, or reasonably inferable from the Contract Documents.
- b) The Contractor shall not endanger any existing Work by cutting, patching or otherwise, and shall not cut or alter the work of any other contractor save with the consent of the City Representative and then only to the extent permitted by the City Representative.
- c) The Contractor shall not unreasonably withhold from the City or a separate contractor the Contractor's consent to cutting or otherwise altering the Work in accordance with any direction given by the City Representative.

3.20 Defective Work

- a) Defective work, whether the result of poor workmanship, use of defective products or damage through carelessness or other act or omission of the Contractor or any Subcontractor, and whether incorporated in the Work or not, which has been rejected by the City Representative as failing to conform to the Contract Documents, shall be removed promptly from the Work and replaced or re-executed by the Contractor in accordance with the Contract Documents, at the Contractor's expense.
- b) Where any part of the Work is damaged by such removals, replacements or re-execution, it shall be made good, promptly, at the Contractor's expense.
- c) Where the Contractor fails to correct defective or rejected work within the time limits specified by the City Representative, the City may correct defective or rejected Work and deduct the cost of same from the Contract Price, or may terminate this Contract in accordance with GC 10.3.
- d) In cases of emergency, the City may take whatever action it deems necessary to correct defective or rejected Work and deduct the cost of same from the Contract Price.
- e) If, in the opinion of the City Representative, it is not expedient to correct defective work or work not done in accordance with the Contract Documents, the City may deduct from the Contract Price the difference in value between the Work as done and that required by this Contract, as determined and certified by the City Representative.

3.21 Testing and Inspection

- a) Unless otherwise specified in the Contract Documents, the Contractor shall not rely on the City's testing program, for the Contractor's own quality control, but shall perform such testing as may be required to ensure that the Work complies in all respects with the Contract Documents.
- b) Critical equipment such as the boilers should be assembled or supervised during the installation by the manufacture experts and approve the installation.
- c) The Contractor shall promptly provide the City Representative with two copies of all certificates, inspection and testing reports required by the Contract Documents or ordered by the City Representative.
- d) The City Representative may conduct quality control testing regarding the acceptability of materials used in the Work and the Contractor shall furnish for the

City Representative's approval such samples as the City Representative may reasonably require, at the Contractor's expense.

- e) The City Representative may order retesting of questioned Work. If such retesting shows the Work to comply with the provisions of this Contract, the City shall pay the cost of retesting. If the retesting shows that through the fault of the Contractor the Work does not so comply, the Contractor shall pay all associated costs. Testing which is paid for by the City shall not be subject to direction or control by the Contractor.
- f) The City Representative shall at all times have access to the Work and the Contractor shall provide proper facilities for such access and for inspection. If any Work should be covered without the approval or consent of the City Representative, it must, if required by the City Representative, be uncovered for examination and subsequently recovered, both at the Contractor's expense.
- g) Any inspection of the Work by the City Representative or the failure of the City Representative to make any inspection, or:
 - i. the thoroughness or lack of thoroughness of any inspection made by the City Representative;
 - ii. the failure of the City Representative to observe defective workmanship or materials either by the Contractor or a Subcontractor;
 - iii. the failure to direct the attention of the Contractor or Subcontractor, or of any other person, to the inadequacy of the manner in which this Contract is being performed, or
 - iv. the inadequacy or insufficiency of any equipment or material used in the performance of or incorporated in the Work,

shall not relieve the Contractor from the responsibility for any failure to supply materials and complete the Work strictly in accordance with the Contract Documents.

3.22 Site Cleanliness

- a) The Contractor shall maintain the Site in a tidy condition and free from the accumulation of waste material and debris, to the satisfaction of the City Representative.
- b) Before the issuance of a certificate of Substantial Performance, the Contractor shall remove all the Contractor's tools and material not required for the remaining Work, and all waste material and other debris, and shall ensure that the Work and the Site are clean and suitable for occupancy or use by the City, unless otherwise directed by the City Representative.

- c) Before the issuance of a certificate of Final Completion, the Contractor shall remove from the Site all the Contractor's tools and material and any waste material and other debris, to the satisfaction of the City Representative.
- d) If the Contractor fails or refuses to remove all such tools, materials, equipment and waste within a reasonable time after achieving Final Completion then, on written notice from the City Representative to the Contractor specifying a reasonable time to remedy such failure or refusal, the City may do or cause to be done the removal and all reasonable resulting costs incurred by the City may be deducted from any amounts owing by the City to the Contractor.
- e) The Contractor's obligations described above do not extend to waste material and other debris caused by the City's agents or other contractors.

3.23 Claims Against and Obligations of the Contractor

- a) The Contractor shall pay out and discharge all its lawful obligations and shall satisfy all lawful claims against it arising out of the performance of the Work at least as often as this Contract requires the City to pay the Contractor.
- b) The Contractor shall, in accordance with the Contract Documents and whenever requested to do so by the City Representative, make a statutory declaration regarding the existence and condition of any obligations of and claims against the Contractor, any Subcontractors, or Suppliers. Upon request by the City, the Contractor shall provide letters from its Subcontractors and Suppliers regarding the status of any accounts with the Contractor and the details of any claims, if any.
- c) The City may, in its absolute discretion, and at any time prior to the final release of holdbacks, in order to discharge lawful obligations of and satisfy lawful claims against the Contractor, any Subcontractors or Suppliers arising out of the performance of the Work, pay any amount that is due and payable to the Contractor pursuant to this Contract, directly to the obligees of and the claimants against, the Contractor, Subcontractor or Supplier. When the parties involved in the claim are in agreement on the validity and amount of the claim, the City may treat this as a lawful claim.
- d) Where no agreement is reached between the parties as referred to above, the City may withhold payment, without any obligation to pay interest, until the validity and amount of the Claim is established by legal proceeding. The City may, in its absolute discretion, bring the matter before the Nunavut Court of Justice by way of Interpleader, and shall dispose of the funds withheld in accordance with the direction of the Court.

- e) A payment made pursuant to this provision is, to the extent of the payment, a discharge of the City's liability to the Contractor under this Contract and may be deducted from an amount payable to the Contractor under this Contract.

3.24 Patent Rights

The Contractor shall indemnify the City from and against all claims, liabilities and proceedings for or on account of infringement of any patent rights, design trademark or name or other protected rights in respect of the Contractor's equipment, materials or tools used for or in connection with, or for incorporation into the Work, and from and against all damages, costs, charges and expenses whatsoever relating thereto.

3.25 Royalties

Except where otherwise stated, the Contractor shall pay all tonnage and other royalties, rent and other payments or compensation, if any, for obtaining building materials required for the Work.

3.26 Records to be Kept by Contractor

- a) The Contractor shall maintain complete records of the Contractor's estimated and actual costs of the Work together with all tender calls, quotations, contracts, correspondence, invoices and receipts. In accordance with the terms of this Contract, these documents shall be available for audit and inspection by the City or by persons acting on behalf of the City when requested. The Contractor shall furnish any such person with any information it may require from time to time in connection with these records.
- b) Records maintained by the Contractor shall be kept intact for six years following the end of the warranty period or such other period of time as directed by the City Representative.
- c) The Contractor shall ensure that all of its Subcontractors comply with the above requirements.

3.27 Public Ceremonies and Signs

- a) The Contractor shall not permit any public ceremony in connection with the Work without the prior written consent of the City.
- b) The Contractor shall not erect or permit the erection of any sign or advertising on the Site without the prior written consent of the City.

3.28 Non-Compliance by Contractor

- a) If the Contractor fails to comply, within a reasonable time, with any decision or direction given by the City Representative, the City may employ such methods as the City deems advisable to do that which the Contractor failed to do.
- b) The Contractor shall pay the City the total of all costs, expenses and damages incurred or sustained by the City by reason of the Contractor's failure to comply with any decision or direction referred to above, including the cost of any method employed by the City. Where the amounts owing to the Contractor under this Contract are insufficient to cover such costs, the Contractor shall pay the balance to the City immediately.

4. ADMINISTRATION BY CITY REPRESENTATIVE

4.1 City Representative's Duties and Authority

- a) The City Representative will administer this Contract on behalf of the City as provided in the Contract Documents.
- b) The City Representative will be the City's representative until the Work has been completed in accordance with the Contract Documents.
- c) Except as expressly stated in the Contract Documents, the City Representative shall have no authority to relieve the Contractor of any of the Contractor's obligations under this Contract.
- d) The City Representative will be the initial interpreter of the requirements of the Contract Documents and judge of the acceptability of the Work performed and shall deal with Claims as they arise, in accordance with GC 9.1.
- e) If any error, inconsistency, or omission in the Contract Documents is discovered, the City Representative shall provide directions or clarifications to the Contractor.
- f) During the progress of the Work, the City Representative shall have authority to reject Work that, in the City Representative's opinion, does not conform with the requirements of the Contract Documents, or to issue written additional instructions regarding the Work which may, in the opinion of the City Representative, be necessary to supplement or clarify the Contract Documents. Such additional instructions shall be consistent with the intent of the Contract Documents, shall not entitle the Contractor to an Adjustment and shall be binding upon and be carried out promptly by the Contractor.
- g) Wherever, under this Contract, the City Representative is required to exercise discretion by:
 - i. rendering a decision, opinion or consent.

- ii. expressing satisfaction or approval.
- iii. determining value; or
- iv. otherwise taking action which may affect the rights and obligations of the City or the Contractor,
the City Representative shall do so impartially, consistent with the terms of this Contract and having regard to all of the circumstances. Any such decision, opinion, consent, expression of satisfaction or approval, determination of value or action, may be opened up, reviewed or revised as provided in GC 9.

4.2 Observing the Work

The City Representative will visit the Site at intervals appropriate to the stage of construction to become generally familiar with the progress and quality of the completed Work and to determine in general if the Work is being performed in a manner indicating that the Work, when completed, will be in accordance with the Contract Documents. However, the City Representative will not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the Work. On the basis of such on-site observations, the City Representative will keep the City informed of the progress of the Work and will endeavor to guard the City against defects and deficiencies in the Work.

4.3 City Representative's Decision

Except as provided in GC 4.1(g), neither the City Representative's authority or responsibilities under GC 4 or under any other provision of the Contract Documents nor any decision made by the City Representative in good faith either to exercise or not exercise such authority or responsibility, shall create, impose or give rise to any duty or responsibility owed by the City Representative to the Contractor, any Subcontractor, Supplier, or to any surety for or employee or agent of any of them.

5. PAYMENT AND COMPLETION

5.1 Progress Payments

- a) At the end of each calendar month, or such other period as is agreed to between the City Representative and the Contractor, the Contractor shall deliver to the City Representative a written progress claim that describes the Work that has been completed and any material that was delivered to the Site but not yet incorporated into the Work since the last progress claim. The Contractor's progress claim shall be submitted on the last day of the month, for the month which progress is being claimed. If the last day coincides on a weekend or holiday, it will be issued on the following business day.

- b) The City Representative shall, within fourteen (14) business days of receipt of the Contractor's approved progress claim, review the claim and prepare a certificate for payment which may take the form of an endorsement on the progress claim. If the City Representative amends the progress claim, he will promptly notify the Contractor in writing, giving reasons for the amendment.
- c) Where the Contractor does not submit a progress claim or where the City Representative does not endorse the Contractor's progress claim, the City Representative may calculate the progress payment and prepare a certificate for payment by the City. Where unit prices apply, payment will be calculated on the basis of the unit prices specified in the Contract Documents and the units of Work completed as determined by the City Representative. Where a lump sum price applies, payment will be calculated on the basis of the City Representative's estimate of the percentage of the Work completed.
- d) The progress certificate will show, to the end of the period covered by the progress claim, the estimated value of all labour and materials incorporated into the Work, GST monies paid, all materials stored at the Site and all Change Orders certified by the City Representative. The certificate shall also show the aggregate of previous payments and the amounts withheld. The gross amount shown on such certificate, less the aggregate of all payments to date and sums withheld, shall become due and be payable by the City to the Contractor within thirty (30) calendar days following receipt by the City of the progress certificate.
- e) The estimates referred to above shall not bind the City or the City Representative in any manner in the preparation of the final estimate of the Work done, but shall be held to be approximate only and shall in no case be taken as an acceptance of the Work or as a release of the Contractor from the Contractor's responsibilities under this Contract.
- f) If for any reason the City disputes the net amount shown for payment on a progress certificate the City shall, within the time specified in this GC, pay to the Contractor any amount not disputed and also deliver to the Contractor and the City Representative written reasons for any deductions.

5.2 Contract Holdbacks

- a) The City will retain Contract holdbacks in accordance with the following:
 - i. ten percent from each progress payment made prior to the issuance of the first Holdback Payment Certificate by the City Representative (the "Lien Holdback"), and

- ii. five percent Owners Offset from any payments made to the Contractor following the issuance of the first Holdback Payment Certificate, other than from holdback payments.

5.3 Substantial Performance

- a) When the Contractor considers the Work ready to be utilized for its intended purpose, the Contractor may apply in writing to the City Representative to issue a Certificate of Substantial Performance. The Contractor shall prepare and submit with its application a comprehensive list of deficiencies and/or incomplete items to be completed or corrected, a statutory declaration as per GC 3.23(b) and particulars of, or a waiver of, all outstanding claims against the City, arising out of the Work. The Contractor shall proceed promptly to complete and correct the items on the list. Failure to include an item on this list does not alter the Contractor's responsibility to complete the Work in accordance with the Contract Documents.
- b) Following the receipt of an application from the Contractor for a certificate of Substantial Performance, the City Representative shall, with reasonable promptness, make an inspection and assessment of the Work. Within seven (7) calendar days of the inspection, the City Representative shall notify the Contractor of his approval, or reasons for, disapproval of the application. If the City Representative determines that the Work is substantially completed, he shall issue a certificate of Substantial Performance to the City and the Contractor. A list of items to be completed or rectified shall accompany the certificate. If the City Representative does not consider the Work to be substantially completed, he shall notify the Contractor in writing of the reasons why and list the items to be completed or rectified, of which the City Representative is aware.
- c) The City may deduct from the Contract Price, or any amounts due to the Contractor, the costs associated with the City Representative being called upon to perform more than one inspection for the purpose of determining Substantial Performance, when in the opinion of the City Representative, the Work was clearly not yet substantially complete.
- d) The certificate of Substantial Performance shall establish the date of Substantial Performance and shall fix the time within which the Contractor shall complete or correct all items on the list accompanying the certificate. Warranties required by the Contract Documents shall commence on the date of Substantial Performance, unless otherwise provided, in the certificate of Substantial Performance.
- e) Similarly, in accordance with the procedure set out above, the City Representative may in its absolute discretion, issue a Certificate of Substantial Performance in respect of any part of the Work which has been both completed to the satisfaction of the City Representative and which the City has elected to occupy or use prior to completion.

- f) In addition to other holdbacks as provided by the Contract Documents, when considering Substantial Performance, the City may hold back from payments otherwise due to the Contractor the amount that is two times of the amount of a reasonable estimate, as determined by the City Representative, on account of deficient or defective Work already paid for. This holdback may be held, without interest, until such deficiency or defect is remedied. The items of defect or deficiency and the amounts of related holdback shall be listed separately on the payment certificate.

5.4 Final Completion

- a) Following Final Completion of the Work, including any testing, the Contractor shall provide the City Representative with the following:
- i. a statutory declaration as referred to in GC 3.23(b) that:
 - A. the Work has been completed in accordance with the Contract Documents; and
 - B. no claims exist or alternatively setting out the particulars of any claims relating to personal injury or death or property loss or damage arising out of the Work, and any alleged infringement by the Contractor of a patent or other property right in performing this Contract; and
 - ii. particulars of, or a waiver of, all outstanding claims against the City, arising out of the Work.
- b) Following receipt of the documents referred to in GC 5.4(a), the City Representative shall, with reasonable promptness, conduct an inspection and assessment of the Work to verify that the Work has been completed in accordance with the Contract Documents. Within fourteen (14) calendar days of receipt of the above documents, the City Representative shall either issue a certificate of Final Completion to the City and the Contractor or a list of items to be completed or rectified, of which the City Representative is aware. The City may deduct from monies owed to the Contractor the costs associated with the City Representative being called upon to perform more than one inspection.
- c) Receipt by the Contractor of the certificate of Final Completion shall entitle the Contractor to payment in accordance with GC 5.5.

5.5 Final Progress Payment

- a) The final progress payment certificate will be prepared following the issuance of the certificate of Final Completion. The final progress payment certificate will show the total amount payable to the Contractor, less any amounts retained.
- b) The final progress payment amount shall be paid by the City to the Contractor within thirty (30) calendar days following receipt by the City of the final progress payment certificate.

5.6 Holdback Release

- a) Forty-five (45) calendar days following the date of the issuance of the certificate of Substantial Performance by the City Representative, the Contractor may apply to the City for release of fifty percent of the Lien Holdback. The Contractor shall with such application provide the City Representative with a statutory declaration as referred to in GC 3.23(b), with the content referred to in GC 5.4(a)(i), and the particulars of a waiver of, all outstanding claims against the City, arising out of the Work. The City Representative shall, within fourteen (14) calendar days' receipt of the Contractor's application, issue a Holdback Payment Certificate or a list of items to be rectified prior to payment.
- b) Following the release of fifty percent of the Lien Holdback in accordance with GC 5.6(a), the Contractor may apply in writing for release of the remainder of all Contract lien holdback funds retained by the City, provided an irrevocable letter of credit, in a form acceptable to the City and from a bank and branch acceptable to the City, for the same amount is presented for the City's consideration. The City may, in its absolute discretion, accept or reject the Contractor's irrevocable letter of credit in place of the remainder of all Contract holdback funds.
- c) The irrevocable letter of credit referred to in this provision must be for the same amount as the remainder of all Contract lien holdback funds and must remain in place until expiry of the warranty period referred to in GC 11.4. Should the Contractor's irrevocable letter of credit be scheduled to expire prior to the end of such warranty period, the City may, at any time within the fourteen (14) calendar days prior to the expiry date, call upon and draw down the irrevocable letter of credit, unless the Contractor presents a renewal thereof with an expiry date beyond the warranty period.
- d) One year following the date of the issuance of the Certificate of Substantial Performance by the City Representative, the Contractor may apply to the City for release of the remainder of all Contract holdbacks or the return of irrevocable letters of credit, if any. The City Representative shall, within fourteen (14) calendar days of receipt of the Contractor's application, issue a Holdback Payment Certificate or a list of items to be rectified prior to payment.

- e) The City may withhold from monies owing to the Contractor, an amount equal to the City Representative's estimate of the value of all outstanding deficiencies.
- f) Subject to any applicable lien legislation requirements, holdback payments shall become payable or irrevocable letters of credit shall be returned by the City to the Contractor, within thirty (30) calendar days following receipt by the City of the Holdback Payment Certificate.

5.7 Delay in Making Payment

- a) Delay by the City in making payments when they are due pursuant to this provision shall not be a breach of this Contract by the City.
- b) Unless otherwise stated in this Contract, when the City delays in making a payment that is due pursuant to this clause, the Contractor shall be entitled to receive simple interest on the amount that is overdue, at the prime lending rate of the main banker of the City.

5.8 Right of Set-off

Without limiting any right of set-off or deduction given or implied by law or elsewhere in the Contract Documents, the City may set-off any amount payable to the City by this Contractor against any amount payable to the Contractor under this Contract.

6. TIME AND DELAYS

6.1 Time of the Essence

Time is of the essence of this Contract, including without limitation the dates and time limits stated in the Contract Documents. By executing this Contract, the Contractor confirms that this Contract Time is a reasonable period for performing the Work.

6.2 Delays

- a) Where a delay occurs in the progress of the Work and:
 - i. the delay is attributable to or within the control of the Contractor or its Subcontractors or was reasonably foreseeable by them at the time this Contract was entered into, the Completion Date will not be adjusted. The Contractor will be liable to the City for all costs and expenses incurred by the City, as well as for any losses resulting from the City's inability to utilize the Work for its intended purpose resulting from the delay, and the City may deduct such costs from payments owing to the Contractor under this Contract;
 - ii. the delay is due to an act or neglect by the City, the City Representative, or other contractor, or of an employee of any of them, then the Contractor may make a Claim therefor, in accordance with GC 9.1, or

- iii. the cause for the delay does not fall within the circumstances described in (i) or (ii) above, the Contractor may make a Claim for an Adjustment in the Contract Time (but not for an Adjustments of the Contract Price), in accordance with GC 9.1. This shall be the Contractor's sole and exclusive remedy for such delays.
- b) In no event will adverse weather be considered to be a cause of delay beyond the Contractor's or its Subcontractors' control or not reasonably foreseeable by them at the time this Contract was entered into.

7. ASSESSMENTS AND DAMAGES FOR LATE COMPLETION

7.1 Late Completion

- a) For the purposes of this General Condition, "period of delay" means the number of days commencing on the Completion Date fixed by the Articles of Agreement and ending on the day immediately preceding the day on which the certificate of Substantial Performance is issued but does not include any day within a period of extension granted pursuant to GC 9.1 and 6.2, or any other day on which, in the opinion of the City Representative, completion of the Work was delayed for reasons beyond the control of the Contractor.

8. CHANGE ORDERS

8.1 Changes in the Work

- a) Without invalidating this Contract, the City may, through the City Representative, direct in writing the Contractor to make changes in the Work by adding to, deleting from or revising the Work.
- b) When no Change Order has been issued by the City Representative, and the Contractor claims that any of the Work being performed or proposed constitutes a change in the Work entitling the Contractor to an Adjustment, the Contractor may make a Claim therefore in accordance with GC 9.1.
- c) Changes in the Work directed by the City shall not be initiated, and shall not be carried out by the Contractor, without the prior written authorization of the City through the City Representative.
- d) Upon receipt of a Change Order from the City Representative, the Contractor shall promptly proceed with the Work involved under the applicable provisions of the Contract Documents, except as specifically provided in the Change Order.

- e) The City Representative may in writing direct the Contractor to proceed with the Change notwithstanding that a Change Order has not been prepared or agreed at the time of such direction, and upon receipt of such direction the Contractor shall promptly proceed with the Work as aforesaid. If the parties fail to agree upon the price for such Change, the price therefor shall be as set out in GC 8.2(f) or (i), as applicable.
- f) If notice of any change in the Work is required by the provisions of any bond to be given to a surety, the Contractor will be responsible for giving such notice, and the amount of each applicable bond shall be adjusted accordingly. For the purposes of this provision, the Contractor will be considered to be the surety's agent.

8.2 Valuation of Changes

- a) When a change results in a decrease in the Work, the Contract Price shall be decreased by an amount to be determined by the City Representative, with such decrease valued in the same manner as if it were an increase.
- b) When a change causes an increase in the Work, the Contract Price shall be increased in accordance with this provision.
- c) If this Contract specifies unit prices for changes to the Work, and the City Representative concurs in their use on a particular change or portion thereof, then the Contractor shall be paid for such change or portion, a sum determined by applying the unit prices to the actual quantum, as measured by the City Representative, determined after completion of the Change.
- d) Where this Contract specifies force account rates for labour, equipment and materials, and the City Representative concurs in their use on a particular change or portion thereof, then the Contractor shall be paid for such change or portion, a sum determined by applying the force account rates to the number of hours of labour and equipment expended and quantities of materials utilized. The Contractor shall present records of the work done to the City Representative for approval, at the times and in the manner specified by the City Representative.
- e) If there are changes, or portions of changes, for which unit prices or force account rates are not applicable or specified, then the Contractor shall propose to the City Representative a fixed price for such changes or portions. Upon agreement by the City on the amount thereof, the proposed fixed price shall become the sum the Contractor shall be paid for such change or portion.
- f) If the Contractor and the City are unable to agree on a fixed price, then the Contractor shall be reimbursed its costs for performing the changes as directed by the City Representative, consistent with the following:

- i. wages, salaries and travelling expenses of the Contractor's employees while actually engaged on the Work, excluding any and all expenses of head office personnel;
 - ii. workers' compensation assessments, unemployment insurance premiums, pension plan payments and paid holidays;
 - iii. rental cost of machinery and equipment that is used in the performance of the Work, or an allowance for depreciation if owned by the Contractor;
 - iv. operation and maintenance costs for machinery and equipment used in the performance of the Work, other than costs of repairs arising out of defects existing before it was brought on to the Site;
 - v. cost of materials necessary for and incorporated into the Work or consumed in the performance of the Work;
 - vi. cost of premiums for all bonds and insurance;
 - vii. other expenses incurred by the Contractor as approved in advance by the City Representative for the proper performance of the Work;
 - viii. Subcontractor costs calculated in accordance with GC 8.2(f) (i to vii) above; and
 - ix. an allowance for profit and all other expenditures or costs, including overhead, general administration costs, financing and interest charges, and every other cost, charge and expense, in an aggregate amount that is equal to twenty percent of the expenses referred to in GC 8.2(f) (i to vii), and equal to ten percent of the expenses referred to in GC 8.2(f) (viii) above.
- g) Whenever the cost of any Work is to be determined in accordance with GC 8.2(f), the Contractor will establish and maintain records in accordance with GC 3.26.
- h) Pending final determination of cost, amounts not in dispute shall be included in progress payments.
- i) If the method of valuation of any increase cannot be promptly agreed upon, the City Representative shall determine the method of valuation and issue a written authorization for the change setting out the method of valuation.

8.3 Contingency Allowance

- a) The Contract Price includes the contingency allowance, if any, stated in the Contract Documents.

- b) Expenditures under the contingency allowance shall be authorized in the same manner as for a Change Order in accordance with GC 8, and the value shall be determined in accordance with GC 8.2.
- c) The unexpended portion of the contingency allowance shall be credited to, and paid to, the City as a condition of achieving Substantial Performance, unless otherwise agreed to by the City.

9. DISPUTE RESOLUTION

9.1 City Representative's Decision

- a) Where a Claim arises out of, or in connection with this Contract or the performance of the Work, whether during the performance of the Work or after its completion and whether before or after termination of this Contract, the Claim shall, in the first place, be referred in writing to the City Representative in accordance with this provision.
- b) A written notice stating the general nature of the Claim shall be delivered by the party making the Claim to the other party and to the City Representative promptly, and in no event later than seven (7) calendar days after the occurrence of the event giving rise to the Claim. Any Work for which a Claim has been made, shall be kept readily accessible and shall not be covered up without the express permission of the City Representative.
- c) Notice of the extent of the Claim with supporting data shall be delivered within fourteen (14) calendar days after such occurrence. The Contractor shall keep contemporaneous records as may reasonably be necessary to support the Contractor's Claim, which may be inspected by the City Representative, as he deems necessary.
- d) The City Representative shall review the information submitted, consult with the parties and make reasonable efforts to obtain agreement between the City and the Contractor regarding the Claim. The parties agree that, both during and after the performance of the Work, each of them shall use their best efforts to resolve any disputes arising between them by amicable negotiations, and shall provide frank, candid and timely disclosure of all relevant facts, information and documents to facilitate those negotiations. The City Representative may request the parties to refer the matter to more senior levels of management within their organizations, in an effort to resolve the Claim.
- e) Where the City and the Contractor reach an agreement on the Claim, the City Representative will, where appropriate, prepare a Change Order for the City's

approval, which shall be sufficient to effect a change in this Contract, in accordance with the terms of the Change Order and the Contract Documents.

- f) If the City and the Contractor cannot reach an agreement regarding the Claim, the City Representative shall decide the matter and notify the parties in writing of his decision, within fourteen (14) calendar days of the last submission, and in no event later than thirty (30) calendar days following the date of the occurrence giving rise to the Claim. Valuation of Adjustments in the Contract Price shall be determined by the City Representative in accordance with GC 8.2.
- g) Unless this Contract has already been terminated, the Contractor shall, in every case, proceed with the Work with all due diligence and the City and the Contractor shall give effect forthwith to every such decision of the City Representative unless and until the same shall be revised, as hereinafter provided.
- h) Where either party disputes the decision of the City Representative or where the City Representative fails to notify the parties of his decision in accordance with GC 9.1(f) then either party may, within fourteen (14) calendar days, notify the other party of its intention to refer the matter to the Referee in accordance with GC 9.2 or Arbitrator in accordance with GC 9.3, as application. No referral may be made unless such notice is given. Notices shall be copied to the City Representative for information.
- i) If the City Representative has given notice of his decision as to a matter in dispute to the parties and no notice of intention to refer the matter to the Referee has been given by either the City or the Contractor within thirty (30) calendar days, the City Representative's decision shall become final and binding upon the parties.
- j) No act by the claimant shall be construed as a renunciation or waiver of any of its rights or recourses provided the claimant has given the required notices and carried out the instructions specified. The presentation of a Claim shall not be grounds for delay or interruption of the Work.

9.2 Appointment of Referee

- a) If the City and the Contractor agree to appoint a Referee, the City and the Contractor shall name, within thirty (30) calendar days of the parties signing this Contract, a Referee who may be called upon during the performance of, or after the completion of the Work, to settle any Claims or disputes arising under this Contract. Where the Referee appointed in accordance with this provision refuses to act, is incapable of acting or dies, the parties shall name a new Referee at the earliest opportunity. Should the parties be unable to agree on a Referee within the time specified, the City Representative whose decision shall be final, shall name a Referee.

- b) Where either party has disputed a decision of the City Representative in accordance with GC 9.1(h), the Referee shall review the decision of the City Representative and may, if he deems it appropriate, require the parties to supply him with further information or documentation, giving each party an opportunity to respond. The Referee may inspect the Work after giving reasonable notice to each party of the time he intends to do so.
- c) Not later than thirty (30) calendar days after receipt of the last documentary submission, where the matter has not been resolved in accordance with GC 9.2(b), the Referee shall issue his written decision with reasons to the parties.
- d) The costs of retaining the Referee shall be shared equally between the City and the Contractor, unless the Referee directs otherwise. The City may deduct such costs assessed against the Contractor by the Referee, from any amount due and payable by the City to the Contractor under this Contract.

9.3 Appointment of Arbitrator

- a) If the parties agree to appoint a Referee, then within fourteen (14) calendar days after the Referee has rendered his decision, either party may, by written notice to the other party and to the City Representative for information, refer the decision of the Referee to arbitration pursuant to this GC 9.3. If the parties have not agreed to appoint a Referee, then within the fourteen-day period referred to in GC 9.1(h), either party may refer to decision of the City Representative to arbitration pursuant to this 9.3. Upon any such referral, the parties shall appoint a single Arbitrator, for arbitration in accordance with the Arbitration Act, R.S.N.W.T. 1988, c. A-5, as duplicated for Nunavut by s. 29 of the Nunavut Act, subject to the following provisions:
 - i. the Arbitrator shall have the authority to call upon the Referee to give evidence during the arbitration proceedings, including all documentation prepared by the Referee or reviewed by him;
 - ii. the decision of the Arbitrator shall be final and binding upon the parties who covenant that their disputes shall be so decided by arbitration alone and not by recourse to any court by way of action at law;
 - iii. arbitration proceedings may be commenced prior to or after completion of the Work, provided that the obligations of the City, the City Representative and the Contractor shall not be altered by reason of the arbitration being conducted during the progress of the Work;
 - iv. before the arbitration proceeds on the substantive issues, a budget for the proceedings shall be established by the Arbitrator and each party shall deposit, as security for costs, a sum equal to half of such budget with the Arbitrator,

who shall thereupon deposit such funds in an interest bearing trust account with a chartered bank. Subject to the award and payment of costs as hereinafter provided, the balance of the security deposits and interests shall be properly returned to the respective parties; and

- v. the cost of arbitration may be awarded against the parties hereto or against any one of them as the Arbitrator may decide.
- b) If a Claim involves the Work of a Subcontractor, either the City or the Contractor may join such Subcontractor as a party to the arbitration between the City and the Contractor. The Contractor shall include in all its subcontracts specific provision whereby its Subcontractors consent to being joined in an arbitration between the City and the Contractor involving the Work of such Subcontractors. Nothing in this provision nor in the provision of such subcontracts consenting to joinder shall create any claim, right or cause of action in favour of the Subcontractors as against the City or the City Representative, that does not otherwise exist.
- c) If no notice is received within the time limits set out or referred to in GC 9.3(a), the decision of the Referee shall be final and binding on the parties.
- d) The Contractor agrees that it shall join other arbitration proceedings with respect to the Project, as requested in writing by the City.

9.4 Adherence to Provisions

- a) The provisions, including without limitation, procedure and sequences, outlined in GC 9.1 to 9.3 for the resolution of disputes shall be strictly adhered to by both parties.

10. WITHDRAWAL, SUSPENSION AND TERMINATION

10.1 Withdrawal of the Work

- a) After giving the Contractor seven (7) calendar days written notice within which the Contractor may remedy any delay or default specified, the City may, through the City Representative, withdraw the Work from the Contractor where the Contractor is not diligently performing the Work to the satisfaction of the City Representative or has not completed the Work within the time specified in this Contract.
- b) On withdrawal of the Work, the City may:
 - i. take possession of all plant, equipment and materials on the Site and ordered by the Contractor for the Work but not yet delivered to the Site; and
 - ii. complete the Work withdrawn from the Contractor.

- c) Withdrawal of the Work by the City does not terminate this Contract and does not relieve the Contractor of its obligation to complete the remainder of the Work.
- d) The Contract Price will be reduced by the value of the Work withdrawn, as determined by the City Representative. The Contractor shall be liable to the City for all extra costs incurred by the City to complete the Work withdrawn from the Contractor, including all amounts set out in GC 10.3(d) notwithstanding that the Contractor may not be in default hereunder, and the City may deduct such costs from payments owing to the Contractor under this Contract.

10.2 Suspension of the Work

- a) The City may through the City Representative suspend the progress of the Work at any time by giving the Contractor a written notice, which shall include the reason for the suspension.
- b) Where such a suspension results in a delay in the progress of the Work, the rights of the parties shall be determined in accordance with GC 6.2(a)(i), (ii) or (iii) as applicable, and shall be based on the reason for the suspension.
- c) During the period of suspension, the Contractor shall protect, preserve and maintain the Work in a manner satisfactory to the City and shall not remove any part of the plant, equipment and materials from the Site without the prior written consent of the City.
- d) Following the suspension, the Construction Schedule shall be revised by the Contractor, for approval by the City, and the Work shall be completed as provided in the revised schedule.
- e) Where the Work or any part thereof is suspended on the written instructions of the City and if permission to resume Work is not given by the City within a period of thirty (30) calendar days from the date of suspension, the Contractor may request permission from the City to proceed with the Work. If the City does not grant permission within fourteen (14) calendar days' receipt of the Contractor's written request, the Contractor may elect to treat the suspension, where it affects only part of the Work, as an omission of such Work by giving a further notice to the City to that effect or, where it affects the whole of the Work, treat this Contract as having been cancelled by the City, in accordance with GC 10.4.

10.3 Termination by City

- a) Without limitation, any or all of the following actions by or circumstances relating to the Contractor shall constitute default on the part of the Contractor:

- i. committing or threatening to commit any act of insolvency or bankruptcy, voluntary or otherwise;
 - ii. having a receiver appointed on account of insolvency or in respect of any property;
 - iii. making a general assignment for the benefit of creditors.
 - iv. failing to comply with or persistently disregarding statutes, regulations, bylaws or directives of competent authorities relating to the Work.
 - v. failing to comply with any requests, instruction or direction of the City Representative;
 - vi. failing to pay accounts relating to the Work as they come due.
 - vii. failing to prosecute the Work with skill and diligence.
 - viii. assigning or subletting this Contract or any portion thereof without the required consent from the City.
 - ix. failing or refusing to correct defective or deficient Work; and
 - x. being otherwise in default in carrying out any of its obligations under this Contract, whether such default is similar or dissimilar in nature to the causes listed previously.
- b) The Contractor shall immediately advise the City in writing of any default listed in GC 10.3(a)
- c) If the Contractor is in default under this Contract, the City shall be entitled to any or all of the following:
- i. take possession of all Work in progress, materials and construction equipment at the Site, at no additional charge for the retention or use of the construction equipment;
 - ii. eject and exclude from the Site all personnel of the Contractor and any Subcontractor;
 - iii. terminate the City's utilization of the Contractor to perform the Work;
 - iv. finish the Work by whatever means the City may deem appropriate under the circumstances; and

- v. withhold any further payments to the Contractor until the Contractor's liability to the City is ascertained.
- d) The Contractor shall be liable to the City for:
 - i. the extra expense of finishing the Work, including compensation to the City for additional engineering, managerial and administrative services;
 - ii. the cost of correcting deficiencies in that portion of the Work performed by the Contractor; and
 - iii. all other loss, damage and expense occasioned to the City by reason of the Contractor's default,and the City may deduct such amounts from payments owing to the Contractor under this Contract.
- e) Any action by the City under this GC 10.3 shall be without prejudice to the City's other rights or remedies under any security held by the City for performance of this Contract by the Contractor.

10.4 Contract Cancellation

- a) The City shall have the right which may be exercised from time to time, with or without cause, and on fourteen (14) calendar days' written notice to the Contractor, to cancel any uncompleted or unperformed portion of the Work. In the event of such cancellation, the Contractor shall be entitled to the following:
 - i. reimbursement at this Contract rate for all items completed and delivered;
 - ii. reimbursement for the costs to the Contractor for Work in progress and expenses incurred in the course of the Work, plus a reasonable return on such costs and expenses; and
 - iii. reimbursement for costs and expenses directly caused by the cancellation.
- b) Title to all Work for which reimbursement is made shall vest in the City.
- c) The City shall not be liable to the Contractor for indirect loss, consequential loss, loss of business opportunity or loss of anticipated profit on the cancelled portion or portions of the Work.
- d) This section shall not apply to situations in which the City is entitled to terminate this Contract by reason of default by the Contractor.

10.5 Termination by Contractor

- a) If the City should be adjudged bankrupt, or makes a general assignment for the benefit of creditors because of the City's insolvency, or if a receiver is appointed because of the City's insolvency, the Contractor may, without prejudice to any other right or remedy the Contractor may have, by giving the City or receiver or trustee in bankruptcy notice in writing, terminate this Contract.
- b) If the Work should be stopped or otherwise delayed for a period of thirty (30) calendar days or more under an order of a court or other public authority and providing that such order was not issued as the result of an act or fault of the Contractor or of anyone directly or indirectly employed or engaged by the Contractor, the Contractor may, without prejudice to any other right or remedy the Contractor may have, by giving the City notice in writing, terminate this Contract.
- c) If the Contractor terminates this Contract under the conditions set out above, the Contractor shall be entitled to be paid for all work performed including reasonable profit, for loss sustained upon products and construction machinery and equipment, and such other damages as the Contractor may have sustained as a result of the termination of this Contract.

11. BONDS AND WARRANTY

11.1 Obligations to Provide Contract Security

- a) The Contractor shall promptly provide to the City the surety bonds called for in the Contract Documents, not later than ten (10) business days following receipt by the Contractor of the letter of acceptance.
- b) Such bonds shall be issued by a duly licensed surety company authorized to transact the business of suretyship in Nunavut and shall be maintained in good standing until the fulfillment of this Contract.
- c) Prior to or at the time of making a Claim under such bonds, the City shall send written notification to the Contractor, stating the nature of the default for which a Claim is being made.

11.2 Prescription of Acceptable Contract Security

- a) The Contractor shall deliver to the City:
 - i. a performance bond and a labor and material payment bond each in an amount that is equal to and not less than fifty percent of the Contract Price referred to in the Articles of Agreement; or

- ii. a security deposit in an amount that is equal to ten percent of the Contract Price referred to in the Articles of Agreement.
- b) The performance bond and the labor and material payment bond referred to in GC 11.2(a)(i) shall be in a form as approved by the Federal Treasury Board (Federal Contracts).
- c) A security deposit referred to in GC 11.2(a)(ii) shall be in a form of:
 - i. an irrevocable letter of credit in a form acceptable to the City and from a bank and branch acceptable to the City; or
 - ii. a certified cheque or bank draft from a bank acceptable to the City and made payable to the City.
- d) Should the Contractor's irrevocable letter of credit be scheduled to expire prior to the Completion Date set out in the Articles of Agreement, the City may, at any time within the fourteen (14) calendar days prior to the expiry date, call upon and draw down the irrevocable letter of credit, unless the Contractor presents a renewal thereof with an expiry date beyond the anticipated date for Final Completion, as determined by the City Representative.

11.3 Return of Security Deposit

- a) Following issuance of the certificate of Substantial Performance, the City may, in its absolute discretion, release all or part of the security deposit referred to herein.
- b) Following issuance of the certificate of Final Completion, the Contractor shall, subject to the terms of this Contract, be entitled to the remainder of any security deposit.
- c) Interest shall not be paid on security deposits.

11.4 Warranty

- a) The Contractor warrants and guarantees that the Work is and shall be free from all defects or deficiencies in, or arising from, materials or workmanship in any part of the Work for the period of one year from the date of Substantial Performance of the Work, as certified by the City Representative, or such longer period as may be specified in the Contract Documents for certain products or Work.
- b) The Contractor shall promptly correct, at its own expense, defects or deficiencies in the Work which appear prior to and during the warranty described in GC 11.4(a). The Contractor shall correct and pay for all damages resulting from corrections made under this provision.

- c) Work performed to correct defects or deficiencies shall be warranted and guaranteed to be free from defects or deficiencies, on the same basis as the original Work, for a period of one year from the day said work was completed.
- d) The City or the City Representative shall promptly give the Contractor written notice of observed defects and deficiencies.
- e) If any defects or deficiencies in the Work appear at any time prior to the end of the warranty period, the City Representative may instruct the Contractor to search for the cause thereof. If such defect or deficiency is one for which the Contractor is liable, the cost of the Work carried out in searching shall be at the Contractor's expense, and it shall in such case remedy such defect or deficiency at its own cost; otherwise it shall be at the City's expense.
- f) In an emergency or to prevent an emergency or if the Contractor neglects for any reason to correct defects or deficiencies within a reasonable time, the City may perform the Work or direct another party, on the City's behalf, to do the Work. All costs associated with the correction of such defects or deficiencies shall be paid for by the Contractor and the City may deduct such costs from amounts owing to the Contractor.

12. INDEMNIFICATION AND INSURANCE

12.1 Indemnification by Contractor

- a) The Contractor shall defend, indemnify and save harmless the City and the City Representative, their agents and employees from and against all claims, demands, losses, costs, damages, actions, suits, or proceedings arising out of or attributable to the Contractor's performance of the Work, or by reason of any matter or thing done, permitted or omitted to be done, by the Contractor, its Subcontractors, its Suppliers or their agents or employees, whether occasioned by negligence or otherwise. Such indemnity shall survive completion or termination of this Contract.
- b) Nothing contained in the Contract Documents or any approval, express or implied, of the City Representative or City shall relieve the Contractor of any liability for latent defects or any liability which may be imposed by law.

12.2 Indemnification by City

The City shall, subject to any law that affects the City's rights, powers, privileges or obligations, indemnify and save the Contractor harmless from and against all claims, demands, losses, costs, damages, actions, suits or proceedings arising out of his activities under this Contract that are directly attributable to:

- a) lack of or a defect in the City's title to the Site whether real or alleged; or
- b) an infringement or an alleged infringement by the Contractor of any patent of invention or any other kind of intellectual property occurring while the Contractor was performing any act for the purposes of this Contract employing a model, plan or design or anything related to the Work that was supplied by the City to the Contractor.

12.3 Policies of Insurance

Without restricting the generality of GC 12.1, the Contractor shall provide and maintain the insurance coverages listed in this provision. Unless otherwise stipulated, the duration of each insurance policy shall be from the date of commencement of the Work until the date of issuance of the certificate of Final Completion. Prior to commencement of the Work, the Contractor shall provide the City with confirmation of coverage in the format attached as Appendix A to these General Conditions, and, if required, a certified true copy of the policies certified by an authorized representative of the Insurer. The Contractor shall ensure that any Subcontractors comply with the insurance requirements outlined in this GC 12. The insurance coverages required are as follows:

a) General Liability Insurance

Contractor's comprehensive general or commercial general liability insurance shall have limits of not less than five million dollars (\$5,000,000) per occurrence with a property damage deductible not exceeding two thousand five hundred dollars (\$2,500). The insurance provided shall be no less broad than the insurance provided by IBC Form 2100 or its equivalent replacement and shall include a standard non-owned automobile policy including a blanket contractual liability endorsement. To achieve the required limit, umbrella or excess liability insurance may be used. All liability coverage shall be maintained for completed operations hazards from the date of Final Completion of the Work, as set out in the certificate of Final Completion, on an ongoing basis for a period of not less than six years from the date of such certificate. The City shall be added as an additional insured with respect to liability arising out of the operations of the named insured. The policy shall be endorsed to provide the City with not less than thirty (30) calendar days' written notice in advance of any cancellation, change or amendment restricting coverage.

b) Automobile Liability Insurance

Automobile liability insurance in respect of licensed vehicles shall have limits of not less than five million dollars (\$5,000,000) inclusive per occurrence for bodily injury, death, and damage to property and covering all licensed vehicles owned or leased by the Contractor, endorsed to provide the City with not less than fifteen (15) calendar days' written notice in advance of any cancellation, change or amendment restricting coverage.

c) Property and Boiler and Machinery Insurance

- i. “All risks” property insurance shall be in the joint names of the Contractor, the City and the City Representative, insuring not less than the sum of the amount of the Contract Price and the full value of all labour, tools, equipment and materials that are to be provided by the City for incorporation into the Work, with a deductible not exceeding two thousand five hundred dollars (\$2,500). The insurance provided shall be no less broad than the insurance provided by IBC Form 4042 or its equivalent replacement. The policy will contain a waiver of rights of subrogation against all those insured by the policy. Such coverage shall be maintained continuously until the date the certificate of Final Completion is issued or an earlier date specified by the City;
- ii. the policy will allow for partial or total use or occupancy of the Work. If because of such use or occupancy the Contractor is unable to provide coverage, the Contractor shall notify the City in writing prior to such use pay for property and, if necessary, boiler insurance insuring the full value of the Work as in (i) above, including coverage for such use or occupancy and shall provide the Contractor with proof of such insurance. The Contractor shall refund to the City the unearned premium applicable to the Contractor’s policy upon termination of coverage;
- iii. where, due to the nature of the Work, the full insurable value of the Work is substantially less than the Contract Price, the City may, at its sole discretion, reduce the amount of insurance required or waive the course of construction insurance requirement;
- iv. where such risks exist, the Contractor shall provide boiler and machinery insurance insuring not less than the replacement value of boilers, pressure vessels and other objects insurable under a boiler & machinery policy and forming part of the Work.
- v. the policies shall provide that, in the event of a loss or damage, payment shall be made to the City and the Contractor as their respective interests may appear. The Contractor shall act on behalf of the City for the purpose of claiming the amount of loss or damage from the Insurers. When the extent of the loss or damage is determined, the Contractor shall proceed to restore the Work. Loss or damage shall not affect the rights and obligations of either party under this Contract except that the Contractor shall be entitled to such reasonable extension of Contract Time relative to the extent of the loss or damage in accordance with the terms of this Contract; and
- vi. the Contractor shall be responsible for deductible amounts under the policies except where such amounts may be excluded from the Contractor’s responsibility in accordance with the Contract documents.

d) Aircraft and Watercraft Liability Insurance

Where such risks exist, the Contractor shall obtain 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, and shall have limits of not less than two million dollars (\$2,000,000) inclusive per occurrence for bodily injury, death and damage to property including loss of use thereof, and limits of not less than two million dollars for aircraft passenger hazard. Such insurance shall be in a form acceptable to the City. The policies shall be endorsed to provide the City with not less than fifteen (15) calendar days' written notice in advance of any cancellation, change or amendment restricting coverage.

e) Contractor's Equipment Insurance

The Contractor shall give proof of insurance in a form acceptable to the City of "all risks" Contractor's equipment insurance covering construction machinery and equipment used by the Contractor for the performance of the Work, including boiler insurance on temporary boilers and pressure vessels. The insurance shall be in a form acceptable to the City and shall not allow subrogation claims by the insurer against the City. The policies shall be endorsed to provide the City with not less than fifteen (15) calendar days' written notice in advance of cancellation, change or amendment restricting coverage.

f) Other Insurance

The Contractor shall provide, maintain and pay for any additional insurance required to be provided by law, or which the Contractor considers necessary to cover risks not otherwise covered by insurance specified in the Contract Documents.

12.4 Insurance General

- a) All required insurance policies shall be with insurers licensed to underwrite insurance in Nunavut and signed by representatives licensed to do so for insurance in Nunavut.
- b) The Contractor shall require and ensure that its Subcontractors maintain liability insurance comparable to that required above.
- c) If the Contractor fails to provide or maintain insurance as required by this General Condition or elsewhere in the Contract Documents, then the City shall have the right to provide and maintain such insurance and give evidence to the Contractor and the City Representative. The Contractor shall pay the cost thereof to the City on demand or the City may deduct the costs from monies which are due or may become due to the Contractor.

- d) Where an insurer fails or refuses to pay any claims under an insurance policy covering the activities of the Contractor or a Subcontractor relating to or arising out of the Work, the Contractor shall not be released from any liability arising under this Contract.

13. LOCAL AND INUIT INVOLVEMENT

13.1 Requirements for Inuit, Local and Nunavut Content

- a) The Contractor shall, in the performance of the Work, employ Inuit, Local and Nunavut workers and use Inuit, Local and Nunavut content to the greatest extent possible and at a minimum, no less than the amounts tendered by the Contractor in Appendix J-2 “Substantiation of Bid Adjustment” of the tender. Workers shall meet all levels of proficiency, qualification and expertise as dictated by Applicable Laws and/or as defined in the Contract Documents.
- b) The Contractor shall provide to the City Representative a schedule indicating the anticipated total monthly value of all Inuit, Local and Nunavut content and labour to be expended in the execution of the Work. This schedule shall provide the benchmark for ensuring compliance by the Contractor with the requirements for the use of Inuit, Local and Nunavut content during the performance of the Work.

13.2 Requirement for Community Meetings

- a) If required under this RFT (if the NNI Policy applies), The Contractor shall arrange meetings on a monthly basis, or other basis as may be mutually agreed by the parties to this contract, to monitor the use of Inuit, Local and Nunavut labour and Inuit, Local and Nunavut content. The Contractor shall give the City five (5) business days’ notice of all meetings called under GC 13.2. The Contractor shall take reasonable steps to ensure that these meetings include the following representatives:
 - i. a community representative who has been designated to speak on behalf of the community (if available);
 - ii. a community manpower representative (if available);
 - iii. the Contractor; and
 - iv. the City Representative.
- b) In addition to the community meetings contemplated in GC 13.2(a), the Contractor shall arrange a community meeting prior to the start of the Work which shall be arranged on the same terms as indicated in GC 13.2(a) and at that meeting shall:

- i. provide a schedule referred to in GC 13.1(b) above to the community representative;
 - ii. request from the community manpower representative or from the City if no community manpower representative has been delegated, a list of workers available in the community; and
 - iii. identify specific types of workers required during the project such as plumbers, painters or electricians and how many of those workers are required and when they are required and based on information received in accordance with GC 13.2(b)(ii) maintain a list of community manpower.
- c) At the community meetings contemplated in GC 13.2(a), the Contractor shall:
 - i. provide employment reports identifying workers used during the past month (to substantiate information provided on Appendix J-2 “Substantiation of Bid Adjustment”);
 - ii. provide a schedule referred to in GC 13.2(b)(i), or such schedule as amended, if necessary; and
 - iii. provide a consolidated report at the time of Substantial Performance, which shall confirm the total amount of Inuit, Local and Nunavut content used. This report will identify Inuit, Local and Nunavut payroll separately. This consolidated report shall be a condition precedent to the release of payment.
- d) The City shall attend all community meetings organized by the Contractor in accordance with this GC 13.2 and when requested by the Contractor shall identify and contact potential community workers who may be available to be employed on the Work, identify alternate workers if those workers initially identified are not available to work, and assist in confirming the residency of local workers.

13.3 Monitoring the Level of Inuit, Local and Nunavut Labour

- a) The Contractor is responsible to ensure that every worker identified as Local or Nunavut meets the qualifying requirements, which are, for Nunavut, being ordinarily resident in Nunavut for the past 12 months, and for Local being a Nunavut resident ordinarily resident in the subject community for the past 4 months. The Contractor may be required to provide proof of residency of workers at any time throughout the course of performing the Work.
- b) Reasonable proof of Nunavut and Local residency shall be any of the following:

- i. being listed on the Nunavut Tunggavik Inc. (NTI) enrolment list and provision of a physical address where residing;
 - ii. if the last 12 months have been spent as ordinarily resident in Nunavut and a physical address of such residence has been provided, then
 - A. provides a valid Nunavut Health Care Card effective at least 9 months prior to start date of employment on the Work; and/or
 - B. provides another accepted proof of residency such as: a Nunavut General Hunting License, a Nunavut Driver's Licence, a lease or rental receipt, or a certified Schedule T222 Income Tax return from the previous year or proof that Income Tax was paid in the Nunavut during the previous tax year; or
 - iii. is included on a list of approved Local or Nunavut residents verified by the municipality of their residence.
- c) The Contractor is responsible to ensure that every worker identified as Inuit is on the NTI Inuit enrolment list or would qualify to be on the list.
- d) If requested by the City to do so, the Contractor shall obtain a signed consent form from workers which verifies their residency and permits the City to obtain any and all information required to support the worker's claim of residency and/or Inuit status. A worker does not need to comply with the requirements of this clause if the worker is on the NTI Inuit enrolment list.

13.4 Requirement for Using Hotels or Bed and Breakfast

- a) If performance of the Work is undertaken where a Commercial Room and Board Facility (as defined below) exists within a Community (as defined below), the Tenderer is required to use a Commercial Room and Board Facility to house and feed all workers directly employed by the Contractor, any Subcontractor or agent or any other business working on the Project. The Contractor, Subcontractor, agent or other business are not required to use Commercial Room and Board Facilities for workers who are Local Residents.
- b) In this Contract:
 - i. "Commercial Room and Board Facility" means a Hotel or a Bed and Breakfast (Tourist Home) that holds a Tourist Establishment License issued by the Government of Nunavut under the *Travel and Tourism Act*.
 - ii. "Community" means a community in which the Work (as defined in the Contract) is being performed and includes the entire area within a 20- kilometer radius of that community.

- c) The Commercial Room and Board Facility must:
 - i. meet the applicable requirements under the *Public Health Act*, and of the *Eating or Drinking Place Regulations*; and
 - ii. meet all applicable requirements of the *Public Health Act* the *Fire Prevention Act* and applicable regulations thereunder, and any other applicable Government of Nunavut or federal legislation.

14. TRANSPORTATION OF MATERIALS

14.1 Marine Transport Resources

- a) Whenever marine (water) transport is to be utilized, the Contractor may use, and space may be booked directly with the following carrier:
 - i. Nunavut Sealink and Supply (NSSI),
By ships loading at the Montreal area Port of Ste-Catherine
 - ii. Nunavut Eastern Arctic Shipping (NEAS)
By ships loading at the Port of Valleyfield, Salaberry-de-Valleyfield
- b) The annual shipping rates offered by marine carriers are dependent upon anticipated cargo quantities including the materials for construction projects; therefore, Contractors may tender using the published sailing schedules and rates available from the above marine carriers.
- c) In exceptional or extraordinary circumstances, where the specified marine carrier's sailing schedule is in substantial conflict with the Construction Schedule, the City will review the circumstances, taking into account the adverse impact on the project and the specified marine carrier's interests, and the City may provide authorization to allow the relevant cargo to be shipped with a marine carrier other than the specified marine carrier, depending upon the circumstances; and such authorization must be in writing.
- d) If a Contractor uses a marine carrier other than the City contracted marine carrier without the City's written authorization to do so, the Contractor shall be responsible for extra freight cost, administrative costs or any other costs, incurred by the City which result directly or indirectly from the Contractor's failure to use the City specified marine carrier as set out in this GC 14. The Contractor shall also be responsible to refund to the City any monies saved by the Contractor by using a marine carrier other than the specified marine carrier as set out in this GC 14.

END OF SECTION

Amend the General Conditions as follows:

1. COVID-19 Restrictions and Protocols

1. All Tenderer's shall abide by the CMM Guidelines and measures. Due to current travel restrictions, local personnel shall be used where possible, unless measures mandated by local Health Authorities are implemented (e.g. selfisolation, social distancing, etc.)
2. Tenderers are to review the current travel restriction orders, self isolation orders and other regulations put forth by the Government of Nunavut and local health authorities. Tenderers to review the "Travel Restrictions Order #2", "Order Respecting Social Distancing and Gatherings #9" and "Protocol – Critical Employee and Isolation" orders provided in Part 7 – Other Reference Documents. Current regulations and information can be found on the GN website:

<https://gov.nu.ca/health/information/travel-and-isolation>
3. Tenderers are to provide all costs and assumptions to abide by the travel and work restrictions identified in Sections 2.1 and 2.2 above, that are required to complete the scope of work identified in the Tender Documents.
4. For the purposes of the Tender, it should be assumed that the project will be classified as an essential service, and that Contractors will require to follow the protocols for essential works in the documents listed above.

END OF SECTION

Background

The City of Iqaluit have constructed a Steel Structure at the City's Fire Training Grounds - adjacent to the West 40 Landfill - and is currently looking for obtaining Quotations for the supply, installation, and commissioning of the Mechanical system as identified in the enclosed drawing set and specifications.

Scope of Work

The Bidder will be responsible for all materials labour, and equipment required to execute the scope of work. The following describes the general Scope of Work for the project:

1. Supply, installation, and commissioning as per the attached drawings and specifications. Not limited to:
 - a. Fuel Tank & pipeline system
 - b. Plumbing works
 - c. HVAC system & Controls
2. The Contractor will be responsible for obtaining all the required permits for performing the work.

List of Drawings:

Dwg. No	Description
S-1000	Structural Notes
S-7001	FIRE TRUCK STORAGE GARAGE STRUCTURAL FUEL PIPE SUPPORT DETAILS
M-1001	FIRE TRUCK STORAGE GARAGE MECHANICAL PLUMBING PLAN
M-3001	FIRE TRUCK STORAGE GARAGE MECHANICAL HEATING AND VENTILATION - PLAN
M-6001	FIRE TRUCK STORAGE GARAGE MECHANICAL HEATING AND VENTILATION - SECTIONS
M-6002	FIRE TRUCK STORAGE GARAGE MECHANICAL SECTIONS
M-8001	FIRE TRUCK STORAGE GARAGE MECHANICAL HVAC SCHEMATIC AND CONTROLS
M-8002	FIRE TRUCK STORAGE GARAGE MECHANICAL FUEL SYSTEM SCHEMATIC
M-9001	FIRE TRUCK STORAGE GARAGE MECHANICAL HVAC SCHEDULES

List of Specification:

Spec. No	Description
MSK-001	HOOD/DAMPER MOUNT CONFIGURATION FOR ALL DAMPERS/FANS
01 10 00	General Requirements
21 05 01	Common Work Results for Mechanical

23 05 00	Common Work Results for HVAC
23 11 13	Facility Fuel-Oil Piping

STRUCTURAL NOTES

- ALL WORK SHALL MEET OR EXCEED MINIMUM REQUIREMENTS OF THE CURRENT EDITION OF THE NATIONAL BUILDING CODE OF CANADA 2015, ASSOCIATED STANDARDS REFERENCED IN THAT CODE, AND LOCAL STANDARDS AND BYLAWS AS APPLICABLE.
- ALL DIMENSIONS TO BE FIELD VERIFIED AND COORDINATED WITH THE PRE-ENGINEERED BUILDING DRAWINGS PRIOR TO CONSTRUCTION (DRAWINGS BY OTHERS).
- CONTRACTOR TO READ STRUCTURAL DRAWINGS IN CONJUNCTION WITH ARCHITECTURAL, MECHANICAL, AND ELECTRICAL DRAWINGS.
- THE STRUCTURAL DRAWINGS HEREIN REPRESENT THE FINISHED FOUNDATION. THE CONTRACTOR SHALL PROVIDE ALL TEMPORARY SHORING AND BRACING REQUIRED TO ERECT AND HOLD THE STRUCTURE IN PROPER ALIGNMENT UNTIL ALL STRUCTURAL WORK AND CONNECTIONS HAVE BEEN COMPLETED. THE INVESTIGATION, DESIGN, ADEQUACY, AND INSPECTION OF ERECTION BRACING, SHORING, TEMPORARY SUPPORTS, ETC, ARE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
- SUBMITTALS:
 - PROVIDE TO CONSULTANT FOR REVIEW, SUBMITTALS FOR THE FOLLOWING-A
A) REINFORCING
B) STRUCTURAL STEEL ANCHORAGE
 - FULLY DETAILED SHOP DRAWINGS SHOWING ALL INFORMATION NECESSARY FOR FABRICATION AND INSTALLATION IN ACCORDANCE WITH INDUSTRY STANDARDS.
 - ALL SUBMITTALS SHALL BE IN METRIC UNITS.
 - DO NOT COMMENCE FABRICATION UNTIL REVIEWED SUBMITTAL HAS BEEN RETURNED. REVIEW OF SUBMITTALS DOES NOT RELIEVE THE CONTRACTOR FROM COMPLIANCE WITH THE CONTRACT DOCUMENTS.

DESIGN CRITERIA

- DESIGN STANDARDS
GENERAL: NATIONAL BUILDING CODE OF CANADA
STEEL: CSA STANDARD S16
WOOD: CSA STANDARD C86
- DESIGN LOADS:
IMPORTANCE CATEGORY: NORMAL

DEAD LOADS: WEIGHT OF MATERIALS PLUS THE SUPERIMPOSED LOADS SHOWN ON PRE-ENGINEERED BUILDING DRAWINGS

SNOW LOADS: IMPORTANCE FACTOR: Is = 1.0 (ULS), 0.9 (SLS)
GROUND SNOW LOAD: Ss = 2.9 kPa
ASSOCIATED RAIN LOAD: Sr = 0.2 kPa

WIND LOADS: IMPORTANCE FACTOR: Iw = 1.0 (ULS), 0.75 (SLS)
REF. WIND PRESSURE: q(z₀) = 0.58 kPa
INTERNAL PRESSURES: CATEGORY 2

SEISMIC LOADS: SITE CLASS C
Sa(0.2) = 0.087
Sa(0.5) = 0.085
Sa(1.0) = 0.043
Sa(2.0) = 0.023
Sa(5.0) = 0.0058
Sa (10.0) = 0.0025
PGA = 0.051
PGV = 0.052
Ie = 1.5 (ULS)
Rd = 5.0 (DUCTILE MOMENT RESISTING FRAME)
Ro = 1.5

LIVE LOAD: N/A

STEEL PIPE PILES (TOWER FOUNDATIONS ONLY)

- DESIGN PILES IN ACCORDANCE WITH THE REQUIREMENTS OF THE CANADIAN FOUNDATION ENGINEERING MANUAL 4TH EDITION, THE NATIONAL BUILDING CODE OF CANADA 2015, AND CSA S16 TO RESIST SPECIFIED LOADS.
- SUBMIT PILE DESIGNS, STAMPED AND SIGNED BY A PROFESSIONAL ENGINEER REGISTERED IN THE NORTHWEST TERRITORIES AND NUNAVUT, CANADA, INDICATING:
 - MATERIAL PROPERTIES
 - DESIGN PARAMETERS
 - PILE DIAMETER AND WALL THICKNESS
 - PILE LENGTH AND EMBEDMENT DEPTH
 - PILE RESISTANCES
- CUT-OFF PILES NEATLY AND SQUARELY AT ELEVATIONS INDICATED.

STRUCTURAL STEEL

- FABRICATION AND ERECTION SHALL BE IN ACCORDANCE WITH CAN/CSA S16.
- MATERIALS SHALL CONFORM TO THE FOLLOWING:
CHANNELS: CSA G40.21, 300W
ANGLES, PLATES, AND BARS: CSA G40.21, 300W
BOLTS, NUTS, AND WASHERS: ASTM A325
WELDING MATERIALS: CSA W48 SERIES
- WELDING SHALL BE IN ACCORDANCE WITH CSA W59. COMPANIES TO BE CERTIFIED UNDER DIVISION 1 OR 2.1 OF CSA W47.1 FOR FUSION WELDING OF STEEL STRUCTURES AND/OR CSA W55.3 FOR RESISTANCE WELDING OF STRUCTURAL COMPONENTS.
- MINIMUM WELDS FOR CONNECTIONS SHALL BE 6mm FILLET WELDS
- BOLTED CONNECTIONS BETWEEN STEEL MEMBERS SHALL BE MADE U USING A MINIMUM OF 2-19 DIA BOLTS.
- BOLTS SHALL BE PRE-TENSIONED BY THE TURN-OF-NUT METHOD IN ACCORDANCE WITH CSA S16, UNLESS NOTED OTHERWISE.
- SUBMIT SHOP DRAWINGS FOR REVIEW PRIOR TO FABRICATION.

CONCRETE WORK

- TO CSA-A23.1 AND CONSTRUCTION NOTES.

CONCRETE REINFORCEMENT

- REINFORCING STEEL SHALL BE BILLET STEEL CONFORMING TO CSA-G30.18 GRADE 400.
- WELDABLE REINFORCING BARS SHALL CONFORM TO CSA-G30.18 GRADE 400W. WELDING OF REINFORCING STEEL SHALL CONFORM TO CSA-W186.
- REINFORCING STEEL SHALL BE DETAILED IN ACCORDANCE WITH THE LATEST EDITION OF THE ACI DETAILING MANUAL OR THE REINFORCING STEEL INSTITUTE OF CANADA DETAILING MANUAL.
- 90° HOOKS AND 180° HOOKS WHERE SHOWN SHALL BE DETAILED AS STANDARD HOOKS UNLESS NOTED OTHERWISE.
- CONCRETE COVER TO REINFORCING STEEL SHALL CONFORM TO THE MOST STRINGENT REQUIREMENT LISTED BELOW UNLESS NOTED OTHERWISE:

CONCRETE CAST AGAINST EARTH OR WORK SLAB	75mm
BASE SLAB	
TOP BARS	60mm
BOTTOM BARS	60mm
CONCRETE CAST IN FORMS	
BEAMS - TO STIRRUPS EACH FACE	40mm
RATIO OF COVER TO NOMINAL BAR DIAMETER	1.5

- BENDING, CUTTING AND PLACING OF REINFORCING STEEL SHALL CONFORM TO CAN/CSA A23.1 AND CAN/CSA A23.3.
- UNLESS NOTED OTHERWISE, PROVIDE DOWELS OF THE SAME SIZE, NUMBER AND SPACING WHERE REINFORCING IS SPLICED.
- SUBMIT TO THE CONSULTANT FOR REVIEW THE LOCATION OF ALL CONSTRUCTION JOINTS NOT SHOWN ON THE DRAWINGS.
- HORIZONTAL CONSTRUCTION JOINTS SHALL BE MADE IN BEAMS UNLESS SHOWN ON THE DRAWINGS.
- SUBMIT TO THE CONSULTANT FOR REVIEW THE LOCATIONS OF ALL SLEEVES AND OPENINGS NOT SHOWN ON THE DRAWINGS. THE CONSULTANT WILL PROVIDE STRUCTURAL DETAILS AS REQUIRED FOR SLEEVES AND OPENINGS.
- SLEEVES SHALL NOT BE PLACED HORIZONTALLY ALONG OR VERTICALLY THROUGH BEAMS UNLESS AUTHORIZED BY THE CONSULTANT.
- CAMBER BOTH THE UNDERSIDE AND THE TOP OF THE CONCRETE IN A PARABOLIC PROFILE SO THAT THE STRUCTURAL THICKNESS SHOWN ON THE DRAWING IS MAINTAINED.
- HORIZONTAL CONSTRUCTION JOINTS IN FOUNDATION WALLS ARE NOT PERMITTED EXCEPT WHERE SHOWN ON DRAWINGS OR WHERE AUTHORIZED BY THE CONSULTANT.
- REINFORCING STEEL BAR LAPS SHALL BE CLASS B TENSION SPLICES PER ACI250M-01 UNLESS NOTED OTHERWISE.

CLASS B TENSION LAP SPlice FOR 30MPa CONCRETE STRENGTH			
BAR SIZE	BOTTOM BARS	TOP BARS	INTEGRITY STEEL
10M	460	590	460
15M	680	890	680
20M	910	1180	910
25M	1400	1820	1400
30M	1680	2180	1680

CLASS B TENSION LAP SPlice FOR 35MPa CONCRETE STRENGTH			
BAR SIZE	BOTTOM BARS	TOP BARS	INTEGRITY STEEL
10M	420	550	420
15M	630	820	630
20M	840	1090	840
25M	1300	1680	1300
30M	1550	2020	1550

NOTES:

- TOP BAR LENGTHS ARE APPLICABLE TO HORIZONTAL BARS WITH MORE THAN 300mm OF CONCRETE PLACED BENEATH THE BAR.
- INTEGRITY STEEL SPLICES SHALL OCCUR ONLY WITHIN THE COLUMN CORES.

CONCRETE ACCESSORIES

- EXPANSION ANCHORS: OF DIAMETER SHOWN AND STANDARD EMBEDMENT U.N.O. CAPACITIES ARE BASED ON HILTI KWIK BOLT 3 (KB3) EXPANSION ANCHORS. SUBMIT ANCHOR LOAD RESISTANCE DATA FROM INDEPENDENT TESTING FIRM FOR REVIEW BY ENGINEER MIN. 2 WEEKS PRIOR TO INTENDED USE.
- EPOXY ANCHORS: OF DIAMETER SHOWN AND STANDARD EMBEDMENT U.N.O. SHEAR AND TENSION CAPACITIES ARE BASED ON HILTI HY200 + HIT-Z SUPER HARDWARE. SUBMIT ANCHOR LOAD RESISTANCE DATA FROM INDEPENDENT TESTING FIRM FOR REVIEW BY ENGINEER MIN. 2 WEEKS PRIOR TO INTENDED USE.

CONCRETE FORMWORK

- FORM WORK: CONFORM TO CAN/CSA0S269.3.

CONCRETE

- PROVIDE CONCRETE AND PERFORM WORK IN ACCORDANCE WITH CSA-A23.1. THE CONTRACTOR SHALL HAVE A COPY OF THIS STANDARD ON SITE AT ALL TIMES.
- ALL CONCRETE SHALL BE NORMAL-DENSITY WITH NORMAL-DENSITY FINE AND COARSE AGGREGATE AND BE PROPORTIONED TO MEET THE FOLLOWING REQUIREMENTS:

LOCATION	CSA EXPOSURE CLASS	CEMENT TYPE	MINIMUM COMPRESSIVE STRENGTH (MPa)	MAX W/C RATIO	MAX. AGGREGATE (mm)	AIR CONTENT (%)
MAIN FLOOR SLAB	F-2	GU	30 @ 28 DAYS	-	20	0-3
GRADE BEAMS	F-2	GU	30 @ 28 DAYS	-	20	4-7

- FLY ASH CONTENT SHALL NOT EXCEED 25% OF TOTAL CEMENTITIOUS MATERIALS FOR FLOOR SLABS, BEAMS, AND TOPPINGS. 40% FOR OTHER CONCRETE.
- ADMIXTURES CONTAINING CALCIUM CHLORIDE ARE NOT PERMITTED.
- SUPERPLASTICIZING ADMIXTURE IS PERMITTED TO ALLOW PUMPING OR IMPROVE SURFACE FINISHING OF CONCRETE.
- FOR FLOOR SLABS, DESIGN THE CONCRETE MIXTURE WITH AGGREGATE GRADING AND WATER-TO-CEMENTING MATERIALS RATIO THAT MINIMIZE SHRINKAGE.

CONSTRUCTION NOTES

- EXCAVATE, LEVEL AND PROOF ROLL A 3m STRIP WHERE WALLS ARE TO BE LOCATED.
- PLACE LEVELLING LAYER OF DRY SAND FOR INSULATION SUPPORT AND PLACE INSULATION.
- FORM AND REINFORCE: PLACE ANCHOR RODS USING PLYWOOD TEMPLATES.
- PREHEAT FORMWORK AND REINFORCING PRIOR TO POUR.
- CAST FOOTINGS ON INSULATION AND COVER IMMEDIATELY WITH INSULATED TARPS. FOOTING SIZES ARE SUCH THAT THEY ARE CONSIDERED TO BE A MASS POUR. DO NOT OVERHEAT THE CURING CONCRETE.
- WHEN CONCRETE HAS CURED TO 70% OF 28 DAY STRENGTH, REMOVE HEAT BUT MAINTAIN COVER UNTIL AMBIENT TEMPERATURES ARE ATTAINED.
- ALL CONCRETE WORK TO CONFORM TO THE LATEST EDITION OF CSA A23.1.

AECOM

PROJECT

**City of Iqaluit
Fire Department
Garage**

CLIENT

City of Iqaluit

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Date: May 18, 2022

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NWT/NU Association of Professional
Engineers and Geoscientists

ISSUE/REVISION

1	2022-05-18	RE-ISSUED FOR TENDER
0	2021-10-08	ISSUED FOR TENDER
I/R	DATE	DESCRIPTION

KEY PLAN

PROJECT NUMBER

60642509

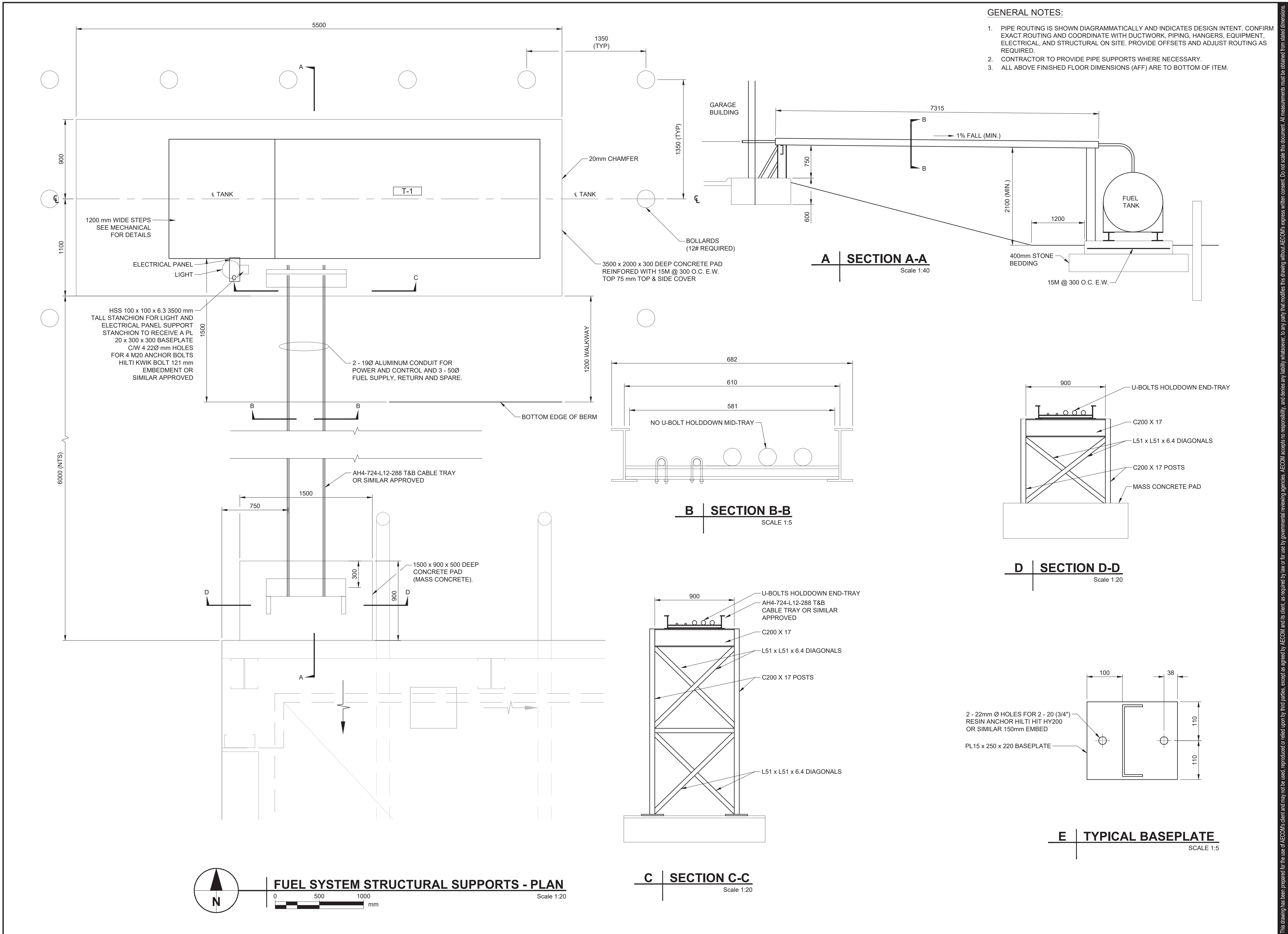
SHEET TITLE

STRUCTURAL
NOTES

SHEET NUMBER

S-1000

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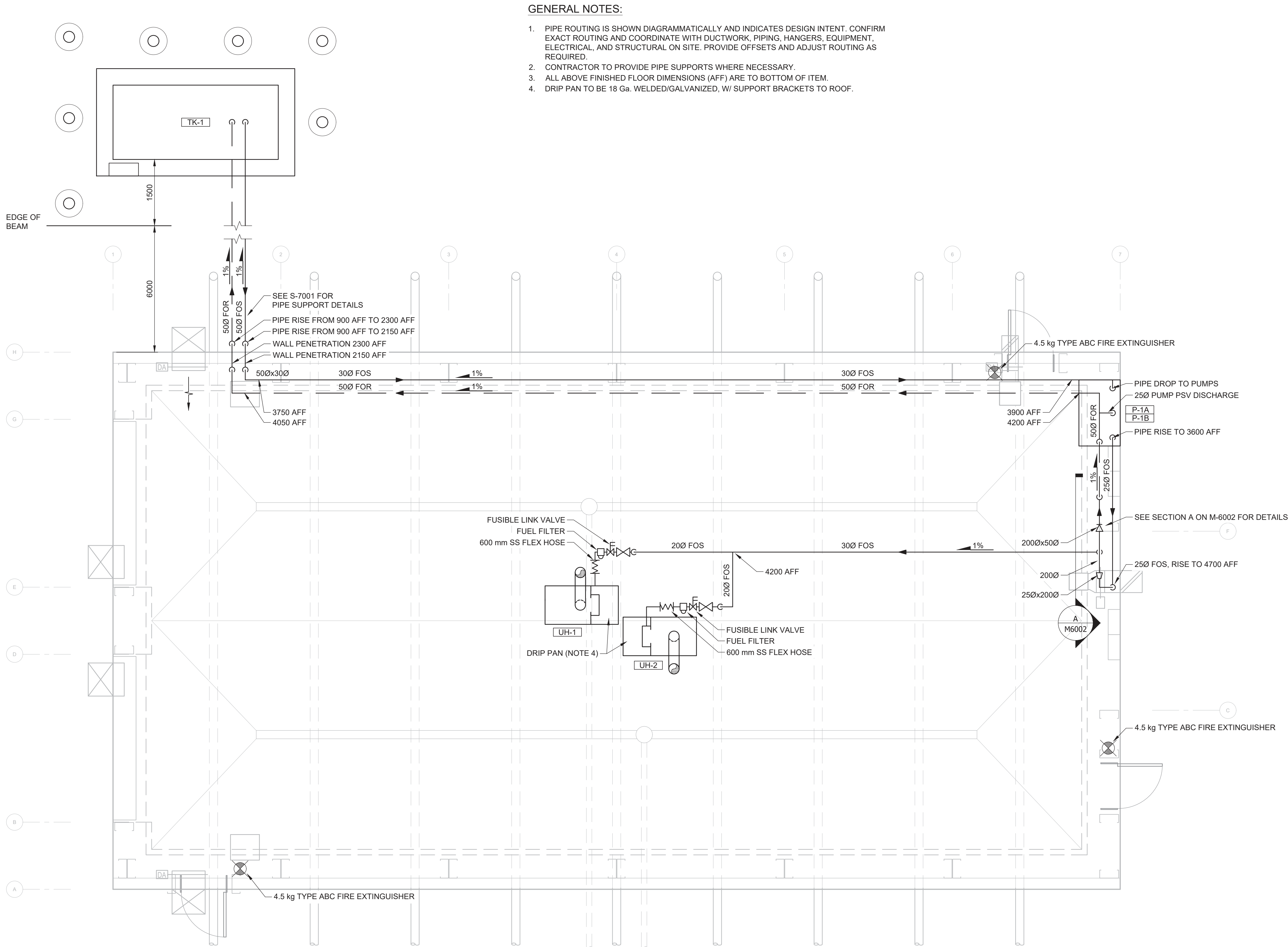
SHEET TITLE

FIRE TRUCK STORAGE GARAGE
STRUCTURAL FUEL PIPE
SUPPORT DETAILS

SHEET NUMBER

S-7001

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GENERAL NOTES:

- PIPE ROUTING IS SHOWN DIAGRAMMATICALLY AND INDICATES DESIGN INTENT. CONFIRM EXACT ROUTING AND COORDINATE WITH DUCTWORK, PIPING, HANGERS, EQUIPMENT, ELECTRICAL, AND STRUCTURAL ON SITE. PROVIDE OFFSETS AND ADJUST ROUTING AS REQUIRED.
- CONTRACTOR TO PROVIDE PIPE SUPPORTS WHERE NECESSARY.
- ALL ABOVE FINISHED FLOOR DIMENSIONS (AFF) ARE TO BOTTOM OF ITEM.
- DRIP PAN TO BE 18 Ga. WELDED/GALVANIZED, W/ SUPPORT BRACKETS TO ROOF.



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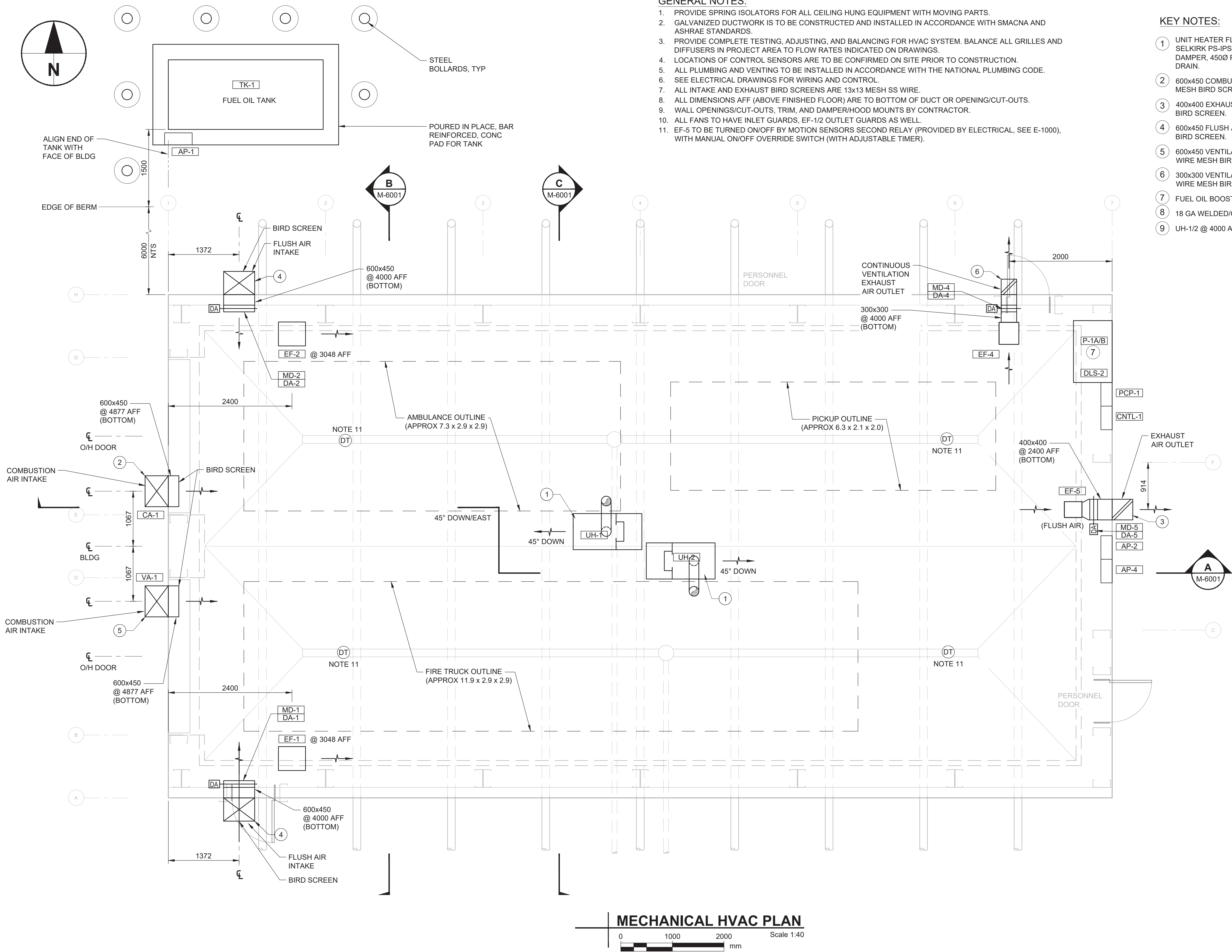
SHEET TITLE

FIRE TRUCK STORAGE GARAGE
MECHANICAL PLUMBING PLAN

SHEET NUMBER

M-1001

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GENERAL NOTES:

1. PROVIDE SPRING ISOLATORS FOR ALL CEILING HUNG EQUIPMENT WITH MOVING PARTS.
2. GALVANIZED DUCTWORK IS TO BE CONSTRUCTED AND INSTALLED IN ACCORDANCE WITH SMACNA AND ASHRAE STANDARDS.
3. PROVIDE COMPLETE TESTING, ADJUSTING, AND BALANCING FOR HVAC SYSTEM. BALANCE ALL GRILLES AND DIFFUSERS IN PROJECT AREA TO FLOW RATES INDICATED ON DRAWINGS.
4. LOCATIONS OF CONTROL SENSORS ARE TO BE CONFIRMED ON SITE PRIOR TO CONSTRUCTION.
5. ALL PLUMBING AND VENTING TO BE INSTALLED IN ACCORDANCE WITH THE NATIONAL PLUMBING CODE.
6. SEE ELECTRICAL DRAWINGS FOR WIRING AND CONTROL.
7. ALL INTAKE AND EXHAUST BIRD SCREENS ARE 13x13 MESH SS WIRE.
8. ALL DIMENSIONS AFF (ABOVE FINISHED FLOOR) ARE TO BOTTOM OF DUCT OR OPENING/CUT-OUTS.
9. WALL OPENINGS/CUT-OUTS, TRIM, AND DAMPER/HOOD MOUNTS BY CONTRACTOR.
10. ALL FANS TO HAVE INLET GUARDS, EF-1/2 OUTLET GUARDS AS WELL.
11. EF-5 TO BE TURNED ON/OFF BY MOTION SENSORS SECOND RELAY (PROVIDED BY ELECTRICAL, SEE E-1000), WITH MANUAL ON/OFF OVERRIDE SWITCH (WITH ADJUSTABLE TIMER).

KEY NOTES:

- ① UNIT HEATER FLUE THROUGH ROOF THIMBLE TO 1 m ABOVE ROOF. SELKIRK PS-IPS-304-C2 2000 WITH FIELD CONTROLS TYPE M BAROMETRIC DAMPER, 450Ø PVT PITCHED ROOF THIMBLE, AND 25Ø SS BALL VALVE DRAIN.
- ② 600x450 COMBUSTION AIR INLET, 18 Ga SS HOOD WITH ALL 13 x 13 SS WIRE MESH BIRD SCREEN.
- ③ 400x400 EXHAUST OUTLET, 22 Ga SS HOOD WITH ALL 13 x 13 SS WIRE MESH BIRD SCREEN.
- ④ 600x450 FLUSH AIR INLET, 18 Ga SS HOOD WITH ALL 13 x 13 SS WIRE MESH BIRD SCREEN.
- ⑤ 600x450 VENTILATION AIR INTAKE, 18 Ga SS HOOD WITH ALL 13 x 13 SS WIRE MESH BIRD SCREEN.
- ⑥ 300x300 VENTILATION AIR OUTLET, 22 Ga SS HOOD WITH ALL 13 x 13 SS WIRE MESH BIRD SCREEN.
- ⑦ FUEL OIL BOOSTER PUMP SKID FOR UH-1 & 2.
- ⑧ 18 GA WELDED/GALVANIZED DRIP PAN W/ SUPPORT BRACKETS TO ROOF.
- ⑨ UH-1/2 @ 4000 AFF (TO BOTTOM).



PROJECT

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INTENTION TO CARRY OUT ITS OPERATIONS.

REGISTRATION



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AECOM CANADA LTD.

Signature: *Barry Sidorow*

Date: May 18, 2022

PERMIT NUMBER: P639
NWT/NU Association of Professional
Engineers and Geoscientists

ISSUE/REVISION

I/R	DATE	DESCRIPTION
3	2022-05-18	RE-ISSUED FOR TENDER
2	2021-10-07	ISSUED FOR TENDER
1	2021-09-07	ISSUED FOR REVIEW

KEY PLAN

PROJECT NUMBER

60642509

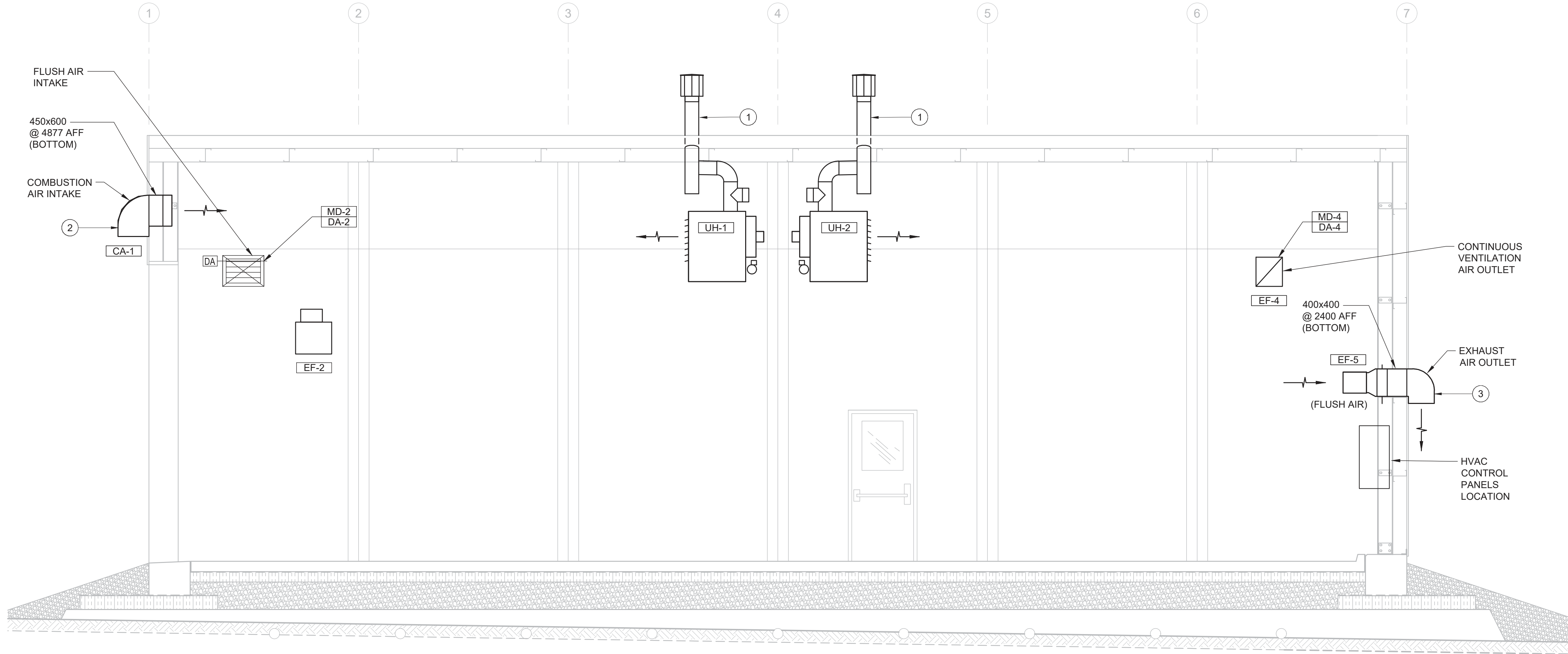
SHEET TITLE

FIRE TRUCK STORAGE GARAGE
MECHANICAL HEATING AND
VENTILATION - PLAN

SHEET NUMBER

M-3001

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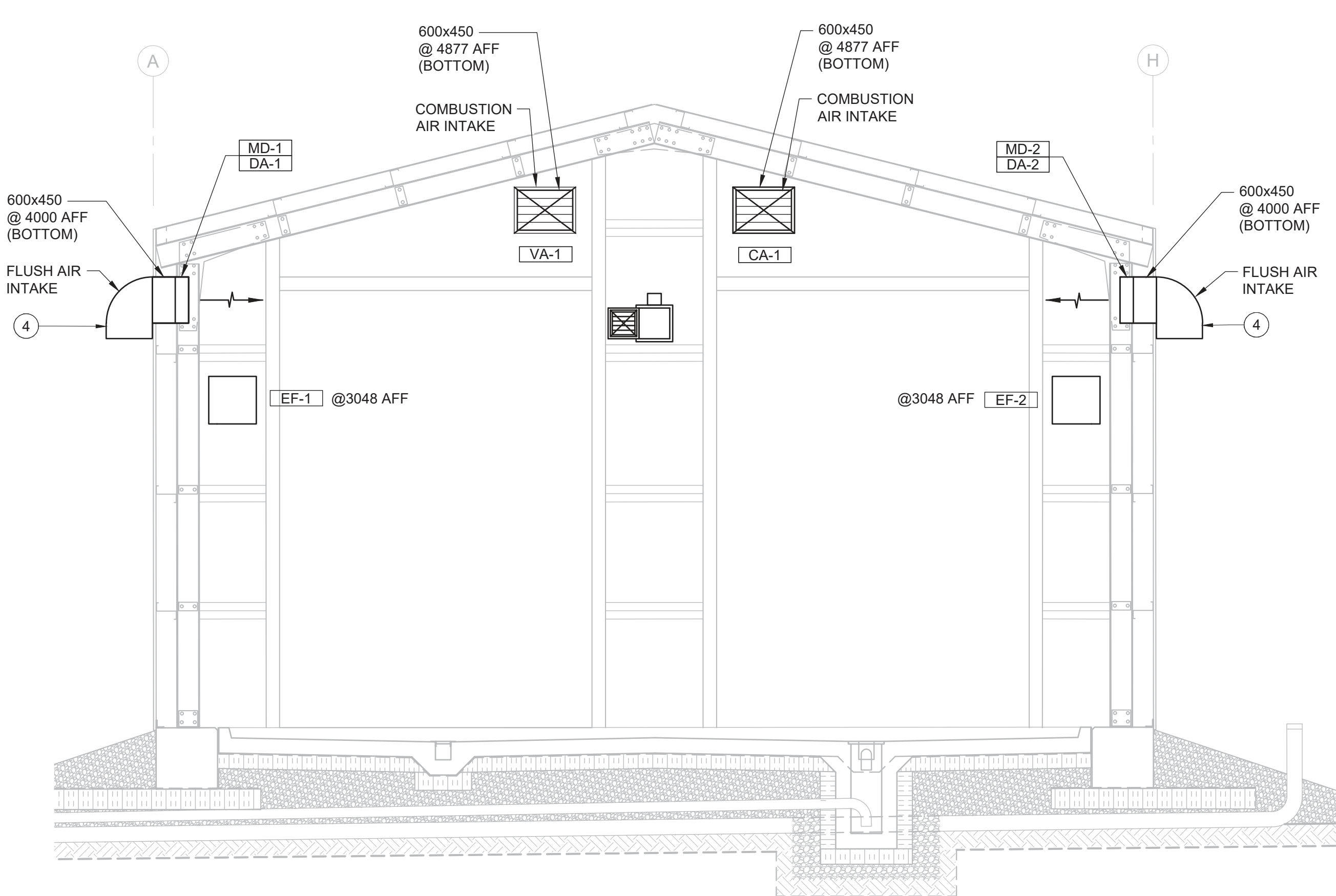
GENERAL NOTES:

- REFER TO GENERAL NOTES ON DWG M-3001.
- ALL BIRDSCREENS TO BE 13x13 3 Ga SS WIRE MESH.

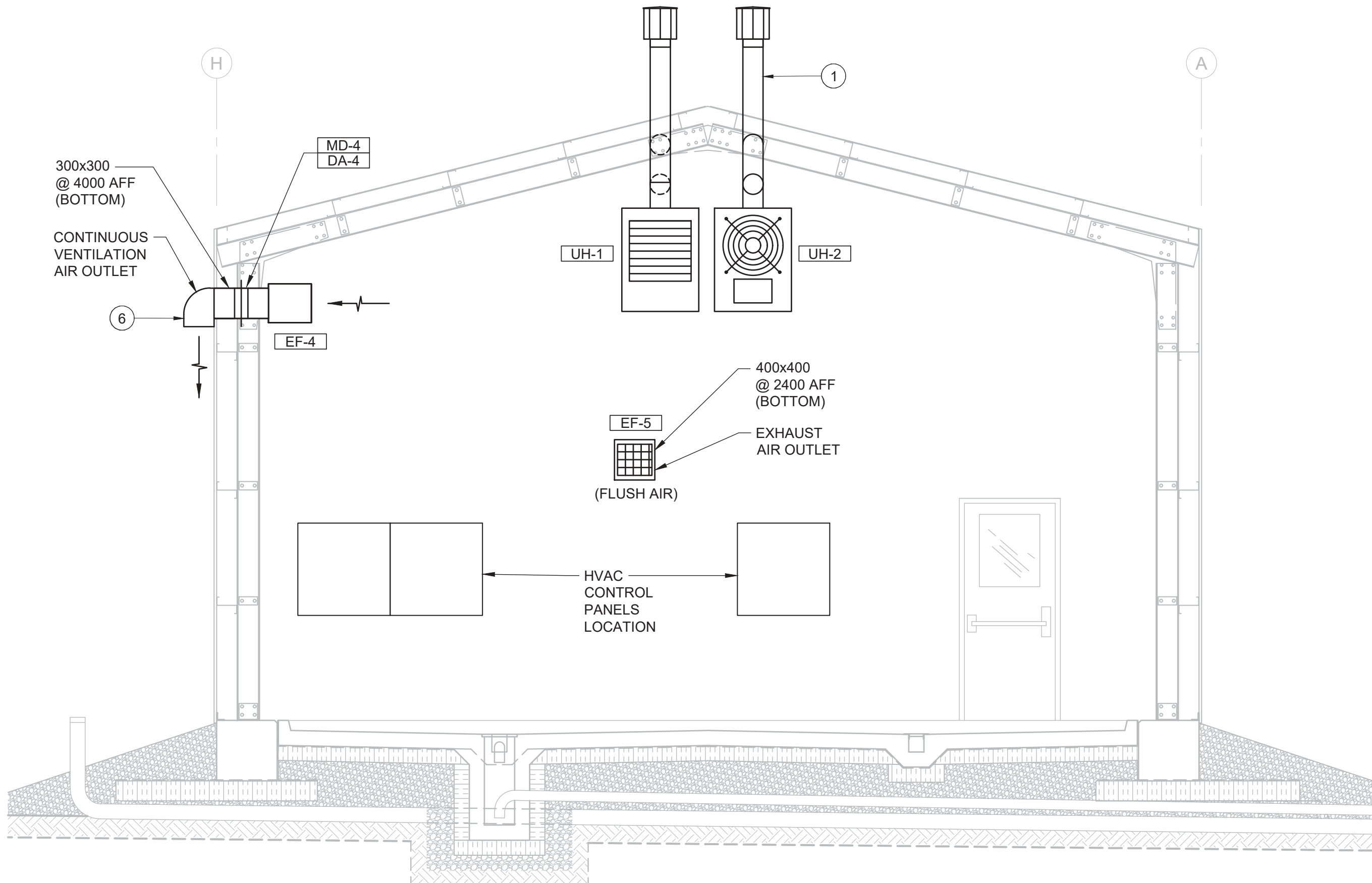
KEY NOTES:

- UNIT HEATER FLUE THROUGH ROOF, WITH THIMBLE. EXTEND 1 m ABOVE ROOF c/w ROUND TOP (CT, SEE M-3001 KEYNOTE)) AND BAROMETRIC DAMPER.
- 600x450 COMBUSTION AIR INLET, 18 Ga SS HOOD WITH BIRD SCREEN.
- 400x400 EXHAUST OUTLET, 22 Ga SS HOOD WITH BIRD SCREEN.
- 600x450 FLUSH AIR INLET, 18 Ga SS HOOD WITH BIRD SCREEN.
- 600x450 VENTILATION AIR INTAKE, 18 Ga SS HOOD WITH BIRD SCREEN.
- 300x300 VENTILATION AIR OUTLET, 22 Ga SS HOOD WITH BIRD SCREEN.

A SECTION
M-3001 Scale 1:40



B SECTION
M-3001 Scale 1:40



C SECTION
M-3001 Scale 1:40



PROJECT

City of Iqaluit Fire Department Garage

CLIENT

City of Iqaluit

Building 901, City of Iqaluit, Box 460
Iqaluit, Nunavut X0A 0H0
867.979.5600 tel 867.979.5922 fax
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REGISTRATION



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Signature	<i>Benny Seidman</i>
Date	May 18, 2022
PERMIT NUMBER: P639 NWT/NU Association of Professional Engineers and Geoscientists	

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1	2022-05-18	RE-ISSUED FOR TENDER
0	2021-10-08	ISSUED FOR TENDER

KEY PLAN

PROJECT NUMBER

60642509

SHEET TITLE

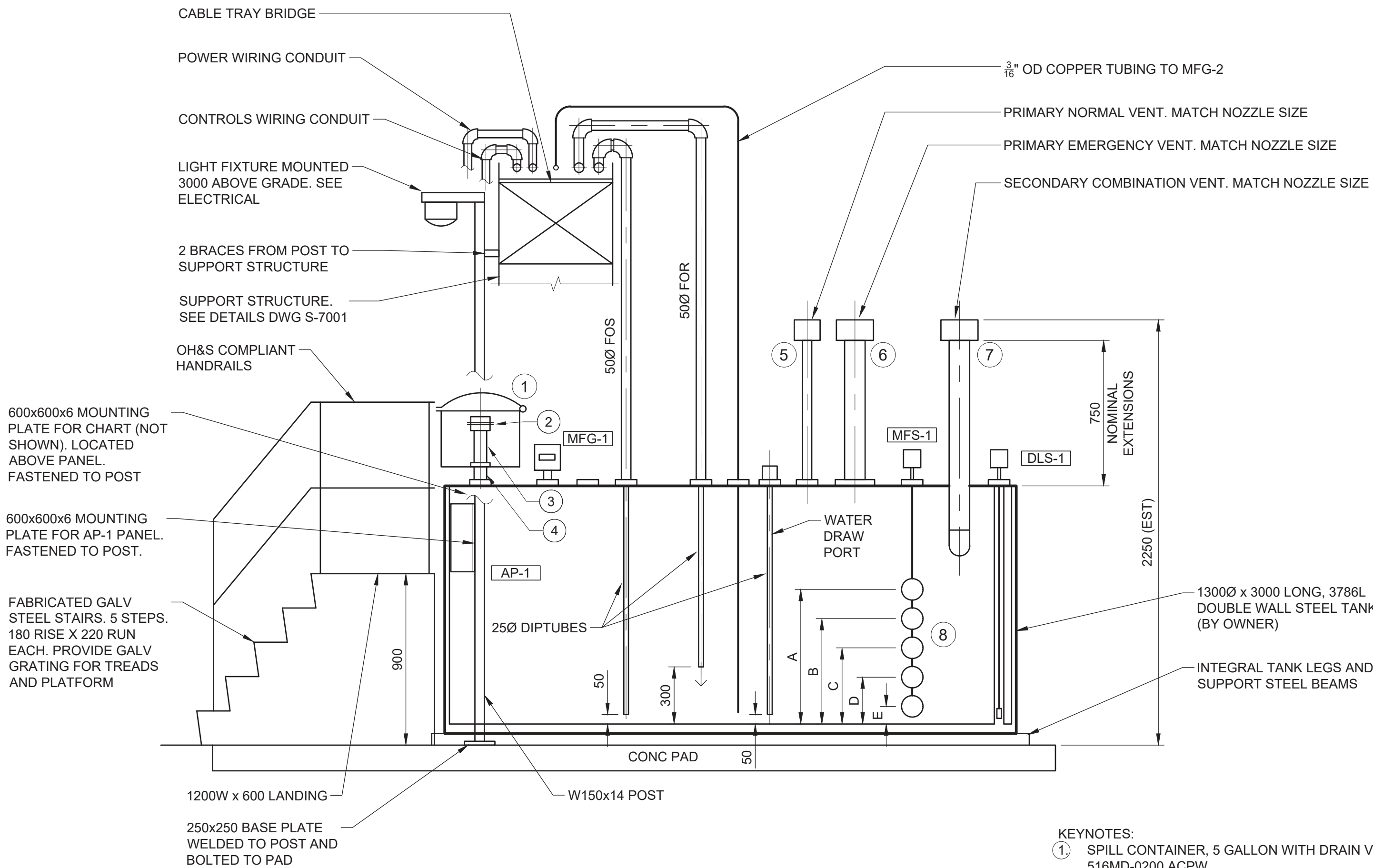
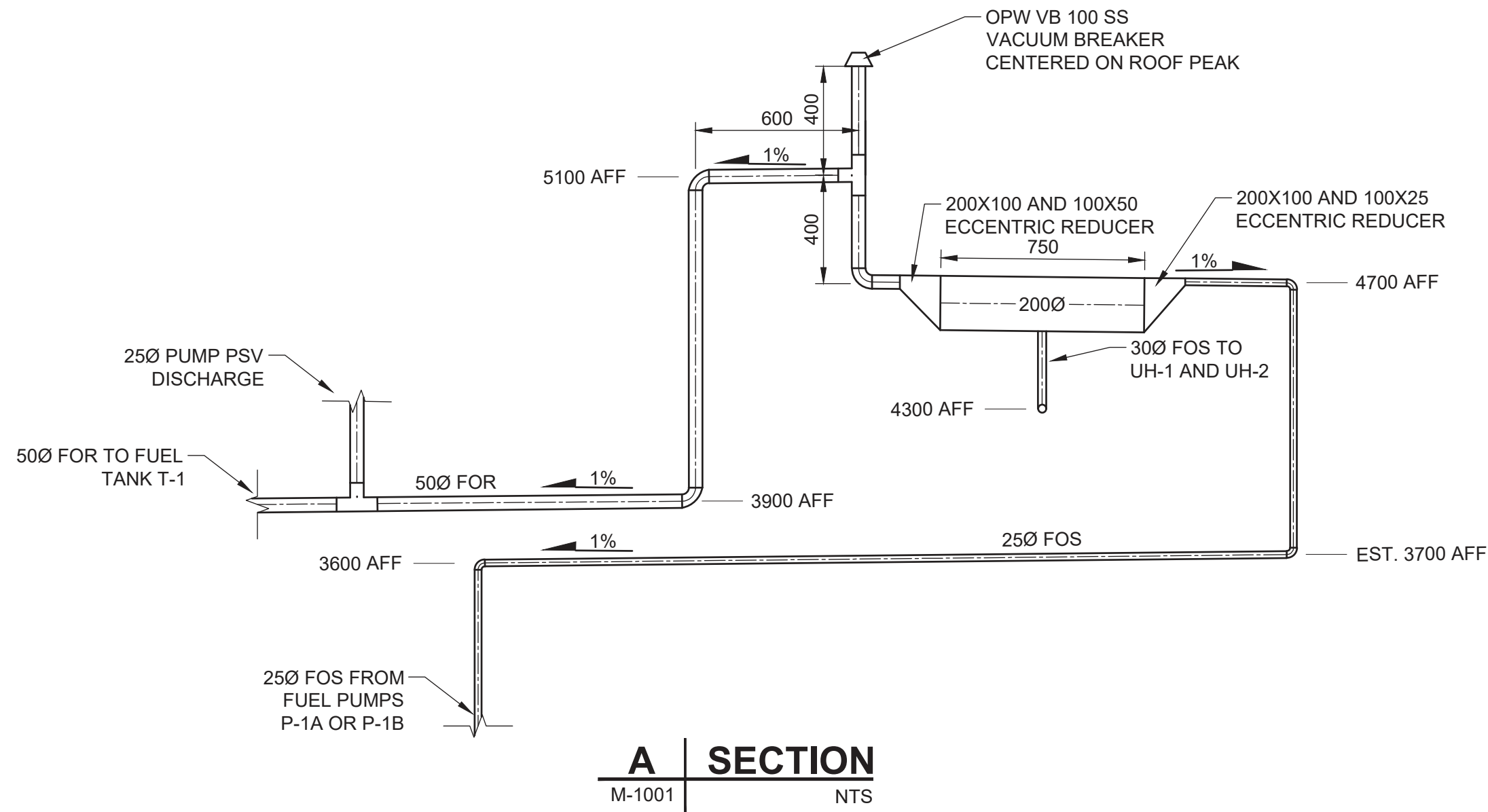
FIRE TRUCK STORAGE GARAGE
MECHANICAL HEATING AND
VENTILATION - SECTIONS

SHEET NUMBER

M-6001

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GENERAL NOTES:
1. REFER TO GENERAL NOTES ON DWG M-1001



FUEL TANK DETAIL

NTS

- GENERAL NOTES:
- CONTRACTOR TO PROVIDE AS-BUILT DRAWING OF EXISTING TANK INCLUDING NOZZLE SIZES/LOCATIONS AND USAGES, THEN SEND IT IN RFI FOR REVIEW/ACCEPTANCE.
 - CONTRACTOR TO PROVIDE ADDITIONAL FUEL PIPE SUPPORTS AND ADJUST PIPE BRIDGE LOCATION AS REQUIRED BASED ON NOZZLE USAGE LOCATIONS.
 - FUEL OIL TANK PROVIDED BY OWNER. ALL OTHER ITEMS TO BE PROVIDED BY CONTRACTOR.

- KEYNOTES:
- SPILL CONTAINER, 5 GALLON WITH DRAIN VALVE, MORRISON BROTHERS 516MD-0200 ACPW
 - LOCKING CAP, 2", MORRISON BROTHERS 178-0100AC
 - 50 (2") NPT NIPPLE x 200 (8") LONG, SCHEDULE 40 A53 PIPE.
 - 50 (2") NPT SHORT NIPPLE x 100 (4") LONG, SCHEDULE 40 A53 PIPE.
 - PRIMARY NORMAL VENT, MORRISON BROTHERS MODEL 354, SIZE TO MATCH. NOMINAL 750 LONG SCHEDULE 40 A53 EXTENSION PIPE, SIZE TO MATCH.
 - PRIMARY EMERGENCY VENT, MORRISON BROTHERS MODEL 244, SIZE TO MATCH. NOMINAL 750 LONG SCHEDULE 40 A53 EXTENSION PIPE, SIZE TO MATCH.
 - COMBINATION SECONDARY VENT, MORRISON BROTHERS MODEL 244, SIZE TO MATCH. NOMINAL 750 LONG SCHEDULE 40 A53 EXTENSION PIPE, SIZE TO MATCH.
 - PRELIMINARY FLOAT LEVELS (mm): A=610, B=533, C=457, D=152, E=76 (ALL FROM BOTTOM).

AECOM

PROJECT

City of Iqaluit
Fire Department
Garage

CLIENT

City of Iqaluit

Building 901, City of Iqaluit, Box 460
Iqaluit, Nunavut X0A 0H0
867.979.5600 tel 867.979.5922 fax
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PERMIT NUMBER: P639 NWT/NU Association of Professional Engineers and Geoscientists	

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KEY PLAN

PROJECT NUMBER

60642509

SHEET TITLE

FIRE TRUCK STORAGE GARAGE
MECHANICAL
SECTIONS

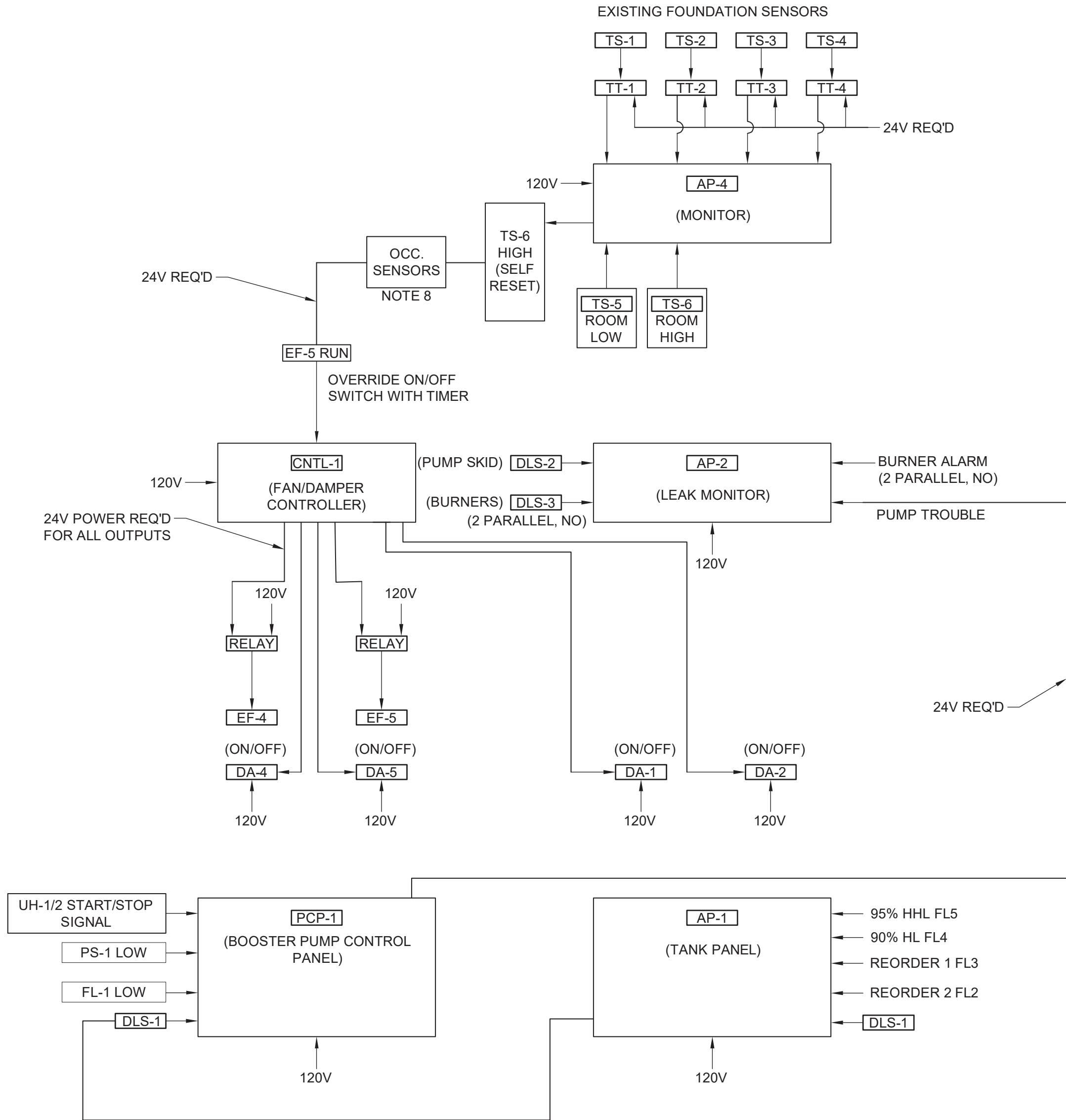
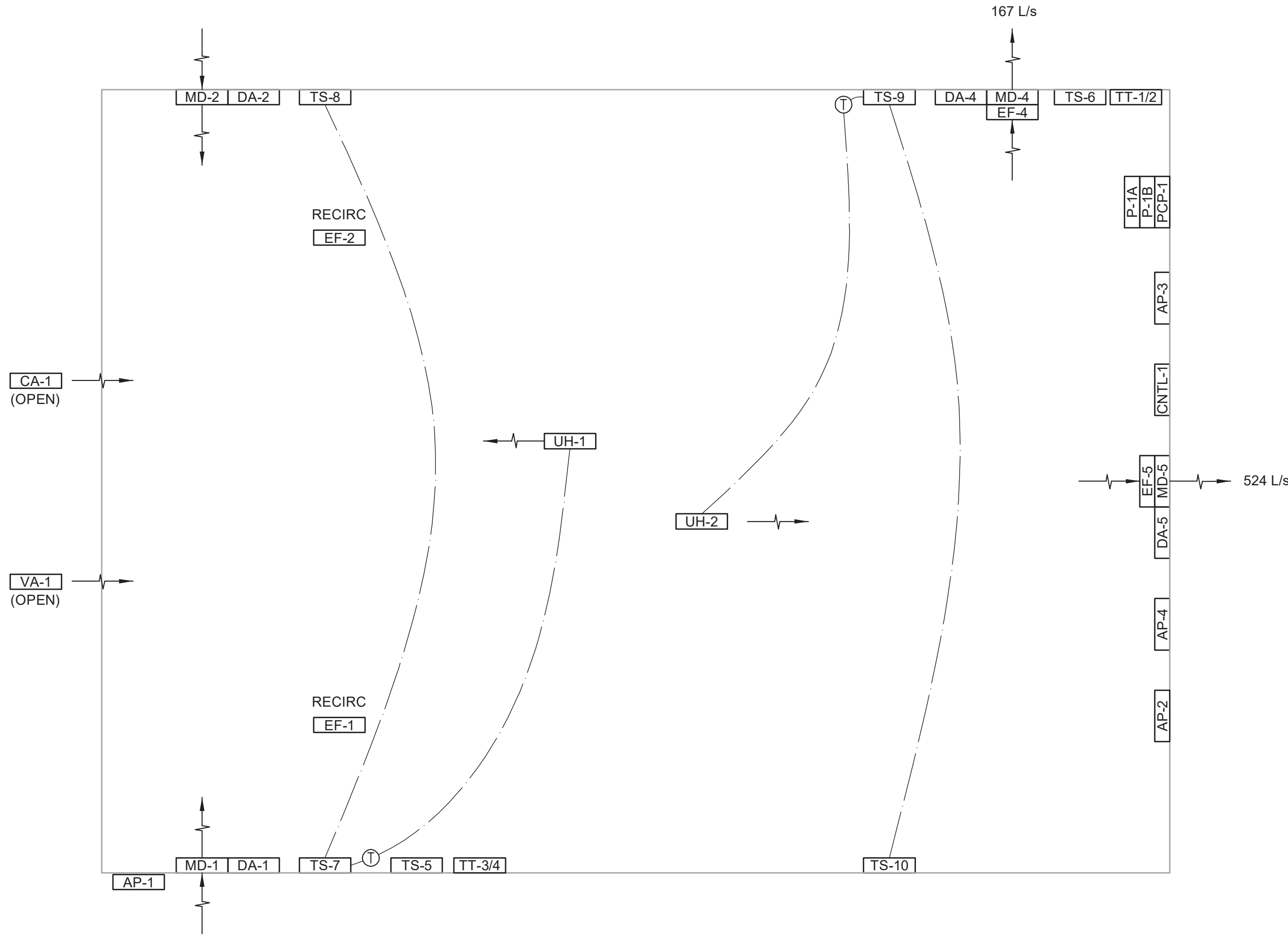
SHEET NUMBER

M-6002

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HVAC CONTROLS

1. UH-1 AND UH-2 ARE CONTROLLED BY THEIR RESPECTIVE THERMOSTATS. THERMOSTATS ARE PROGRAMMABLE, WITH NORMAL SETPOINTS AT 5°C WITH FOUR TIME BLOCKS SET AT 00:30, 06:30, 12:30, AND 18:30. SCREEN IS PARTIALLY LOCKED TO ALLOW ONLY TEMPORARY MANUAL OVERRIDE OF TEMPERATURE - "HOLD UNTIL" AND "HOLD" BUTTONS ARE NOT TO BE PRESSED (SIGN REQUIRED), WITH MANUAL OVERRIDE TEMPERATURE WILL AUTOMATICALLY RETURN TO 5°C AT THE NEXT TIME BLOCK (I.E. MAXIMUM 6 HOURS). EACH THERMOSTAT HAS TWO TEMPERATURE SENSOR LOCATIONS WIRED IN PARALLEL FOR AVERAGING.
2. AP-4 MONITORS THE FOUR FOUNDATION THERMISTORS AND ALARMS AT >2°C (PRELIMINARY SETTING). AP-5 MONITORS ROOM TEMPERATURE SENSOR TS-5 WHICH ALARMS AT <1°C (PRELIMINARY SETTING) WITH A TIME DELAY OF 10 MINUTES (CONTRACTOR TO PROVIDE JACKET FOR SENSOR AS REQUIRED). AP-5 MONITORS ROOM TEMPERATURE SENSOR TS-6, WHICH ALARMS >15°C WITH A TIME DELAY OF 10 MINUTES (CONTRACTOR TO PROVIDE JACKET FOR SENSOR AS REQUIRED) AND TURNS ON EF-5 UNTIL SELF RESET. A FUEL REORDER AND EQUIPMENT TROUBLE ALARM ARE ALSO PROVIDED. (ALL LOCAL ONLY)
3. NOT USED.
4. FOR VENTILATION, EF-4 FAN RUNS CONTINUOUSLY WITH DA-4 OPENED WHEN ENERGIZED. EF-5 FAN RUNS WHEN OCCUPIED OR TS-6 >15°C, WITH DA-5 OPENED WHEN ENERGIZED.
5. OCCUPANCY SENSORS (SEE E-1001) TURNS ON EF-5, EF-1, AND EF-2, WHICH REMAIN ON FOR 20 MINUTES AFTER FIRST MOVEMENT DETECTED. ANY OCCUPANCY SENSOR DETECTING MOTION WILL TURN EF-5, EF-1, AND EF-2 ON. A MANUAL OVERRIDE SWITCH ON OR OFF IS PROVIDED (ONE FOR EF-5 AND ONE FOR EF-1/2). THE MANUAL OVERRIDE HAS AN ADJUSTABLE OVERRIDE TIMER FROM 30 - 600 MINUTES (I.E. RETURNS TO OCCUPANCE SENSOR CONTROL AFTER).
6. ON CALL FOR HEAT, UH-1 AND/OR UH-2 WILL START THE SELECTED DUTY BOOSTER PUMP P1A OR P1B. THE DUTY PUMP WILL TRIP ON LOW SUPPLY PRESSURE OR LOW LOW FUEL TANK LEVEL, WITH ALARM TO AP-2. A BURNER TROUBLE ALARM (THE TWO BURNER CONTACTS ARE WIRED IN PARALLEL) IS ALSO MONITORED BY AP-2. A DLS-1 ALARM WILL SHUT DOWN P1A/B.
7. AP-4 SHALL BE C/W LED ALARM INDICATOR LIGHTS.



PROJECT

City of Iqaluit
Fire Department
Garage

CLIENT

City of Iqaluit

Building 901, City of Iqaluit, Box 460
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ISSUE/REVISION

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KEY PLAN

PROJECT NUMBER

60642509

SHEET TITLE

FIRE TRUCK STORAGE GARAGE
MECHANICAL
HVAC SCHEMATIC AND CONTROLS

SHEET NUMBER

M-8001

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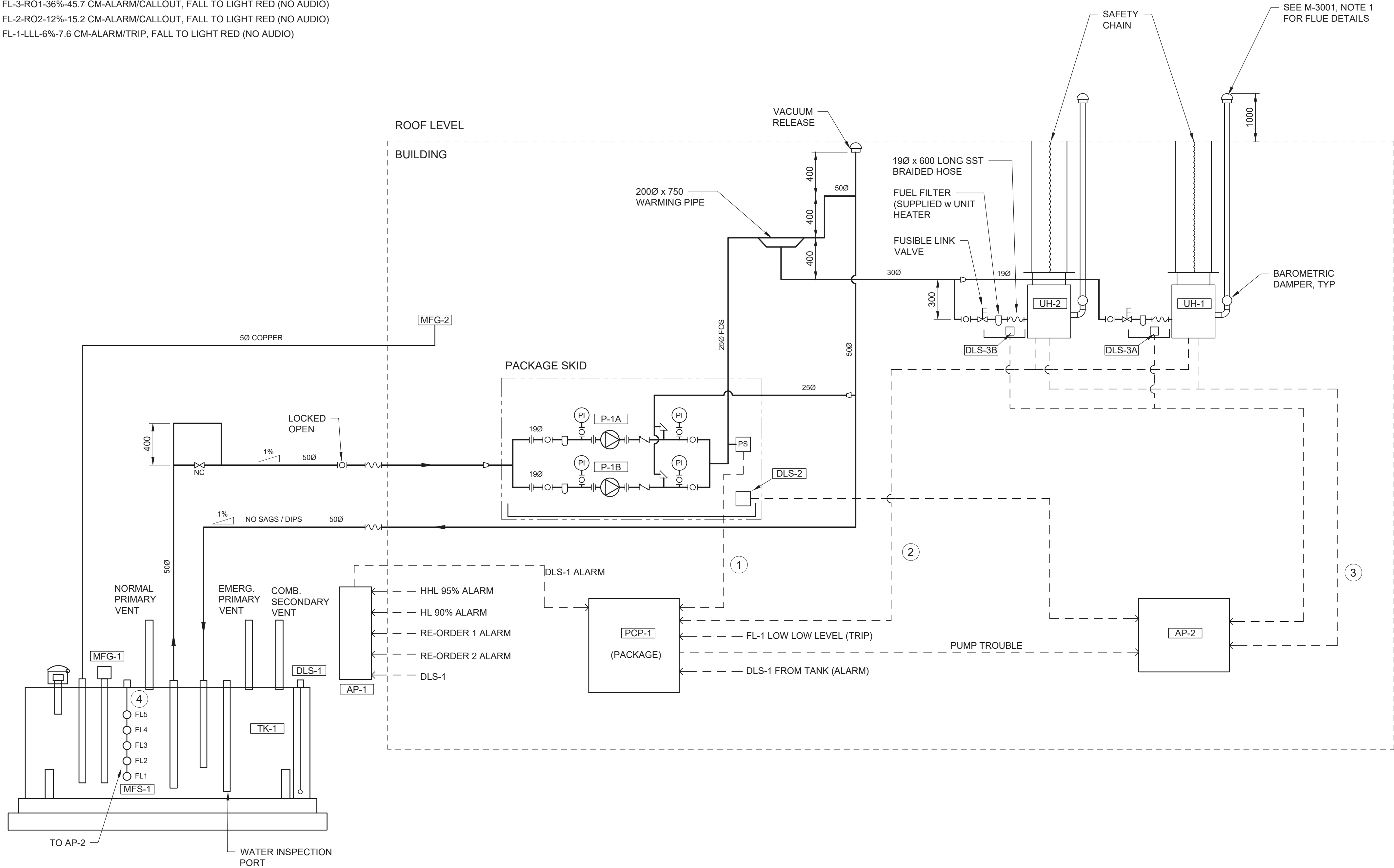
KEYNOTES:

- ① PRESSURE HIGH PUMP TRIP TO BE SET AT 20 PSIG.
PRESSURE LOW PUMP TRIP TO BE SET AT 3 PSIG.
- ② START/STOP FROM PRESSURE SWITCH (SUPPLIED w UNIT HEATER)
- ③ BURNER TROUBLE ALARM (PARALLEL) IS FROM #52040 GENISYS LOCKOUT ALARM SWITCHES (SUPPLIED WITH UNIT HEATER).
- ④

FL-5 – HHL-48%-61.0CM-ALARM, RISE TO LIGHT RED + AUDIO
FL-4 – HL-42%-53.3 CM-ALARM, RISE TO LIGHT RED + AUDIO
FL-3-RO1-36%-45.7 CM-ALARM/CALLOUT, FALL TO LIGHT RED (NO AUDIO)
FL-2-RO2-12%-15.2 CM-ALARM/CALLOUT, FALL TO LIGHT RED (NO AUDIO)
FL-1-LLL-6%-7.6 CM-ALARM/TRIP, FALL TO LIGHT RED (NO AUDIO)

GENERAL NOTES:

1. SEE M-8001 FOR CONTROLS SCHEMATIC
2. SEE M-8002 FOR TK-1 FUEL TANK EQUIPMENT DETAILS



PROJECT

City of Iqaluit
Fire Department
Garage

CLIENT

City of Iqaluit

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Signature *Barry Seiden*

Date May 18, 2022

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KEY PLAN

PROJECT NUMBER

60642509

SHEET TITLE

FIRE TRUCK STORAGE GARAGE
MECHANICAL
FUEL SYSTEM SCHEMATIC

SHEET NUMBER

M-8002

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FAN SCHEDULE									
TAG	SERVICE	MANUFACTURER	MODEL	POWER (W)	ELECTRICAL (V/Ph/Hz)	AIR FLOW (L/s)	STATIC PRESSURE (Pa)	NOMINAL FAN SPEED (RPM)	REMARKS
EF-1	CONSTANT RECIRCULATION	TWIN CITY	DSI-120AE	560	120/1/60	604	63	1170	RUNS CONTINUOUSLY. SUPPLIED WITH VARIABLE SPEED CONTROL, INLET GUARD, VIBRATION ISOLATORS, AND NEMA 4 DISCONNECT W/ OUTLET GUARD
EF-2	CONSTANT RECIRCULATION	TWIN CITY	DSI-120AE	560	120/1/60	604	63	1170	RUNS CONTINUOUSLY. SUPPLIED WITH VARIABLE SPEED CONTROL, INLET GUARD, VIBRATION ISOLATORS, AND NEMA 4 DISCONNECT W/ OUTLET GUARD
EF-3	NOT USED								
EF-4	CONSTANT EXHAUST	TWIN CITY	DSI-080AE	124	120/1/60	167	156	1577	RUNS CONTINUOUSLY. SUPPLIED WITH VARIABLE SPEED CONTROL, INLET GUARD, VIBRATION ISOLATORS, AND NEMA 4 DISCONNECT.
EF-5	CO/NO2 FLUSH EXHAUST	TWIN CITY	DSI-120AE	560	120/1/60	524	156	1247	RUNS WITH CO/NO2 ALARM (MINIMUM 5 MINUTES). SUPPLIED WITH VARIABLE SPEED CONTROL, INLET GUARD, VIBRATION ISOLATORS, AND NEMA 4 DISCONNECT.

CONTROLS SCHEDULE				
TAG	COMPONENT	DETAILS	ELECTRICAL	REMARKS
PS-1	LOW FUEL PRESSURE SENSOR	ASHCROFT A-SERIES MINIATURE WATERTIGHT APAN41P036CS50-15/1 51D	-	FLUID PRESSURE SWITCH -15 PSI TO 15 PSI, SETPOINT 1 PSI ON FALLING PRESSURE. SPDT, CSA, NEMA 6, 13MM FNPT PROCESS CONNECTION, SS WELDED DIAPHRAPM, 900MM LEADS.
TS-1/2/3/4	FOUNDATION TEMPERATURE SENSORS	EXISTING	-	LITTLEFUSE P5502J5
TC-1/2	PROGRAMMABLE THERMOSTAT	HONEYWELL MODEL TH8320	24V	CONTROLS UH-1 AND UH-2 RESPECTIVELY.
TT-1/2	TEMPERATURE TRANSMITTER	DRAGO DT45000	24V	CONVERTS 5000 OHM THERMISTOR SIGNAL (FROM LITTLEFUSE PS502JS) TO 4-20MA (SEND TO AP-4), 24V POWER REQUIRED, CONTRACTOR TO PROVIDE NEMA 4X ENCLOSURE WITH DIN 35MM RAIL MOUNT FOR -40 TO 40 DEG C, TRANSPARENT DOOR.
TT-3/4	TEMPERATURE TRANSMITTER	DRAGO DT45000	24V	CONVERTS 5000 OHM THERMISTOR SIGNAL (FROM LITTLEFUSE PS502JS) TO 4-20MA (SEND TO AP-4), 24V POWER REQUIRED, CONTRACTOR TO PROVIDE NEMA 4X ENCLOSURE WITH DIN 35MM RAIL MOUNT FOR -40 TO 40 DEG C, TRANSPARENT DOOR.
AP-1	FUEL OIL FILL ALARM PANEL	MORRISON BROTHERS 918AC-4200 AI		OUTDOOR PANEL FOR TANK LEVEL MONITORING, 4 INPUTS, 2 RELAY OUTPUTS, cUL LISTED, WITH 95 dB ALARM, 120 V POWER REQUIRED, PERMANENTLY NEATLY LABEL AS PER SCHEMATIC. INPUT FROM MFS-1 FLOATS- FL-4, FL-3, AND FL-2 AND DLS-1 INTERSTITIAL SENSOR.
AP-2	FUEL OIL LEAK MONITORING PANEL	MORRISON BROTHERS 918AC-4200 AI		INDOOR PANEL FOR LEAK/EQUIPMENT MONITORING, 4 INPUTS, 2 RELAY OUTPUTS, cUL LISTED, WITH 95 dB ALARM, 120 V POWER REQUIRED. FOR DLS-3A/B (BURNER TRAYS LEAK SENSORS WIRED IN PARALLEL, NC), DLS-4 (NC), BURNER TROUBLE (WIRED IN PARALLEL FROM BURNER CONTACTS NC), AND PUMP TROUBLE (FROM PCP-1 CONTACT).
AP-4	MONITOR AND AUTODIALER	SENSAPHONE FGD1800CD	120V, 5W	FULLY PROGRAMMABLE MONITORING PANEL WITH EIGHT (INPUTS AND AUTODIALER, ACCEPTS 4-20mA, NO/NC CONTACTS, 10K OHM, AND 2.8K OHM THERMISTOR INPUTS. NEMA 4X, INTERNAL BATTERY BACKUP, INTERNAL MICROPHONE. DURABLE NEAT LABELS AS PER SCHEMATIC.
CNTL-1	VENTILATION CONTROLLER	HONEYWELL T775	120V	NEMA 4X ENCLOSURES AND MODULES AS REQUIRED BY CONTRACTOR.
PCP-1	PUMP CONTROL PANEL	VIKING	STANDARD	STANDARD 120V/1PH/60HZ FUEL PUMP SKID CONTROL PANEL, NEMA 4 ENCLOSURE, CSA, C/W PUMP STARTERS, NON-FUSED DISCONNECT SWITCHES, AND TERMINAL BLOCKS. MUST SATISFY ALL RELEVANT CANADIAN AND NWT REQUIREMENTS.
POWER SUPPLY	24V POWER SUPPLY	BY CONTRACTOR	120V	POWER SUPPLY SIZED TO THE APPLICATION IN A CSA APPROVED DUSTPROOF ENCLOSURE COMPLETE WITH LOCAL DISCONNECT AND UPSTREAM PROTECTION. ENCLOSURE MUST BE INCLUSIVE OF TERMINAL BLOCKS AND ACCESSORIES.

TANK SCHEDULE					
TAG	SERVICE	MANUFACTURER	MODEL	TANK VOLUME (L)	REMARKS
TK-1	FUEL OIL TANK	DTE INDUSTRIES (SUPPLIED BY OWNER) - LOCALLY REGISTERED AND INSPECTED	ULC HORIZONTAL CONTAINED, 100%	3,786	(TANK ONLY SUPPLIED BY OWNER) DOUBLE WALL STEEL DIESEL FUEL TANK, ULC-S601 W/100% CONTAINMENT AND I-BEAM SKID BASE. CONTRACTOR TO PROVIDE AS-BUILT TANK DETAIL DRAWINGS W/FULL DIMENSIONS AND NOZZLE SIZE/USAGES, FOR APPROVAL. PERFORM ALL TESTING, INCLUDING BUT NOT LIMITED TO AIR PRESSURE TESTS AS REQUIRED BY AHJ AND BY CODE, C/W REPORTS AS REQUIRED. CONTRACTOR TO PROVIDE APPURTENANCES AS PER M-8002 AND M-6002 INCLUDING SPILL CONTAINMENT BOX AND CAP, NORMAL AND EMERGENCY VENTS FOR PRIMARY, COMBINATION VENT FOR SECONDARY, PUMP SUPPLY/RETURN 25MM DIPTUBES, MANUAL GAUGE PORT 25MM DIPTUBE, WATER DRAW 25MM DIPTUBE, PROVIDE BASE AND STAIRS AS PER S-7001. PROVIDE COMPLETE SET OF WARNING SIGNS/LABELS AND LEVEL/VOLUME FILL CHART

UNIT HEATER SCHEDULE										
TAG	SERVICE	MANUFACTURER	MODEL	FUEL RATE (LPH)	HEAT INPUT (kW)	HEAT OUTPUT (kW)	AIR FLOW (L/s)	POWER (W)	ELECTRICAL (V/Ph/Hz)	REMARKS
UH-1	WEST END FORCED AIR HEATING	MODINE	POR185B-0101	6.25	68	54	1510	249	115/1/60	FUEL OIL UNIT HEATER C/W VERTICAL LOUVERS, OUTSIDE AIR COMBUSTION KIT, DRAFT REGULATOR, FUEL FILTER, 16400 OIL SAFETY VALVE, 16401 PRESSURE SWITCH (BOOSTER PUMP RELAY) WITH SUNTEC 131405, AND 52040 GENISYS LOCKOUT ALARM.
UH-2	EAST END FORCED AIR HEATING	MODINE	POR185B-0101	6.25	68	54	1510	249	115/1/60	FUEL OIL UNIT HEATER C/W VERTICAL LOUVERS, OUTSIDE AIR COMBUSTION KIT, DRAFT REGULATOR, FUEL FILTER, 16400 OIL SAFETY VALVE, 16401 PRESSURE SWITCH (BOOSTER PUMP RELAY) WITH SUNTEC 131405, AND 52040 GENISYS LOCKOUT ALARM.

PUMP SCHEDULE										
TAG	SERVICE	MANUFACTURER	MODEL	WORKING FLUID	FLOW (L/s)	HEAD (kPa)	SPEED (RPM)	POWER (W)	ELECTRICAL (V/Ph/Hz)	REMARKS
P-1A/B	FUEL OIL BOOSTER PUMP SKID	VIKING PUMP	SKID: 800-SG-40510-DU P EX-O-APP	NO.2 FUEL OIL	0.22	690	1750	373	115/1/60	VIKING DUPLEX FUEL OIL PUMP PACKAGE. MOTOR P/N: 350E.50-60-335TC. COMMON SKID C/W PSV SIMPLEX STRAINER, AND DUAL STAGE 3-100 PSI PRESSURE SWITCH.

FUEL APPURTENANCE SCHEDULE				
TAG	SERVICE	MANUFACTURER	MODEL	REMARKS
DLS-1	TANK INTERSTITIAL LEAK SENSOR	MORRISON BROTHERS	MODEL 924LS	SS FLOAT ACTUATED SENSOR, 1.5" DIAMETER, 1/2" MNPT CONNECTION, ULC, LEAD WIRE LENGTH BY CONTRACTOR.
DLS-2	DIESEL LEAK SENSOR	TRM SENSORS LLC	TRM-DFS-3 TRM-DFS-3-SSHD	P-5 PUMP SKID DRIP TRAY LEAK SENSOR, NORMALLY CLOSED, SIMPLE APPARATUS PER CSA, INSTALL 25 mm SQUARE OF ELECTRICAL TAPE BELOW SENSOR, C/W SPARE ELEMENT, C/W TRM-DFS-3-SSHD HOLD DOWN.
DLS-3A/B	DIESEL LEAK SENSOR	TRM SENSORS LLC	TRM-DFS-3 TRM-DFS-3-SSHD	UH-1/2 BURNER DRIP TRAY LEAK SENSORS, NORMALLY CLOSED, SIMPLE APPARATUS PER CSA, INSTALL 25 mm SQUARE OF ELECTRICAL TAPE BELOW SENSOR, C/W SPARE ELEMENT, C/W TRM-DFS-3-SSHD HOLD DOWN.
MFG-1	LOCAL TK-1 FUEL GAUGE	OPW	200TG-MET	FOR TK-1, 2" MNPT MOUNT COMPLETE WITH 2" DIP TUBE TO 2" FROM BOTTOM OF TANK, GAUGE TO BE VISIBLE FROM FILL POINT, METRIC READOUT.
MFG-2	REMOTE TK-1 FUEL GAUGE	KTECH	277 MIDGET	LEVELOMETER FOR TK-823 MAIN TANK, HAND PUMP TYPE, 50 mm FNPT TANK MOUNT, FIELD RUN 5 mm COPPER TUBING INSIDE CONDUIT AND SUPPORT.
MFS-1	TK-1 MULTILEVEL FLOAT SWITCH	KTECH	FS301-5, PART# FS301SF-5	TK-1 MULTILEVEL FLOAT SWITCH, DIMENSIONS A= 26" B=29" C=32" D=44" E=47", 1/2" OD BRASS STEM, 316SS FLOAT, INSTALLS INTO 50 mm FNPT, CAN/ULC S661, CONTRACTOR TO PROVIDE LOAD CONFIGURATION TO SATISFY OEM MAX. 1.0A AND MAX. 100W CLOSED CIRCUIT.
AP-1	FILL POINT ALARM PANEL	SEE CONTROLS		
AP-2	FUEL EQUIPMENT ALARM PANEL	SEE CONTROLS		
PCP-1	PUMP CONTROL PANEL	SEE CONTROLS		

DUCT ACCESSORY SCHEDULE				
TAG	DESCRIPTION	MANUFACTURER	MODEL	REMARKS
DA-1	DAMPER ACTUATOR FOR MD-1	BELIMO	AMB24-1	16 Nm TORQUE, 15 W, ON/OFF 24V SIGNAL FROM CNTL-1, 7 SEC RUNTIME, C/W ONBOARD 120V/24V TRANSFORMER.
DA-2	DAMPER ACTUATOR FOR MD-2	BELIMO	AMB24-1	16 Nm TORQUE, 15 W, ON/OFF 24V SIGNAL FROM CNTL-1, 7 SEC RUNTIME, C/W ONBOARD 120V/24V TRANSFORMER.
DA-4	DAMPER ACTUATOR FOR EF-4	BELIMO	AMB24-1	16 Nm TORQUE, 15 W, ON/OFF 24V SIGNAL FROM CNTL-1, 7 SEC RUNTIME, C/W ONBOARD 120V/24V TRANSFORMER.
DA-5	DAMPER ACTUATOR FOR EF-5	BELIMO	AMB24-1	16 Nm TORQUE, 15 W, ON/OFF 24V SIGNAL FROM CNTL-1, 7 SEC RUNTIME, C/W ONBOARD 120V/24V TRANSFORMER.
MD-1	FLUSH AIR INTAKE SOUTH	RUSKIN	TED-50	600W X 450H (ID FRAME), 150 mm T-FLANGE FRAME (FRONT AND BACK), PARALLEL ALUMINUM BLADES, CLASS 1A AT 1" W.G., CONTRACTOR TO FABRICATE FRAME IF REQUIRED.
MD-2	FLUSH AIR INTAKE NORTH	RUSKIN	TED-50	600W X 450H (ID FRAME), 150 mm T-FLANGE FRAME (FRONT AND BACK), PARALLEL ALUMINUM BLADES, CLASS 1A AT 1" W.G., CONTRACTOR TO FABRICATE FRAME IF REQUIRED.
MD-4	EF-4 DAMPER	RUSKIN	TED-50	300W X 300H (ID FRAME), 150 mm T-FLANGE FRAME (FRONT AND BACK), PARALLEL ALUMINUM BLADES, CLASS 1A AT 1" W.G., CONTRACTOR TO FABRICATE FRAME IF REQUIRED.
MD-5	EF-5 DAMPER	RUSKIN	TED-50	400W X 400H (ID FRAME), 150 mm T-FLANGE FRAME (FRONT AND BACK), PARALLEL ALUMINUM BLADES, CLASS 1A AT 1" W.G., CONTRACTOR TO FABRICATE FRAME IF REQUIRED.



PROJECT

City of Iqaluit
Fire Department
Garage

CLIENT

City of Iqaluit

Building 901, City of Iqaluit, Box 460
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867.979.5600 tel 867.979.5922 fax
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CONSULTANT

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NOTICE:
THE EXISTENCE, LOCATION AND ELEVATION OF UTILITIES AND/OR CONCEALED STRUCTURES AT THE PROJECT SITE ARE NOT GUARANTEED BY AECOM CANADA LTD.

THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE EXISTENCE, LOCATION AND ELEVATION OF ALL SUCH UTILITIES AND/OR STRUCTURES AND IS RESPONSIBLE FOR NOTIFYING THE APPROPRIATE COMPANY, DEPARTMENT OR PERSON(S) OF ITS INTENTION TO CARRY OUT ITS OPERATIONS.

REGISTRATION



PERMIT TO PRACTICE
AECOM CANADA LTD.

Signature *Benny Gelsford*

Date May 18, 2022

PERMIT NUMBER: P639

NWT/NU Association of Professional Engineers and Geoscientists

ISSUE/REVISION

2	2022-05-18	RE-ISSUED FOR TENDER
1	2021-09-08	ISSUED FOR REVIEW
I/R	DATE	DESCRIPTION

KEY PLAN

PROJECT NUMBER

60642509

SHEET TITLE

FIRE TRUCK STORAGE GARAGE
MECHANICAL
HVAC SCHEDULES

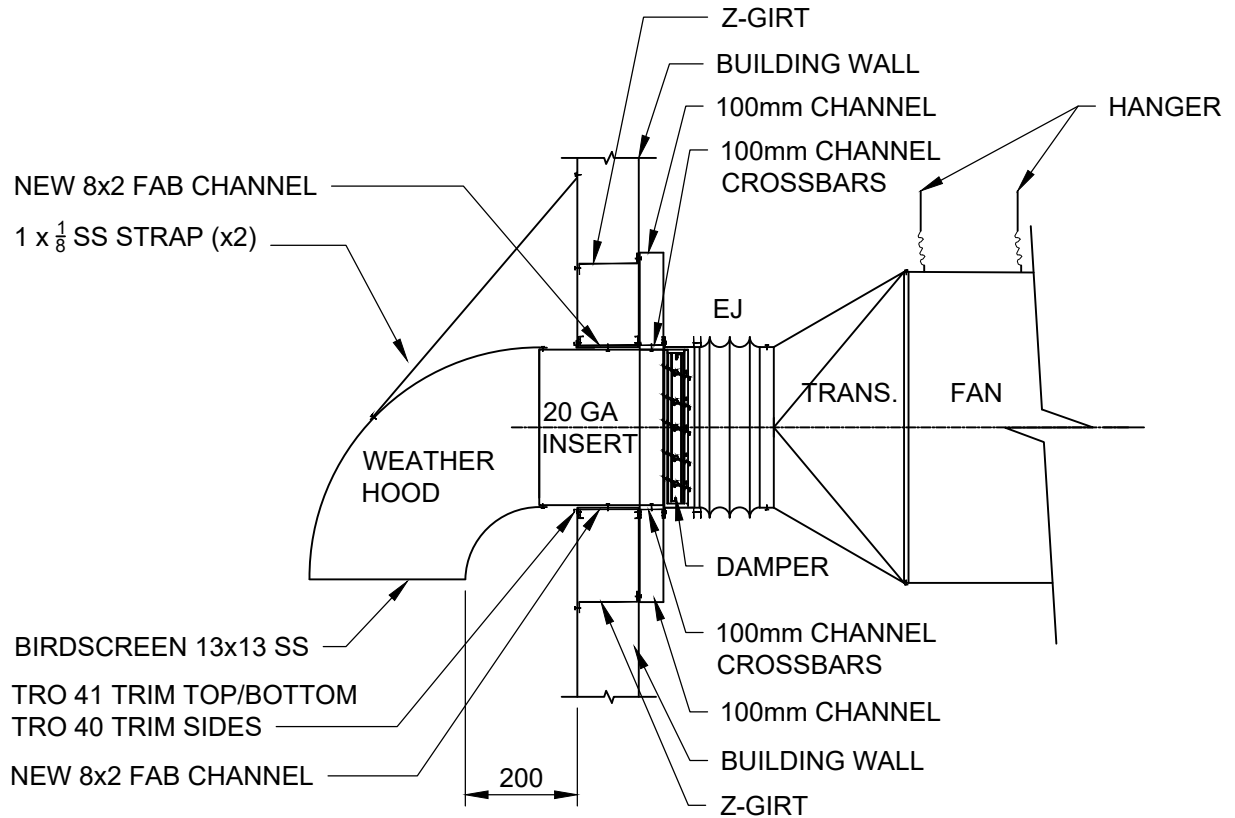
SHEET NUMBER

M-9001

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NOTES:

1. FASTENERS ON VERTICALS NOT SHOWN.
2. CONTRACTOR TO ADAPT FOR VARIOUS HOOD DAMPER SIZES.
3. PROVIDE FLASHING FOR INTERIOR TOP/BOTTOM OF WALL LINER.



REFERENCE DRAWING: N/A

0	2022-05-18	ISSUED FOR INFORMATION
I/R	DATE	DESCRIPTION

1.0 GENERAL

1.1 General Requirements

- .1 The work covered by this Contract shall include, but shall not be limited to, the furnishing of all materials, equipment, tools, implements, machinery, supplies, temporary lighting, water, heating, scaffolding, shoring, temporary works, dewatering, transportation, labour and superintendence necessary for the construction of the work as herein specified and shown on the drawings.
- .2 The complete work under this Contract shall be governed by the dictates of good practice and shall be complete in all details of materials and methods even if not minutely specified.
- .3 The work shall be properly coordinated with the requirements of all work specified in other sections.
- .4 The work includes testing as specified and assistance with start-up and placing of the work in operation, ready for use by the Owner.

1.2 Description of Work

- .1 The Contractor shall supply all materials necessary for the construction of the work as herein specified or shown on the drawings and other specification sections attached.

1.3 Work Sequence

- .1 Contractor is to verify a mutually acceptable schedule and work strategy with the owner prior to tender bid submission. Bid will therefore be assumed to include acceptable terms. Owner will turn over building completely during construction, subject to pre-bid verification.
- .2 Coordinate for required sea lifts.
- .3 Coordinate with Electrical contractor for power hookups to mechanical equipment.
- .4 Coordinate with engineer for as-built drawing and AHJ for testing of the owner supplied fuel tank (provide all field requirements).

1.4 Definition of Trades

- .1 For convenience of reference only, the specifications are separated into sections identified by title and a six-digit numbering system.
- .2 The separation into sections is not intended to identify responsibility of work.
- .3 Responsibility as to which trade provides required materials or articles of work rests solely with the Contractor.
- .4 In the case of a dispute, it is the Contractor's responsibility to determine which subtrade supplies and installs required materials or equipment.
- .5 Extras will not be considered for differences in interpretation of the specifications as to which trades do the work.

1.5 Mobilization and Demobilization

- .1 Mobilization shall include transportation to the site of the Contractor's labour, equipment, and materials in readiness to start work and the Contractor shall allow for all his costs in the bid and force account rates.
- .2 Demobilization shall include the dismantling and removal from the site of all of the Contractor's equipment and materials, cleanup of the site, and transportation of labour from the site and the Contractor shall allow for all his costs in the unit rates.

1.6 Permits, Licenses, Certificates and Fees

- .1 Contractor shall obtain and pay for all permits, licenses and all fees required for performance of the work.

1.7 Construction Timeline

- .1 The work shall be substantially complete by September 16, 2022 unless otherwise agreed by Owner in writing.
- .2 Completion of fully operational building and all internal components is required by October 14, 2022 unless otherwise agreed in writing.

1.8 Work Schedule

- .1 Provide a construction work schedule within ten (10) working days after Contract award,
- .2 Work schedule shall be a horizontal bar chart schedule in weekly increments showing anticipated progress stages, significant milestones, inspections by outside parties, equipment commissioning, and final completion of work within time period required by Contract and Bid documents.
- .3 Submit a revised work schedule with each application for payment. The work schedule shall indicate progress of each activity to date of submission of schedule. Also include a narrative report to describe problem areas, anticipated delays, and impact on the schedule along with recommended corrective actions with effects.
- .4 Halfway between monthly reports, attend 1 hour update meetings with Owner Representatives. Other interim reviews based on work schedule issues may be conducted as determined by the Engineer and Owner's Representative.

1.9 Contract Documents

- .1 Documents Provided
 - .1 The Owner will provide, without charge, a .pdf copy of the drawings and specifications. Contractor will be responsible to make as many copies of the Contract Documents or parts thereof as are reasonably necessary for the performance of the work.
- .2 Discrepancies/Omissions
 - .1 Notify the Owner's Representative and Engineer immediately upon discovery of discrepancies or omissions in the Contract Documents or of any doubt as to the meaning or intent of any part thereof.

- .2 If the Contractor decides to proceed with the work when an error is suspected or when there is doubt as to the interpretation of the project requirements, this constitutes Contractor's full acceptance of any cost associated with any remedial work which may be required.

1.10 Examination of Site

- .1 Prior to commencing actual construction, check field conditions to obtain actual dimensions required to ensure correct execution of the work, and notify the Owner's Representative and Engineer, in writing, of all matters which could affect proper execution of the work.
- .2 Commencement of construction shall constitute acceptance of existing conditions and verification of dimensions.
- .3 No extra charges will be allowed for work resulting from conditions which would have been evident upon a thorough examination of the site.

1.11 Contractor's Use of Site

- .1 Contractor shall have full use of project site for execution of the work during construction period, as follows:
 - .1 Provide site access for Owner and Owner's Representatives (e.g. PM, engineer, inspector), subject to Contractor safety requirements.
 - .2 Maintain good housekeeping indoors and outdoors, including keeping bay doors and mandors clear.
 - .3 At all times cooperate with the Owner and Owner's Representatives.
- .2 The Contractor shall be responsible for site security for the duration of the Contract. Where security is reduced by work of Contract, provide temporary means to maintain security.
- .3 Obtain and pay for use of additional storage or work areas as required by contractor.

1.12 Coordination with Occupants

- .1 Owner will not occupy the premises during the construction period.
- .2 Coordinate with Electrical and other incidental contractors as required.

1.13 Project Meetings

- .1 The Owner's Representative will arrange and set times for project meetings and will record and distribute minutes.
- .2 The Contractor's site superintendent and representatives of the subcontractors shall attend the meetings at the request of the Owner's Representative, either on site or via teleconference as appropriate.

1.14 Photographs and Daily Reports

- .1 The Contractor shall provide site photos and videos as requested by the Owner's Representative.

- .2 The Contractor shall provide monthly reports including a written summary of work completed and at least six (6) photos.

1.15 Removal and Disposal of Materials

- .1 Demolished materials to be removed, hauled and disposed of at the Contractor's expense. Consult with Owner's Representative as appropriate for potential salvage of any demolished materials.
- .2 Obtain all necessary approvals and/or permits, from the Owner's Representative of the disposal site, and any governing authority prior to dumping any materials.

1.16 Water, Fuel and Chemicals

- .1 The Owner's Representative will supply water, fuel and/or chemicals necessary for initial flushing, pressure testing, and equipment testing.
- .2 The Contractor shall supply additional water, fuel and/or chemicals required for repeat testing due to failed tests. The Contractor may make an agreement with the Owner's Representative in writing for the payment of additional water, fuel and chemicals.
- .3 The Contractor shall provide the initial charges of oil, grease, and other materials necessary for equipment start-up.

1.17 Warranty Period

- .1 The warranty period for work completed under this contract will be one (1) year from the date of Construction Completion Certificate. Contractor shall cover labour, materials, tools/equipment, and travel costs as required to correct defects as required during the warranty period. Defects include reasonable deficiencies in function and workmanship.
- .2 Equipment warranties shall be registered in the Owner's name, and warranty certificates are to be provided to the owner (e.g. in Operations and Maintenance Manual) as available.

1.18 Contractor's Project Staff

- .1 Should key personnel from the Contractor's team, including the Project Manager and the Superintendent(s), no longer be available to perform the work on behalf of the Contractor due to illness or discontinued employment with the Contractor's firm, the Contractor will provide three alternatives for consideration as replacement for that person. The Owner's Representative will select the replacement from the alternatives.
- .2 Key personnel from the Contractor's team that are still in the Contractor's employment cannot be assigned full-time to another project prior to Construction Completion without written consent of the Owner's Representative.

1.19 CASH ALLOWANCE – NOT USED

2.0 PRODUCTS - NOT USED

3.0 EXECUTION - NOT USED

END OF SECTION

1.0 GENERAL

- .1 This specification includes installation of the Mechanical Heating/Ventilation system and Fuel System with associated piping.
- .2 The Contractor shall read and be governed by the General Provisions, Special Provisions, Instructions to Tenderers, Addenda, Tender Notice and Tender Form and Contract Agreement of the complete specification for this project.
- .3 The Contractor shall conduct all necessary and sufficient investigations and obtain all necessary information to properly prepare and submit its tender.
- .4 The Contractor shall verify information contained in the tender documents. The Engineer and his employees are not responsible for any errors or omissions within the tender documents.
- .5 The responsibility and scope of each sub-trade rests solely with the General Contractor. Extras will not be considered based on the grounds of difference in interpretation of specifications as to which trade involved shall provide certain specialties or materials.
- .6 Only recognized Mechanical Contractors regularly engaged in heating, ventilation, sheet metal, plumbing, equipment installation, and potable water piping employing accredited journeymen trades people shall be permitted to perform this work. Engage Sub-Contractors to perform specialty works where required or specified herein.
- .7 Arrange work in cooperation with other trades in the building. This cooperation should result in minimal interference with other work being carried on in the building. Co-operate with the other Contractors to get all equipment, pipes, ducts, conduit, etc., installed in the best location as per drawings and operability/maintainability.
- .8 Contract documents of this Division are approximately to scale and may be diagrammatic as noted, unless detailed otherwise. They establish scope, material and installation quality and are not detailed installation instructions. Follow manufacturer's recommended installation details and procedures for equipment; supplemented by details given herein and on the plans, subject to final approval of the Engineer.

1.2 Intent

- .1 Provide for a complete and operational Mechanical system with facilities described herein and in complete accord with all applicable codes and ordinances.
- .2 Provide all labour, material, tools, and equipment required to install, test, commission, and place into operation a complete operational Mechanical system.
- .3 These specifications are to be considered as an integral part of the drawings, which accompany them; neither the drawings nor the specification shall be used alone. Any item omitted from one but which is mentioned or implied in the other shall be considered as properly and sufficiently specified.
- .4 Inform the Engineer immediately in writing of any discrepancies between the plans, site conditions, drawings or specifications. Any work done after the discovery shall be at the Contractor's risk until authorized. For discrepancies creating doubt as to the true intent or meaning, a ruling as to which shall govern shall be obtained from the Engineer.

- .5 Failure to do so shall render the Contractor liable for the expense of the installation of the more expensive alternate. Where discrepancies appear in catalogue numbers, provide the article in accordance with system requirements and to the standard of the specification.

1.3 Reference Standards

- .1 All Codes and Standards referred to in this Section are the latest edition of the Codes and Standards in effect at the time of tendering this project.
- .2 All Mechanical, including equipment, piping, controls, etc. must comply in all respects with requirements of all relevant codes and regulations, including but not limited to: Nunavut Safety Act and Regulations, CSA B51, Good Building Practices Guidelines, Canadian Plumbing Code, Canadian Electrical Code, National Building Code, and National Fire Code – latest editions.
- .3 All electrical items associated with mechanical equipment are to be CSA (or equivalent agency certified electrically) or bear a stamp to indicate special Electrical Safety Authority approval.

1.4 General Installation

- .1 Install the equipment in locations as shown, generally within 100 mm of specified location unless interference with existing building is an issue. In general, 900mm front access is required for equipment, with a minimum of 600mm sides/behind equipment, except as specifically indicated on layout drawings (e.g. fuel pump skid tight to back wall). Remove and replace improperly installed equipment to satisfaction of the Engineer at no extra cost. Provide access (including as specified in installation manuals) for servicing, inspection, and removal of serviceable components.
- .2 Products specified in the Mechanical Equipment Schedule have been selected to establish a performance and quality standard, and usually also a dimensional standard. Therefore, all equipment specified in the Mechanical Equipment Schedule is generally to be ordered as shown including model number. Detailed model number is to be verified with supplier and contractor requirements for availability and connections – identify any deviations with shop drawing submittals.
- .3 Any requests for alternates may be considered if equivalent in performance, features, quality, and dimensions. However, even if approved, the Contractor will be responsible for any/all additional costs resulting from the change including corrections to intended access, function, and/or performance.
- .4 The Mechanical Drawings show the intended locations/routing of equipment/piping/ductwork. The fuel piping is shown diagrammatically and is to be run neatly by contractor with no low points except as shown (e.g. leg at tank). Contractor to advise of any proposed deviations from this prior to fabrication.
- .5 In case of any clashes or field obstructions not shown on the Mechanical Drawings, contractor is to provide all fittings, offsets, transitions and similar items required to accommodate.
- .6 General piping design pressure is 690 kPag at -40 to +40 °C. All equipment, materials, and sealing elastomers are to satisfy design pressure/temperature and fuel oil service. Submit support documents for review.

- .7 Where applicable, Contractor is responsible for Quality Assurance of any shop (e.g. "Warming Pipe" and site pipe welding as per ASME B31.9. Contractor shall submit QA documentation including qualifications, NDE, and hydrotest records. Contractor shall engage a third party inspection company to provide 100% visual testing of welded joints and 5% MPT.
- .8 Contractor is responsible for all logistics such as rigging in new equipment, and lifting/access at heights. Contractor is responsible for protecting floors, structures, equipment, etc., from damage, and for repairing any associated damage.
- .9 Contractor is responsible to ensure that all equipment is mounted/levelled to within manufacturer tolerances (minimum +/- 0.1% where none is provided). Contractor shall ensure that equipment is installed according to manufacturer specification installation instructions and good practice. This includes final leveling and bolting of equipment to housekeeping pads or baseplates.
- .10 Contractor is responsible for obtaining all permits required for the Work, and scheduling satisfying the inspector and/or Authority Having Jurisdiction requirements.

1.5 Action and Informational Submittals

- .1 Product Data:
 - .1 Submit product literature and data sheets, as well as manufacturer's installation/operating/maintenance instructions, for the equipment listed on the equipment schedule M-9001, M-6002, and M-1001. Drawings and datasheets to show:
 - .1 Detailed technical specifications and features
 - .2 Outline drawings, including connections, mounting, and access panels.
 - .3 Operating and maintenance clearances.
 - .4 Performance curves/tables, with identified operating point.
 - .5 Acoustical sound power data, where applicable.
 - .6 Manufacturer to certify current model production.
 - .7 Certification of compliance to applicable codes.
 - .2 Shop drawings:
 - .1 Where applicable for prefabrication, such as Warming Pipe:
 - .1 Isometric or orthographic drawing/sketch showing dimensions, components, and key specifications (e.g. rating, material).
 - .2 Routing, clearances, elevations, connections, and supports.
 - .3 Termination points and connections.
 - .2 Where required onsite (e.g. structural base/lugs modifications for lifting), submit drawings stamped and signed by professional engineer registered or licensed in Nunavut, Canada.
- .3 Quality Assurance Records:
 - .1 Boiler and vessels: Not Applicable.
 - .2 Offsite and onsite piping fabrication:
 - .1 Any shop certificates (e.g. ISO).
 - .2 As applicable: Welder qualifications, Weld Procedure Specifications (WPS), and Procedure Qualification Records (PQR).
 - .3 As applicable: Non Destructive Examination records.

- .4 Pressure Testing records.
- .5 Provide the above in a final data booklet.

1.6 Closeout Submittals.

- .1 Operation and Maintenance Data: submit operation and maintenance data for all equipment listed in the mechanical schedule and in Section 1.1.1.1 above.
 - .1 Operation and maintenance manual approved by, and final copies (1 electronic, 3 hard copies) deposited with Owner's Representative before final inspection.
 - .2 Operation data to include:
 - .1 As-built HVAC and fuel system schematics, complete with sequence of operations notes updates.
 - .2 Manufacturers' description of equipment and their controls.
 - .3 Manufacturers' equipment operating instructions, including for various loads/seasons.
 - .4 Manufacturers' equipment description of actions to be taken in event of equipment failure.
 - .3 Maintenance data to include:
 - .1 Servicing, maintenance, operation and trouble-shooting instructions for each item of equipment.
 - .2 Data to include schedules of tasks, frequency, tools, and task time.
 - .4 Performance data to include:
 - .1 Equipment manufacturer's performance datasheets with point of operation as left after commissioning is complete.
 - .2 Equipment performance verification test results.
 - .3 Special performance data as specified.
 - .4 Testing, adjusting and balancing reports.
 - .5 Provide unit heater manufacturer's installation inspection report.
- .2 Approvals:
 - .1 Submit 1 electronic copy of draft Operation and Maintenance Manual to Owner's Representative for approval. Submission of individual data will not be accepted unless directed Owner's Representative.
 - .2 Make changes as required and re-submit as directed by Owner's Representative.
- .3 Additional data:
 - .1 Prepare and insert into operation and maintenance manual additional data when need for it becomes apparent during specified demonstrations and instructions.
- .4 Site records:
 - .1 Owner's Representative will provide 1 set of reproducible mechanical drawings. Provide sets of white prints as required for each phase of work. Mark changes as work progresses and as changes occur. Include changes to existing mechanical systems, control systems and low voltage control wiring.
 - .2 Transfer information weekly to reproducibles, revising reproducibles to show work as actually installed.
 - .3 Use different colour waterproof ink for each service.
- .4 Make As-Built drawings available for reference purposes and inspection:
 - .1 Prior to start of field commissioning and testing, finalize production of as-built drawings.
 - .2 Identify each drawing in lower right hand corner in letters at least 12 mm high as follows: "AS BUILT DRAWINGS: THIS DRAWING HAS BEEN REVISED TO SHOW MECHANICAL SYSTEMS AS INSTALLED" (Signature of Contractor) (Date).

- .3 Submit to Owner's Representative for approval and make corrections as directed.
- .5 Submit completed reproducible as-built drawings with Operating and Maintenance Manuals.

1.7 Maintenance Material Submittals

- .1 Furnish spare parts as follows:
 - .1 Four spare oil filter cartridges.
 - .2 Other spare parts as recommended by equipment manufacturers.
- .2 Provide one set of special tools required to service equipment as recommended by manufacturers.
- .3 As applicable, furnish one commercial quality grease gun, grease and adapters to suit different types of grease and grease fittings.

1.8 Delivery, Storage and Handling

- .1 Deliver, store and handle materials in accordance with Section with manufacturer's written instructions and good practice to preserve in new undamaged condition.
- .2 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address.
- .3 Storage and Handling Requirements:
 - .1 Store materials in dry location, off ground, indoors and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
 - .2 Store and protect all equipment and materials from nicks, scratches, and blemishes.
 - .4 Replace defective or damaged materials with new.

2.0 PRODUCTS

2.1 Materials

- .1 General
 - .1 Materials and equipment installed shall be new, full weight and of the best quality specified. Use same brand or manufacturer for each specific application. Statically and dynamically balanced rotating equipment is required for minimum vibration and low operating noise level. Provide vibration isolation for equipment where required.
 - .2 Each major component of equipment shall have manufacturer's name, address, catalogue and serial number in a conspicuous place.
 - .3 Use best practice and install materials and equipment in a neat and skillful manner by competent specialists and licensed tradesmen, in accordance with manufacturers printed installation instructions.
 - .4 Replace materials or workmanship below specified quality and relocate work wrongly placed to the satisfaction of the Engineer.

.2 HVAC Equipment – see 23 05 00 - Common Work Results for HVA

.3 Plumbing – Fuel Oil System

.1 Fuel Oil Pump Skid

.2 Fuel System Appurtenances

.3 Alarm Panels and Sensors

3.0 EXECUTION

3.1 Scope of Construction

.1 General

.1 Install new unit heaters, fuel system, fans, ducting, and controls as shown in Mechanical drawing package, to provide a complete and functional system in all respects. Function is to be as described on M-8001 and other drawings.

.2 Locate and provide holes and sleeves, cutting and fitting required for Mechanical work. Relocate improperly located holes and sleeves at no extra cost.

.3 Drill for expansion bolts, hanger rods, brackets and supports.

.4 Do no cutting or burning of structural members or building frame without obtaining prior written approval from the Engineer.

.5 Provide openings and holes required in concrete or precast members for Mechanical work. Cast holes larger than 100 mm in diameter. Field cut holes smaller than 100 mm.

.6 All patching of finished construction of the building shall be performed by the qualified trades, utilizing the same finish materials to match construction.

.7 Materials and equipment installed shall be new, full weight and of the best quality specified. Use same brand or manufacturer for each specific application. Provide vibration isolation for equipment where required.

.8 Each major component of equipment shall have manufacturer's name, address, catalogue and serial number in a conspicuous place.

.9 Use best practice and install materials and equipment in a neat and skillful manner by competent specialists and licensed tradesmen, in accordance with manufacturers printed installation instructions.

.10 Replace materials or workmanship below specified quality and relocate work wrongly placed to the satisfaction of the Engineer.

.11 All demolished equipment is to be disposed or turned over as per Owner instructions.

.2 Equipment – Fuel Oil System

.1 Fuel Oil Storage Tank

.1 Fuel oil storage tank is provided by Owner. Contractor to provide detailed as-built drawing including dimensions and nozzle size/location/usage to Owner/Engineer within 2 weeks of award, for tank appurtenance installation purposes (and registration). Contractor to provide air test and any other AHJ requirements to put tank in service.

.2 The required tank connections are as shown on schematic and equipment list.

.3 Install pad, stairs, bridge, post, bollards etc as per S-7001 and M-6002..

.4 Install/connect electrical grounding wire (see Electrical).

- .2 Fuel Oil Booster Pump Skid and Control Panel.
 - .1 Install skid on floor, about 1200 from building corner.
 - .2 Install PCP-1 about 1200 off floor (as per electrical code). If space permits, install PCP-1 about 900 to the right of pump skid, otherwise install it about the pump skid. Provide firm mounting bracket/stand for PCP-1.
 - .3 Install bollards in front of pump skid as shown in drawings.
- .2 Fuel System Appurtenances – all devices to be provided as shown on M-9001 Mechanical Schedule and M-8002 Fuel Oil Schematic.
- .3 Control Panel (CNTL-1) and Alarm Panels (AP-1)
 - .1 Mount panels where shown on the Drawings, about 1200 AFF. Coordinate power hookups to panels with electrical contractor. Provide firm mounting brackets/stands.
 - .2 Provide all control voltage power including transformers, distribution panels, and run wiring/conduit as required. All conduit and cabling is to as per CEC, neatly run and coordinated with piping, and with clearances to allow foot traffic both inside and outside. Outdoor conduit to be weather sealed.
 - .3 Program, commission, and function test all controls and panels as per OEM instructions to satisfy schematic functions as shown on schematics/layouts.

3.2 Examination

- .1 Verification of Conditions: verify that conditions of substrate previously installed under other Sections or Contracts are acceptable prior to proceeding.
- .2 Restore to new condition, finishes which have been damaged.

3.3 System Cleaning

- .1 Clean interior and exterior of all systems including strainers.

3.4 Field Quality Control

- .1 Do HVAC system testing as required by ASHRAE and Good Building Practice for Northern Facilities, whichever is more stringent. Manufacturer's Field Services:
 - .1 Obtain written report from fuel oil pump skid manufacturer verifying compliance of Work, in handling, installing, applying, protecting and cleaning of product and submit Manufacturer's Field Reports.
 - .2 Provide manufacturer's field services consisting of product use recommendations and recommended site supervision for inspection of product installation in accordance with manufacturer's instructions.

3.5 Demonstration

- .1 Owner's Representative will trial use equipment and systems prior to acceptance. Supply labour, material, and instruments required for this trial usage.
- .2 Supply tools, equipment and personnel to demonstrate and instruct operating and maintenance personnel in operating, controlling, adjusting, trouble-shooting and servicing of all systems and equipment during regular work hours, prior to acceptance.
- .3 Use operation and maintenance manual, as-built drawings, and audio visual aids as part of instruction materials.

- .4 Instruction duration time requirements as specified in appropriate sections.
- .5 Owner's Representative will video record these demonstrations for future reference.

3.6 Cleaning

- .1 Progress Cleaning: clean in accordance with Section 01 77 00- Contract Closeout.
 - .1 Leave Work area clean at end of each day.
- .2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 77 00- Contract Closeout.

3.7 Protection

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

END OF SECTION

1.0 GENERAL

1.1 Action and Informational Submittals – See 21 05 01 Common Work Results for Mechanical

1.2 Closeout Submittals – See 21 05 01 Common Work Results for Mechanical.

1.3 Maintenance Material Submittals – See 21 05 01 Common Work Results for Mechanical

1.4 Delivery, Storage and Handling – See 21 05 01 Common Work Results for Mechanical

1.5 TAB Report

- .1 TAB report to show results in SI units and to include:
 - .1 HVAC layout drawings.
 - .2 HVAC schematic.
- .2 Submit copies of TAB Report to Owner's Representative for verification and approval.

2.0 PRODUCTS

2.1 Materials

- .1 Equipment:
 - .1 Unit Heaters and stacks
 - .2 Exhaust and Recirculation Fans
 - .3 Fuel Oil Pump Skid with Control Panel
 - .4 Fuel System Appurtenances
 - .5 Motorized Dampers with Damper Actuators.
 - .6 Alarm Panels and Sensors
 - .7 Controller CNTL-1
 - .8 Controls Power Supplies
- .2 Ventilation
 - .1 Supply and Return Air Grilles
 - .2 Ductwork and Insulation
 - .3 Equipment and Piping/Duct Supports
 - .4 Air Intake and Exhaust Hoods with wall inserts.

3.0 EXECUTION

3.1 Examination

- .1 Verification of Conditions: verify that conditions of substrate previously installed under other Sections or Contracts are acceptable.
 - .1 Visually inspect substrate.
 - .2 Inform Owner's Representative of unacceptable conditions immediately upon discovery.
 - .3 Proceed with installation only after unacceptable conditions have been remedied and after receipt of written approval to proceed from Owner's Representative.

3.2 Unit Heaters and Stacks

- .1 Provide the roof cross connector structural steel required to support the unit heaters in the locations shown – consult with building supplier. Submit shop drawings.
- .2 Provide a safety chain for each unit heater.
- .3 Provide a drip pan under each burner as shown in M-1001.

- .4 Provide unit heaters' oil safety valve, pressure switch, and lockout alarm as per M-9001. Note that an outside air combustion kit is not required.
- .5 Provide barometric damper and Selkirk PS-IPS-304-C2 200mm diameter stacks as per M-3001 and M-8002. Provide all stack components including supports required for a complete installation.

3.3 Exhaust Fans

- .1 Support each fan on spring vibration isolating support hangers.
- .2 Provide expansion joint isolation of 100mm long between fans and ducts. Fire resistant, self-extinguishing, neoprene coated glass fabric, temperature rated at minus 40 degrees C to plus 90 degrees C, density of 1.3 kg/m². Minimum distance between metal parts when system in operation: 75 mm.
- .3 Variable speed control is for balancing purposes only. The control dial is not to be readily accessible for adjustment, and is to have a screwed cover with a label identifying it as EF-XX Speed Controller - "Not User Adjustable".

3.4 Galvanized Steel Duct

- .1 Lock forming quality: to ASTM A653/A653M, zinc coating.
- .2 Thickness, fabrication and reinforcement: to SMACNA.
- .3 Joints: to SMACNA.

3.5 Duct Hangers and Supports

- .1 Hangers and Supports: in accordance with Section 23 05 29- Hangers and Supports for HVAC Piping and Equipment.
 - .1 Strap hangers: of same material as duct but next sheet metal thickness heavier than duct. Install in accordance with SMACNA.
 - .1 Maximum size duct supported by strap hanger: 500 mm.
 - .2 Angle iron hangers: 25x25x3 galvanized steel angle with 6 mm galvanized steel rods to SMACNA, complete with locking nuts and washers.
 - .3 Hanger spacing: maximum 3.0 m and at top and bottom elbows.
 - .4 Upper hanger attachments:
 - .1 For steel beams: manufactured beam clamps:

3.6 Duct Sealing and Taping

- .1 Apply sealant in accordance with to manufacturer's recommendations.
- .2 Bed tape in sealant and recoat with minimum of 1 coat of sealant to manufacturers recommendations.

3.7 Hoods and Wall Sleeves for Dampers (See attached MSK-001 suggested, submit shop drawings)

- .1 Identify Z-girt locations by screw lines, and adjust the vertical location as required for sufficient clearance to install the fabricated 200x50 frame channels.
- .2 Adjust the opening location horizontally as required to avoid having the right or left side on a raised rib.
- .3 Contact building supplier to provide TR040 and TR041 J-trim for exterior edges.
- .4 Install interior 100x41 fabricated vertical channels from Z-girt to Z-girt (see building frame drawings) – not on raised ribs, and 2 fasteners per point. Install fabricated 100x41 cross channels using tabs. If standard channel is used, provide wedge washers for fasteners.
- .5 Wall insert sleeves are to be 20 ga. galvanized steel, extending 100mm (from panel base not corrugation rib) on either side of wall. Fasten insert to frame channels and vertical/cross channels.
- .6 Hood birdscreens are to be mounted on the face of the hood.
- .7 Install two 25x3 SS angled support straps from the hood to the appropriate Z-girt, with two fasteners each point.
- .8 Seal all joints and seams.

- .9 Sketch shows typical configuration – Contractor to adjust as required for opening size.
- .10 Provide color match wall flashing for top/bottom cross channels.

3.8 HVAC Alarm Panels (AP-2/4)

- .1 Mount panels where shown on the Drawings, about 1200 AFF. Coordinate power hookups to panels with electrical contractor. Provide firm mounting brackets/stands. AP-2 is intended to be visible from the center aisle.
- .2 Provide all control voltage power including transformers, distribution panels, and run wiring/conduit as required. All conduit and cabling is to as per CEC, neatly run and coordinated with piping, and with clearances to allow foot traffic both inside and outside. Outdoor conduit to be weather sealed.
- .3 Program, commission, and function test all controls and panels as per OEM instructions to satisfy schematic functions as shown on schematics/layouts.

3.9 Air Systems Testing and Balancing (TAB)

- .1 Standard: TAB to most stringent of TAB standards of NBC, SMACNA or ASHRAE. Tolerances: HVAC systems - plus 5%, minus 5%. Measured values accurate to within plus or minus 2% of actual values.
- .2 Do TAB of following systems, equipment, components, controls: systems, equipment, components, controls specified Division 23
 - .1 Unit Heaters
 - .2 Exhaust air fans and dampers
 - .3 Circulating and Flush Fans
- .3 Perform testing, adjusting and balancing for HVAC using as-built drawings
- .4 Qualifications: personnel performing TAB qualified to standards of AABC or NEBB
- .5 Quality assurance: perform TAB under direction of supervisor qualified by NEBB or AABC.
- .6 Measurements: to include as appropriate for systems, equipment, components, controls: air velocity, static pressure, flow rate, pressure drop (or loss), temperatures (dry bulb, wet bulb, dewpoint), duct cross-sectional area, RPM, electrical power, voltage, noise, vibration.
- .7 Locations of equipment measurements: to include as appropriate:
 - .1 Inlet and outlet of dampers, filters, fans, and other equipment causing changes in conditions.
 - .2 At controllers, controlled device.
- .8 Locations of systems measurements to include as appropriate: main ducts, main branch, sub-branch, run-out (or grille, register or diffuser).

3.10 Painting Repairs And Restoration

- .1 Prime and touch up marred finished paintwork to match original.
- .2 Restore to new condition, finishes which have been damaged.

3.11 System Cleaning

- .1 Clean interior and exterior of all systems. Vacuum interior of ductwork and unit heaters.

3.12 Field Quality Control

- .1 Do HVAC system testing as required by ASHRAE and Good Building Practice for Northern Facilities, whichever is more stringent..

- .2 Manufacturer's Field Services:
 - .1 For unit heaters only, obtain written report from manufacturer verifying compliance of Work, in handling, installing, applying, protecting and cleaning of product and submit Manufacturer's Field Reports as described in PART 1 - ACTION AND INFORMATIONAL SUBMITTALS.
 - .2 For unit heaters only, provide manufacturer's field services consisting of product use recommendations and final site visit for inspection of product installation in accordance with manufacturer's instructions.

3.13 Demonstration

- .1 Owner's Representative will trial use equipment and systems prior to acceptance. Supply labour, material, and instruments required for this trial usage.
- .2 Supply tools, equipment and personnel to demonstrate and instruct operating and maintenance personnel in operating, controlling, adjusting, trouble-shooting and servicing of all systems and equipment during regular work hours, prior to acceptance.
- .3 Use operation and maintenance manual, as-built drawings, and audio visual aids as part of instruction materials.
- .4 Instruction duration time requirements as specified in appropriate sections.
- .5 Owner's Representative will video record these demonstrations for future reference.

3.14 Cleaning

- .1 Progress Cleaning: clean in accordance with Section 01 77 00- Contract Closeout.
 - .1 Leave Work area clean at end of each day.
- .2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 77 00- Contract Closeout.

3.15 Protection

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

END OF SECTION

1.0 GENERAL

1.1 Reference Standards

- .1 ASTM International
 - .1 ASTM A53/A53M-07, Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc Coated, Welded and Seamless.
 - .2 ASTM B75M-99(2005), Standard Specification for Seamless Copper Tube Metric.
- .2 CSA International
 - .1 CSA-B139-15, Installation Code for Oil Burning Equipment.
 - .2 CSA-B140.0-03, Oil Burning Equipment: General Requirements.
- .3 Manufacturers Standardization Society of the Valve and Fitting Industry (MSS)
 - .1 MSS-SP-80-08, Bronze Gate, Globe, Angle and Check Valves.
- .4 National Research Council Canada (NRC)
 - .1 National Fire Code of Canada 2015 (NFC).Action and Informational Submittals
- .5 Product Data:
 - .1 Provide manufacturer's printed product literature, specifications and datasheets for piping, fittings and equipment and include product characteristics, performance criteria, physical size, finish and limitations.
 - .1 Provide manufacturer's catalogue literature the following: valves and braided hoses.
 - .2 Provide two copies of WHMIS MSDS for applicable items
- .6 Indicate VOC's for adhesive and solvents during application and curing.
- .7 Test Reports:
 - .1 Submit certified test reports from approved independent testing laboratories indicating compliance with specifications for specified performance characteristics and physical properties.
- .8 Certificates:
 - .1 Submit certificates signed by manufacturer certifying that materials comply with specified performance characteristics and physical properties.
- .9 Manufacturers' Instructions: provide manufacturer's installation instructions.

1.2 Closeout Submittals

- .1 Submit maintenance and engineering data for incorporation into manual.

1.3 Quality Assurance

- .1 Ensure piping is installed by company authorized by authority having jurisdiction.

1.4 Delivery, Storage and Handling

- .1 Deliver, store and handle materials in accordance with Section with manufacturer's written instructions and 01 61 00- Common Product Requirements.
- .2 Delivery and Acceptance Requirements:
 - .1 Deliver materials to site in original factory packaging, labelled with manufacturer's name, address.
- .3 Remove or recycle waste materials.

1.5 Fuel Oil Supply/Return and Vent/Drain Piping

- .1 Materials as per CSA-B139
- .2 Steel: to ASTM A53/A53M, Schedule 40, black steel, continuous weld or electric resistance welded.

1.6 Steel Pipe Coating

- .1 Paint shall be high solids corrosion resistant epoxy with the following characteristics:
 - .1 Color: Confirm with Owner's Representative
 - .2 Carbomastic 15 (machine/solvent prep) primer
 - .3 Carboguard 890 midcoat
 - .4 Carbothane 134HG topcoat
 - .5 The topcoat is not required for indoor piping
- .2 Surface preparation, mixing, application, and safety requirements shall be in accordance with the paint manufacturer's printed instructions.
- .3 Provide paint for field touch-up of factory painted surfaces after installation and testing is completed and system accepted. Paint product shall match factory paint.
- .4 Primers, Paints, Coating: in accordance with manufacturer's recommendations for surface conditions.
 - .1 Primer: maximum VOC limit to Standard GS-11.
 - .2 Paints: maximum VOC limit to Standard GS-11.

1.7 Flexible Connectors

- .1 Flexible metal hose, corrugated type with braided wire sheath covering, close-pitch annular corrugations, rated for a working pressure of at least 8.62 bar (125 psig), 600 mm nominal length screwed end connections, UL listed for flammable liquid service. Metal for hose and braided wire sheath shall be stainless steel, any type of ASTM 300-series.

- .2 Provide flexible connector at each burner and just before building wall as shown on drawings.

1.8 Jointing and Connections

- .1 Threaded connections - joints and connections shall be made fuel-oil tight.
- .2 Joints and connections shall be made with standard pipe fittings. All standard threaded fittings shall be
 - .1 Malleable iron which shall comply with ANSI/ASME B16.3 or ANSI/ASME B16.39
- .3 Compression fittings shall not be used.
- .4 Unions requiring gaskets or packing, right and left couplings, and solder or brazing materials having a melting point less than 538°C (1000°F) shall not be used in connecting fuel oil lines, fill lines, or vent lines.

1.9 Fittings

- .1 Steel:
 - .1 Threaded: ASME B16.11, forged steel, Class 2000.
 - .2 Threaded fittings: ASME B16.3, black malleable iron, Class 150.
 - .3 Unions: malleable iron, brass to iron, ground seat, screwed, to ASTM A47/A47M.
 - .4 Nipples: Schedule 40, to ASTM A53/A53M.
 - .5 Socket Welded fittings to ASME B16.11, forged steel, Class 3000
 - .6 A234WPB butt weld fittings for warming pipe (see M-8002).

1.10 Gate Valves

- .1 NPS 2 and under, screwed bonnet: rising stem: to MSS-SP-80, Class 125, 860 kPa, bronze body, solid wedge disc as specified under Section 23 05 23.01- Valves - Bronze.

1.11 Ball Valves

- .1 NPS 2 and under: MSS-SP-110 for bronze body, threaded and socket-welding, full port design, copper alloy. Valves shall have level handles, stainless steel ball and PTFE seats and seals, 4 MPa, WOG as specified under Section 23 05 23.01- Valves - Bronze.

1.12 Oil Filter

- .1 Replaceable cartridge type as recommended by furnace manufacturer (see equipment list).
- .2 Furnish 6 of each type of filter cartridges as spares.

1.13 Outdoor Fuel Storage Tank

- .1 The required tank and pump connections are as shown on schematic and equipment list.
- .2 See 21 05 01 Common Work Results for Mechanical for equipment and controls.

2.0 EXECUTION

2.1 Application

- .1 Manufacturer's Instructions: comply with manufacturer's written recommendations, including product technical bulletins, handling, storage and installation instructions, and datasheets.

2.2 Piping

- .1 Install piping in accordance with Section 23 05 05- Installation of Pipework, supplemented as specified.
- .2 Install oil piping system in accordance with CSA-B139.
- .3 Slope piping down in direction of storage tank unless otherwise indicated.
- .4 Above ground piping to be protected from physical damage due to impact.
- .5 Piping inside building:
 - .1 Ensure piping is installed to CSA-B139 and authority having justification.
 - .2 Use approved fittings to CSA-B139 for steel piping.
 - .3 Install filter gate valve, fusible link, filter, and SS braided hose valve at burners.
 - .4 See 21 05 01 Common Work Results for Mechanical for Warming Pipe welding.
- .6 Fill, vent, suction and return piping outside building:
 - .1 Steel piping threaded throughout except at tanks where electrically isolating fittings are used.
 - .2 Grading: slope piping at 1% minimum back to tanks, except leg as shown in M-8002.
 - .3 Install 50mm diameter x 600 long braided hoses just outside the building wall, for differential settlement.
- .7 Piping at tanks:
 - .1 Suction: terminate 50 mm from bottom of tank with 25mm diptube.
 - .2 Return: terminate 300mm from bottom of tank with 25mm diptube.
 - .3 Water Inspection port: terminate 50 mm from bottom of tank with 25mm diptube.
 - .4 MFG-1: Provide 50mm tube to within 50mm from bottom of tank.
 - .5 Comply with authority having jurisdiction and CSA-B139 for venting.
 - .6 Fill pipes: install to comply with CSA-B139.
 - .1 Include lockable spill container and cap as per M-6002.
- .8 Connections to Furnaces: Connect the Furnaces with supply and return piping as shown, and install flexible fuel oil connections supplied loose with the engine.
- .9 Clearly label piping runs in legible form indicating;
 - .1 Piping product content.
 - .2 Direction of flow.

2.3 Pipe Hangers and Supports

- .1 Provide MSS SP-58, Type 1 hangers with adjustable type steel support rods, except as specified or indicated otherwise. Attach to steel joists with Type 19 or 23 clamps and retaining straps. Attach to Steel W or S beams with Type 21, 28, 29 or 30 clamps. Attach to steel angles and vertical web steel channels with Type 20 clamp with beam clamp channel adapter. Attach to horizontal web steel channel with drilled hole on centerline and double nut and flat washer. Hangers and supports shall be hot-dipped galvanized steel. Rods and fasteners shall be hot-dipped galvanized steel.
- .2 U-bolt piping to pipe support bridge (S-7001, cable tray) on each end of tray only (i.e. not in middle). Adjust location of piping bridge depending on supply/return nozzle locations (to minimize horizontal runs to nozzles).

2.4 Unions

- .1 Provide screwed unions or weld-on flanges in pipe at all connections to valves, strainers and similar piping system components which may need maintenance or repair, at all equipment connections, in runs of piping exceeding 9m (30ft) at 4.5m (15ft) regular intervals to permit removal of sections of piping, and wherever else indicated on the drawings.

2.5 Valves

- .1 Install valves with stems upright or horizontal unless approved otherwise by Owner's Representative.
- .2 Install ball valves at branch take-offs, to isolate pieces of equipment and as indicated. Locate all valves so that they are easily accessible. Whenever possible, install valves at uniform height.
- .3 Install drain valves at the base of each piping riser, in drain connections to equipment, in low points of horizontal piping that cannot be drained to a tank and wherever else shown and/or specified.
- .4 Install plug cocks as indicated.
- .5 Provide pressure relief valves where fuel can be trapped between shutoff valves.

2.6 Installation Of Emergency Shut-Off Valve(S)

- .1 Provide quick opening and closing emergency shut-off valve in supply fuel oil piping just outside building wall. Ensure that the valves are easily accessible and provide a red-white "EMERGENCY FUEL OIL SHUT-OFF" sign at the valve location.

2.7 Field Quality Control

- .1 Site Tests/Inspection:
 - .1 Test system to CSA-B139 and CSA-B140.0 and authorities having jurisdiction.
 - .2 Isolate tanks from piping pressure tests.
 - .3 Maintain test pressure during backfilling.
- .2 Manufacturer's Field Services:

- .1 Have manufacturer of products, supplying materials for Work of this Section, review Work involved in handling, installation/application, protection and cleaning, of its product(s) and submit written reports, in acceptable format, to verify compliance of Work with Contract.
- .2 Provide manufacturer's field services consisting of product use recommendations and periodic site visits for inspection of product installation in accordance with manufacturer's instructions.
- .3 Schedule site visits, to review Work, at stages listed:
 - .1 After delivery and storage of products, and when preparatory Work, or other Work, on which the Work of this Section depends, is complete but before installation begins.
 - .2 Twice during progress of Work at 25% and 60% complete.
 - .3 Upon completion of the Work, after cleaning is carried out.
- .4 Obtain reports, within 3 days of review, and submit, immediately, to Owner's Representative.

2.8 Cleaning

- .1 Clean in accordance with Section as per manufacturer's written recommendations, supplemented as follows:
 - .1 Flush after pressure test with number 2 fuel oil for a minimum of two hours. Clean strainers and filters.
 - .2 Dispose of fuel oil used for flushing out in accordance with requirements of authority having jurisdiction.
 - .3 Ensure vents from regulators, control valves are terminated in approved location and are protected against blockage and damage.
 - .4 Ensure entire installation is approved by authority having jurisdiction.
 - .5 Clean in accordance with Section 01 77 00- Contract Close-out.
 - .1 Remove surplus materials, excess materials, rubbish, tools and equipment.

END OF SECTION

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A. SUMMARY OF WORK

1. DEFINITION

- 1.1 The City of Iqaluit is hereinafter and elsewhere in the Contract Documents referred to as the Owner. The contract documents may refer to “the Owner”, “the City of Iqaluit”, “the City” and “City”. All these have the same meaning as “the Owner”.
- 1.2 The contract documents may refer to “City Representative”, “Engineer”, “Consultant”, “Owners Agent” and “Contract Administrator”. All these have the same meaning as “City Representative”.
- 1.3 Where the word “provide” is used in any General Requirements sections or the Terms of Reference, it shall mean furnishing and incorporating a specified item, product, or material in the Works, including all necessary labour, materials, and equipment to perform the Work required, ready for use by the Owner.

2. GENERAL SUMMARY

- 2.1 Recognize that the Work under the Contract is to be performed in a facility, location, area that must be kept in continuous uninterrupted operation, or where municipal services must be maintained. Plan and schedule the Work consistent with specified operational constraints and with the objective of uninterrupted operation of the existing facility, structure, and/or service provided by the City.
- 2.2 Supervise, organize, coordinate and direct all construction operations described in the contract documents, regardless of the section in which the works are specified. The Contractor shall resolve conflicts arising between trades, sub-contractors, suppliers and/or other contractors working in the adjacent area.
- 2.3 Construct and test foundations, structures, pipelines, buildings, tanks, equipment and other facilities shown on the contract drawings and specified within the terms of reference.
- 2.4 Supply, install, calibrate and commission all mechanical, electrical, process, instrumentation and communication equipment shown on the contract drawings and specified within the terms of reference. Include operating assistance to the Owner as described.
- 2.5 In addition to constructing the works shown on the drawings and described within the terms of reference, design, construct, and maintain, unless otherwise specified on shown on the drawings or described in the terms of reference, all temporary works and facilities required for the construction of the works. Remove temporary works and facilities when construction is completed. Temporary works and facilities include, but are not limit to, the following:
 - .1 All security fencing whether permanent or temporary.
 - .2 Shoring and bracing systems for excavations whether part of all is left in place or not, shall be designed, approved and stamped by a Professional Engineer Licensed in Nunavut.

- .3 Construction access roads and related items.
 - .4 Excavation and/or dewatering systems.
 - .5 Formwork for concrete.
 - .6 Falsework and bracing for formwork or for other parts of the works while under construction.
 - .7 Bracing and shoring for partially completed steelwork, precast concrete, existing structures and pipelines, or other assembly.
 - .8 Scaffolding.
 - .9 Temporary bypass pumping systems to divert flows away from the work area so that services are uninterrupted, while ensuring the work can be performed safely.
 - .10 Protection for existing structures and facilities as necessary for the construction to proceed.
 - .11 Temporary power and/or utilities necessary to existing City buildings and/or facilities, in order to ensure services are not interrupted as a result of the work.
 - .12 Curtains to control the migration of dust during work inside existing buildings, structures, and rooms.
 - .13 Temporary barriers and enclosures.
 - .14 Temporary utilities (water, power, light, instrumentation, heating, ventilation services and sanitary facilities, etc.).
 - .15 Piping and equipment support.
 - .16 Snow removal around the job site.
 - .17 Temporary vehicular access and parking development, maintenance, and restoration.
- 2.6 Contractor to be responsible for all means and methods required to execute the work, as described in the Terms of Reference.

3. WORK BY OTHERS

- 3.1 Coordinate work of other Contractors. Report promptly to City Representative, in writing, any defects which may interfere with proper execution of the Work for this contract.

4. CODES AND PERFORMANCE REQUIREMENTS

- 4.1 Perform work in accordance with National Building Code of Canada (NBC) and any other code of territorial or local application provided that in any case of conflict or discrepancy, the more stringent requirements shall apply.

- 4.2 Meet or exceed the requirements of:
- .1 Contract documents.
 - .2 General requirements and terms of reference.
 - .3 Addenda.
 - .4 Reviewed Shop Drawings.
 - .5 Field Instructions and Change Orders.
 - .6 Other modifications to Contract.
 - .7 Field test reports.
 - .8 Copy of approved work schedule.
 - .9 Manufacturer's installation and application instructions.

5. WORK COMPLIANCE

- 5.1 Provide all work during its progress and at its completion to the lines, levels, and grades shown.
- 5.2 Build all work in a thoroughly substantial and workmanlike manner, in accordance with the Contract Drawings, General Requirements, and Terms of Reference, subject to such modifications and additions as may be deemed necessary during its execution. In no case will any work more than the requirements of the Drawings, General Requirements or Terms of Reference be paid for, unless approved in writing by the City Representative.

6. ENGINEER DESIGN

- 6.1 Where general requirements or terms of reference require work to be designed by an engineer, engage a professional engineer licensed in the Territory of Nunavut within demonstrated experience to design such work.

7. DOCUMENTS REQUIRED

- 7.1 Maintain at job site, one copy each document as follows:
- .1 Contract Documents
 - .2 Contract Drawings
 - .3 Addenda
 - .4 Reviewed Shop Drawings
 - .5 List of Outstanding Shop Drawings

- .6 Change Orders
- .7 Other Modifications to Contract
- .8 Field Test Reports
- .9 Copy of Approved Works Schedule
- .10 Site Specific Health and Safety Plan and Other Safety Related Documents
- .11 Current as-built document of construction work in progress
- .12 Other documents as specified

8. SUBSTANTIAL COMPLETION

- 6.1 In addition to the requirements in the General Conditions and Supplementary General Conditions, Substantial Completion shall only be issued once the following requirements have been addressed to the satisfaction of the City Representative:
 - .1 Successful testing, start-up and commissioning of all equipment and/or systems specified in the Contract Documents.

END OF SECTION

B. CONTRACTORS USE OF PREMISES

1. DESCRIPTION

- 1.1 This Section specifies requirements for the Contractor's use of project site during the construction.

2. GENERAL

- 2.1 Normal working hours shall be Monday to Friday, 7:00am to 5:00pm, excluding statutory holidays. Work shall be permitted outside of these hours by obtaining written approval from the City Representative and Owner, five (5) working days in advance of the planned work.
- 2.2 The Contractor shall arrange with the City for easements for construction, storage and access to all the Works within the Owner's property line.
- 2.3 Do not enter upon or occupy with workers, tools or materials any land other than public streets, roadways, rights-of-way's or easements shown on the Contract Drawings except after written consent has been received from the property owner.
- 2.4 The Contractor shall obtain written approval from the City Representative for shutdown and tie-in work to existing facilities and structures. The City's staff will be responsible for operations of the existing facilities and structures during the construction period.
- 2.5 The Contractor shall obtain written approval from the City Representative for work that will be executed within a municipal right-of-way, and for partial or full closure of municipal roadways.
- 2.6 Do not impede normal operation of existing facilities and structures.
- 2.7 A temporary fence and access gate are to be erected to separate the work area from the plant operating area as specified herein and as directed by the City Representative.

3. STAGING AREA

- 3.1 The staging area will be identified on the contract drawings or provided by the City Representative at the pre-construction meeting.
- 3.2 Locate construction trailers, laydown areas, and temporary buildings under the direction of the City Representative.

4. WORK AREA

- 4.1 Contractor shall clearly delineate the entire perimeter of his working area with a sturdy metal fence of at least 1.8m height, with sufficient access gates, complete with signage identifying company name, site contact telephone number, and emergency contact information prior to commencement of any work.

- 4.2 All points of entry into the Contractor's working area, including stair and walkways, shall be similarly controlled by sturdy barriers and signage. Do not impede emergency egress from any area.
- 4.3 Confine operations within easements for construction, storage and access.
- 4.4 Install, secure and maintain fencing along working and storage areas, access routes and both sides of easements.
- 4.5 Do not enter upon or occupy any land with labor, tools or materials other than the easements for construction except after written consent has been received from property owner.
- 4.6 Do not encumber site with materials or equipment.
- 4.7 Where the work takes place in different areas of the facilities, structures, or work areas at different times of the contract, a 'rolling' definition of working area can be utilized.

5. STORAGE

- 5.1 Contractor shall provide suitable storage areas, as well as security if needed, for construction materials. Storage and security of construction materials will be the responsibility of the Contractor.
- 5.2 Contractor shall obtain permission from the City Representative before storing any materials in any new facility or work areas under construction.
- 5.3 Excess materials resulting from any or all excavations are the property of the Owner. Its disposal by the Contractor as part of the contract shall be as directed by the Owner unless the Owner waives this requirement. Under this circumstance, the contractor shall be responsible for the disposal of any or all of the excess materials.

6. ENTRY OF OWNER'S STAFF INTO CONTRACTOR'S WORKING LIMITS

- 6.1 The Owner may require access to the work site during the construction period for the purpose of maintaining normal operation of City infrastructure and services. Cooperate with the Owner in scheduling construction activities to facilitate the Owner's usage and to minimize conflict.
- 6.2 Maintain the entire works free of debris, snow and ice at all times, including access to all buildings, facilities and structures which continues to be operated and/or maintained by Owner's staff.
- 6.3 Prepare a written procedure regarding the entry of Owner's staff into the construction site and submit to the City Representative for review. The procedure must be communicated to all operating staff who may enter the construction site.
- 6.4 The existing facilities and/or structures operate 24 hours per day, 7 days per week. In the event of conflict between construction activities and general operations, operations shall

have priority. Take every precaution to avoid interfering within routine operation and maintenance.

END OF SECTION

C. COORDINATION

1. CONSTRUCTION COORDINATION WITH CITY OPERATIONS STAFF

- 1.1 The existing facilities, structures and systems operate 24 hours a day, 7 days per week. In the event of a conflict between construction operations and routine City operations, City operations have priority. Take every precaution to avoid interfering with routine operation and maintenance activities. Reschedule construction activities, if required, without change to the contract price.
- 1.2 Coordinate activities on the site and in the existing buildings/ facilities/ structures with the City Representative.
- 1.3 Perform work continuously during critical shutdowns, connections and changeover, and as required to prevent interruption of City operations.
- 1.4 The Contractor must identify work activities that may impact the operation and maintenance activities of the City operations staff, in advance of the scheduled work, at least 5 business days prior to the work. The Contractor shall submit to the City Representative a detailed work plan listing work activities for the next 14 calendar days, detailing the works that will affect City operations staff.
- 1.5 Do not close lines, open or close valves, or take other action which would affect the operation of the existing systems, except as specifically required by the Contract Documents and only after the prior authorization of the City Representative has been obtained.
- 1.6 Coordinate the proposed work with the City Representative prior to process shutdowns. Under no circumstances stop the work at the end of a normal working day if such action may cause a cessation of any facility or structure operating process. In such cases, remain on site until the necessary work is complete.
- 1.7 Coordinate activities on the site and in the existing buildings/ facilities with the City Representative.
- 1.8 Perform work continuously during critical shutdown, connection and changeover, and as required to prevent interruption of the facility operation or City services.
- 1.9 Shutdown of existing facilities/ structures and tie-ins:
 - .1 When the Contractor requires a part of an existing facility, structure, or process system shutdown for execution of construction activities, a formal shutdown request must be made in writing at least 14 calendar days in advance of the requested shutdown date. The shutdown request shall describe in detail the proposed method, and the procedures proposed to accomplish each portion of the Work that requires an interruption to the operation of the existing facility, structure or system. The Contractor shall not begin any such Work until it has received written acceptance of the methodology and approach from the City Representative. The Contractor shall include in its plan the specific number of

work hours to complete each facility interruption, along with measures to mitigate risk to the City.

- .2 The Contractor participating in the planning and execution of the shutdown shall coordinate with the City staff on the planning of the shutdown activity. The Contractor and City staff shall work together to establish a shutdown specific energy and equipment lockout strategy that is required for each shutdown of existing facilities, structures, and systems for all work that includes the Contractor's work to connect new systems to the existing facilities and structures. The operator is not obliged to provide the shutdown within the 14-day period if the effectiveness of the plant operations could be compromised. The operator will not unreasonably delay or refuse to make the plant processes or systems available for the Contractor's construction activities. A delay or refusal shall be based on the operator's opinion that the performance of the plant will be compromised.
- .3 At each location where tie-in is required, the Contractor shall provide a complete system of temporary works including bulkheads, pumps, power, equipment, and labor as necessary to maintain facility/ structure/ system operations, and to allow for construction of the new structures/ systems.
- .2 All temporary equipment, tools, materials, labor, and miscellaneous equipment must be scheduled and available at the Site in advance of any shutdowns. The Owner will not be responsible for delays or claims as a result of the Contractors lack of coordination.
- .3 The City reserves the right to cancel any scheduled shutdown if system or weather conditions dictate, at no additional cost to the City.
- .4 Prior to making major tie-ins to existing process units and structures, demonstrate that the equipment installed in all new structures is fully functional. Connections to existing works will not be permitted until all equipment in the new adjacent works operates to the satisfaction of the City Representative. No claim for delay will be entertained due to unsatisfactory operation of any equipment.
- .10 Operations provided by City staff:
 - .i Access to City facilities and structures.
 - .ii Opening and closing of existing valves and gates in existing buildings, structures, or systems.
 - .iii Isolation of existing process piping.
- .11 In the event any existing facility or structure is damaged, changes mode of operation or there is a risk of actual process upset due to the Contractor's work activity, the Contractor shall stop work immediately, contact the City Operations representative, report the incident to the City Representative, and make the Contractor's on-site resources available at the request and direction of the City Operations Representative at no extra cost to the project to mitigate any damage.

- .12 Contractor shall supply and maintain all appropriate and necessary equipment for confined space entry operations in accordance with applicable regulations.
- .13 The Contractor shall coordinate confined space entry operations where multiple parties are involved in accordance with the Nunavut Safety Act and Occupational Health and Safety Regulations.

2. COORDINATION OF TRADES AND SUBCONTRACTORS

- 2.1 The Contractor shall ensure cooperation with and between the trades and Subcontractors to ensure that the Work is carried out expeditiously and in a satisfactory manner. The Contractor shall be responsible for all extra costs arising from failure to properly coordinate the Work with the work of others
- 2.2 Coordinate civil, structural, architectural, mechanical, electrical, and instrumentation and work for the equipment and systems being constructed. Planning and coordinate the work in a timely manner so that the work proceeds expeditiously.
- 2.3 Extras will not be considered, based on differences of interpretation of the terms of references, as to which trade shall supply and install certain items or materials. Such coordination is entirely the responsibility of the Contractor.

3. COOPERATION WITH OTHER CONTRACTORS

- 3.1 Other contracts may be awarded to construct adjacent work to which this contract work connects.
- 3.2 At the interference with other contracts, jointly plan and coordinate with other contractors the work so that the project:
 - .1 Will not be delayed.
 - .2 Will not be endangered in any way.
 - .3 Will be correctly connected.
 - .4 Will not cause the City to be designated as the “Prime Contractor” as set out in the Safety Act.
- 3.3 Where any equipment is supplied by the Owner, coordinate unloading, transfer, installation, testing and placing into operation.
- 3.4 Where other work is in progress within or adjacent to the limits of this Contract, cooperate and coordinate with other Contractor(s), Utility Companies and the City of Iqaluit, and allow reasonable, free access to their work at all times.
- 3.5 Cooperate and make suitable working arrangements with other Contractor(s).
- 3.6 Notify the City Representative in advance and obtain approval in writing from the City Representative for all arrangements made with other Contractor(s).

4. UTILITY NOTIFICATION AND COORDINATION

- 4.1 Coordinate the Work with various utilities within Project limits. The Contractor shall notify applicable utilities prior to commencing the Work. The Contractor shall also notify the applicable utilities if any damage occurs, or if conflicts or emergencies arise during the execution of the Work.
- 4.2 Should any piping, sewers, cables or similar services be encountered during performance of the work that are not known from the City or other utility companies records, the Contractor shall notify the City Representative and the appropriate utility agency and shall not proceed with their removal or cutting until direction has been provided.

5. WORKING WITHIN THE A CITY EASEMENT AND/OR RIGHT-OF-WAY

- 5.1 For construction work that will be taking place within a City easement and/or right-of-way, the Contractor must submit to the City Representative a completed City of Iqaluit Utility Permit application, along with all supplementary documents, for review and approval with the Department of Public Works and Engineering.
- 5.2 Supplementary documents shall include:
 - .1 Brief work plan methodology describing the work that will be taking place within the easement and/or right-of-way, the means of construction, temporary structures that will be used, the equipment that will be used.
 - .2 Schedule outlining duration of work, along with all phases and activities that will comprise the work.
 - .3 Traffic control plan (if applicable).
- 5.3 Utility permits must be submitted 20 business days in advance of the planned Work. The Contractor will not be granted an extension of time to the Contract, should they fail to submit a permit application within the timelines stipulated.
- 5.4 No work can proceed until approval has been provided in writing by the City Representative.
- 5.5 The Contractor must account for the time to review and approve permit applications within their construction schedule.
- 5.6 Pay relevant permit fees and charges.

6. PARTIAL OR FULL CLOSURE OF A MUNICIPAL ROADWAY

- 6.1 For construction work that will require a partial or full closure of a municipal roadway, the Contractor must submit to the City Representative a completed City of Iqaluit Road Closure Permit Application, along with all supplementary documents, for review and approval with the Department of Public Works and Engineering.

- 6.2 Supplementary documents shall include:
- .1 Brief work plan methodology describing the work that will be taking place within the easement and/or right-of-way, the means of construction, temporary structures that will be used, the equipment that will be used.
 - .2 Schedule outlining duration of work, along with all phases and activities that will comprise the work.
 - .3 Traffic control plan. Refer to Section E Special Project Procedures regarding traffic control plan requirements.
- 6.3 Road closure permits must be submitted 20 business days in advance of the planned Work. The Contractor will not be granted an extension of time to the Contract, should they fail to submit a permit application within the timelines stipulated.
- 6.4 No work can proceed until approval has been provided in writing by the City Representative.
- 6.5 The Contractor must account for the time to review and approve permit applications within their construction schedule.
- 6.6 Pay relevant permit fees and charges.

7. WATER AND SEWER CONNECTIONS/ DISCONNECTIONS

- 7.1 For tie-in to City water and/or sewer infrastructure, the Contractor must submit to the City Representative a completed City of Iqaluit Water & Sewer Connection/ Disconnection Permit Application, along with all supplementary documents, for review and approval with the Department of Public Works and Engineering.
- 7.2 Supplementary documents shall include:
- .1 Brief work plan methodology describing the work that will be taking place within the easement and/or right-of-way, the means of construction, temporary structures that will be used, the equipment that will be used.
 - .2 Schedule outlining duration of work, along with all phases and activities that will comprise the work, along with dates/ times when City operations support is required to shutdown/ isolation of City systems.
 - .3 Traffic control plan (if applicable). Refer to Section E Special Project Procedures regarding traffic control plan requirements.
 - .4 By-pass plan (if applicable). Refer to Section E Special Project Procedures regarding by-pass plan requirements.
- 7.3 Utility permits must be submitted 20 business days in advance of the planned Work. The Contractor will not be granted an extension of time to the Contract, should they fail to submit a permit application within the timelines stipulated.

- 7.4 No work can proceed until approval has been provided in writing by the City Representative.
- 7.5 The Contractor must account for the time to review and approve permit applications within their construction schedule.
- 7.6 Pay relevant permit fees and charges.

8. WORKING IN EXISTING BUILDINGS

- 8.1 Obtain permission in writing from the City Representative prior to commencing work within an existing City building and/or facility, at least 7 business day prior to the start of work. The Contractor is to notify the City Representative what work will be taking place within the existing building, along with the measures that will be taken in order to ensure separation of work from City operations. Refer to Section E Special Project Procedures work permits.
- 8.2 The Contractor shall be responsible for enforcement of fire protection methods and procedures and adherence to local fire regulations, including any applicable requirements of the Safety Act and Occupational Health and Safety Regulations during the execution of the Work.
- 8.3 The Contractor shall ensure that existing fire protection and alarm systems are not obstructed, shut-off or made inactive at any time for the duration of the Contract. The Contractor shall not use any fire hydrant, standpipe or hose system for other than fire protection purposes.

END OF SECTION

D. REGULATORY REQUIREMENTS

1. SUBMITTALS

- 1.1 Quality Control Submittals: Submit certificates from inspecting authorities for electrical work and pressure piping, etc.

2. APPLICABLE CODES

- 2.1 Comply with the latest edition of the following statutes and codes and all amendments thereto:
- .1 The Nunavut Building Code Act and Regulations.
 - .2 National Building Code of Canada.
 - .3 Safety Act and Occupational Health and Safety Regulations.
 - .4 Nunavut Boilers and Pressure Vessel Act and Regulations.
 - .5 Canadian Electrical Code.
 - .6 Nunavut Electrical Protection Act.
 - .7 Nunavut Gas Protection Act.
 - .8 Codes and Standards of the National Fire Protection Association (NFPA).
 - .9 Nunavut Environmental Protection Act.
 - .10 Nunavut Waters and Nunavut Surface Rights Tribunal Act.
 - .11 City of Iqaluit Municipal Design Guidelines.
 - .12 City of Iqaluit By-Laws:
 - .i By-Law No. 200 Water & Sewer Services.
 - .ii By-Law No. 137 Highway Obstructions.
 - .iii By-Law No. 138 Highway Occupancy.
 - .iv By-Law No. 319 Highway Traffic.
- 2.2 The Contractor shall conform to and enforce strict compliance with the Safety Act and Occupational Health and Safety Regulations. For purposes of the Safety Act and Occupational Health and Safety Regulations, the Contractor will be designated the “Prime Contractor” and assumes the responsibilities of the “Prime Contractor” as set out in the Act and its regulations.

3. PERMITS, APPROVALS, AND LICENCES

- 3.1 Apply for, obtain, and pay for all permits, approvals, and licenses required for the project, including but not limited to:
- .1 Canadian Standards Association (CSA).
 - .2 Field certification of equipment.
 - .3 Electrical supply and inspection authorities including Government of Nunavut Electrical Safety authority. Contractor shall apply for permit, and review of installations.
 - .4 City of Iqaluit utility permits.
 - .5 City of Iqaluit road closure permits.
 - .6 City of Iqaluit water and sewer service connection/ disconnection permits.
 - .7 Government of Nunavut Building permits.
 - .8 Government of Nunavut Boiler and Pressure Vessel permits.
 - .9 Government of Nunavut Gas and Liquified Petroleum Gas permits.
 - .10 Other permits required for the work from governing federal, territorial and municipal authorities having jurisdiction.
- 3.2 Arrange for regular inspections and a final inspection with:
- .1 The territorial electrical safety inspector.
 - .2 The territorial building inspector.
- 3.3 Arrange for all other regular inspections and final inspections.
- 3.4 The Contractor shall be solely responsible, without limitations, for any delays arising from the Contractor's failure to plan for the required inspections and to ascertain the availability of the Permit/Approval/Licensing Inspectors to complete the required inspections for the Works under this Contract. The related costs and expenses incurred by the Contractor shall be borne by the Contractor, with no change in the Contract Price and/or Contract Time.

END OF SECTION

E. SPECIAL PROJECT PROCEDURES

1. UTILITIES

- 1.1 The Contractor's attention is drawn to the presence of utilities on and around this site. The locations of utilities as shown on the Contract Drawings are approximate only and are not guaranteed. The Contractor shall be responsible for obtaining a stake-out of the utility from the company involved. The Contractor shall co-ordinate his work with the Utility Company and the Owner of concerned, should there be any bracing, removal or relocation of the pole lines or underground utility required. There will be no additional payment to the Contractor for any delays due to the relocation of utilities.

2. LIMITS OF CONSTRUCTION

- 2.1 The Contractor shall note that all work is to be contained within the limits of construction as noted in the Contract Documents. Trespassing outside these limits is not allowed. These requirements will be strictly enforced.
- 2.2 The Contractor shall coordinate the use of premises for staging, construction, storage and access area under the direction of the City Representative.

3. WORK PERMITS

- 3.1 When working in existing City facilities, buildings, and structures, the Contractor is to abide by the Owner's Location Work Permit. Contractor's site representatives will be expected to attend an initial meeting to complete this Permit together with the Owner at minimum every 7 business days in advance or with every change in location or nature of the work, to review safe work procedures as it relates to work within the existing facility. No work will be allowed to take place in existing facilities until the Location Work Permit procedure is utilized.
- 3.2 Provide a detailed work plan and schedule outlining all proposed tasks and timing for the related work. Meet with the City Representative and Owner as may be required to clarify and coordinate activities and timing. The City will review the request and return with comments if any.

4. TRAFFIC CONTROL

- 4.1 The Contractor shall develop a site-specific Traffic Control Plan (TCP) as per the site condition and submit to the City Representative for review and approval. TCP must be submitted 7 business days prior to start of construction work.
- 4.2 Contractor shall follow all standards traffic control procedures in accordance with the requirements of the Safety Act and Occupational Health and Safety Regulations.
- 4.3 Comply with requirements relevant City of Iqaluit By-Laws with respect to road obstructions and occupancy.
- 4.4 When working on travelled ways:

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- .1 Place equipment in position which presents minimum interference and hazard to travelling public.
- .2 Keep equipment units as close together as working conditions permit and preferably on same side of travelled way.
- .3 Do not leave equipment on travelled way overnight.
- 4.5 Do not close any lanes or roads without approval of City Representative via a Road Closure permit. Before re-routing traffic erect suitable signs and devices approved by City Representative.
- 4.6 Keep travelled ways graded, free of pot-holes and of sufficient width for required number of lanes of traffic.
- 4.7 Keep travelled ways free of snow:
 - .1 Pile snow in designated location(s).
 - .2 Do not pile snow on construction site or on adjacent property.
- 4.8 As indicated, provide graveled detours or temporary roads to facilitate passage of traffic around restricted construction area:
 - .1 Do grading for detour in accordance with City Representative's written approval.
- 4.9 Provide and maintain road access and egress to property fronting along Work under Contract and in other areas as indicated, unless other means of road access exist that meet approval of City Representative.
- 4.10 Provide and maintain signs, flashing warning lights and other devices required to indicate construction activities or other temporary and unusual conditions resulting from Project Work which requires road user response.
- 4.11 Supply and erect signs, delineators, barricades (concrete jersey barriers) and miscellaneous warning devices as required by the City of Iqaluit.
- 4.12 Place signs and other devices in locations approved by City Representative.
- 4.13 Meet with City Representative prior to commencement of Work to prepare list of signs and other devices required for project. If situation on site changes, revise list to approval of City Representative.
- 4.14 Continually maintain traffic control devices in use by:
 - .1 Checking signs daily for legibility, damage, suitability and location. Clean, repair or replace to ensure clarity and reflectance.
 - .2 Removing or covering signs which do not apply to conditions existing from day to day.

- 4.15 Provide competent flag persons and properly equipped as Directed by City Representative.
- .1 When public traffic is required to pass working vehicles or equipment that block all or part of travelled roadway.
 - .2 When it is necessary to institute one-way traffic system through construction area or other blockage where traffic volumes are heavy, and traffic signal system is not in use.
 - .3 When workmen or equipment are employed on travelled way over brow of hills, high snowbanks, around sharp curves or at other locations where oncoming traffic would not otherwise have adequate warning.
 - .4 Where temporary protection is required while other traffic control devices are being erected or taken down.
 - .5 For emergency protection when other traffic control devices are not readily available.
 - .6 In situations where complete protection for workers, working equipment and public traffic is not provided by other traffic control devices.
 - .7 At each end of restricted sections as directed by City Representative.
 - .8 Delays to public traffic due to contractor's operators: maximum 15 minutes.
- 4.16 Where roadway, carrying two-way traffic, is restricted to one lane, for 24 hours each day, provide portable traffic signal system. Adjust, as necessary, and regularly maintain system during period of restriction. Signal system to meet requirements of Part IV of Manual of Uniform Traffic Control Devices for Streets and Highways.
- 4.17 Maintain existing conditions for traffic throughout period of contract except that, when required for construction under contract and when measures have been taken as specified and approved by City Representative to protect and control public traffic.
- 4.18 Maintain existing conditions for traffic crossing right-of-way.
- .1 Maintain existing conditions for traffic crossing right-of-way except when required for construction.
 - .2 Delays to public traffic: maximum 15 minutes.

5. WORK IN HAZARDOUS AREAS

- 5.1 Before commencing the day's work and while working in areas that may contain an explosive, toxic or oxygen deficient atmosphere, test for explosive, toxic gases, and oxygen deficiencies. If a hazardous condition is found, make the work area safe before commencing or continuing work.

- .1 Provide and maintain a suitable detection meter. Use this meter continuously. Calibrate the meter to sound an alarm at a preset warning level.
- .2 Recalibrate the meter at times recommended by the manufacturer.
- 5.2 Smoking is not permitted in the hazardous areas and other areas designated by the City. The Contractor shall post “No Smoking” signs as required.
- 5.3 Use non-sparking tools in areas where an explosive atmosphere may exist.
- 5.4 Perform work in hazardous locations in accordance with the requirements of the Safety Act and Occupational Health and Safety Regulations.
- 5.5 It is the Contractor’s responsibility (as Prime Contractor) to establish the classification of the work areas for the purpose of this contract.
- 5.6 Work Procedures for Hazardous Locations:
 - .1 Contractor is a Prime Contractor on this project and is responsible for site safety.
 - .2 Construction activities that occur in hazardous locations require continuous combustible gas monitoring by the Contractor when the potential for a hazardous atmosphere exists.
- 5.7 Metering for Toxic, Combustible Gas, H₂S and Oxygen Deficiency:
 - .1 Utilize a suitable portable gas detection meter to continuously monitor for toxic gases, combustible gases, hydrogen sulfide and oxygen deficiency in the surrounding atmosphere. Set meter to sound alarm at a preset warning level. The Contractor shall demonstrate to the City Representative that the meter has recently been calibrated by a certified technician and is adequately functional for the intended purpose.
- 5.8 Meter Operator:
 - .1 When the potential for a hazardous atmosphere exists have a competent worker operate and read the portable meter continuously while construction activities occur in the designated hazardous locations. This meter operator is not permitted to assist in the construction activity in any way. Locate meter operator in the immediate vicinity of construction activity. If work in two or more different hazardous locations is required at the same time, provide the additional meter operator and meter.
- 5.9 Logbook:
 - .1 Maintain a logbook with:
 - .i Date.

- .ii Name of meter operator.
- .iii Explosive gas and oxygen deficiency readings every ½ hour.
- .2 Construction activity type:
 - .i Location of construction activity.
 - .ii Submit logbook to the City Representative when construction is complete.

5.10 Firefighting Equipment:

- .1 Provide and maintain suitable firefighting equipment when working in the designated hazardous locations. Train personnel in the use of firefighting equipment.

6. WORK IN CONFINED SPACES

- 6.1 For the purposes of this Contract, the following areas in existing operating process areas are identified as confined space locations:
 - .1 Access vaults (AV's).
 - .2 Manholes (MH's).
 - .3 Tanks, vessels, and sumps
- 6.2 All work and entry into the identified Confined Spaces is to be done in accordance with the Nunavut Safety Act, R.S.N.W.T. 1988,c.S-1 – 2016, and the Nunavut Occupational Health and Safety Regulations, R-003-2016 – 2016.
- 6.3 The Contractor is responsible for all duties to ensure the work performed in the confined spaces is carried out in accordance with the Nunavut Safety Act, R.S.N.W.T. 1988,c.S-1 – 2016, and the Nunavut Occupational Health and Safety Regulations, R-003-2016 – 2016. The Contractor is responsible for all actions to ensure the duties imposed on employers by the Nunavut Safety Act, R.S.N.W.T. 1988,c.S-1 – 2016, and the Nunavut Occupational Health and Safety Regulations, R-003-2016 – 2016 are performed to protect the health and safety of all workers working in the confined spaces. For all confined space entries, involving workers from any employer, the Contractor is responsible for all coordination for work activities, confined space assessment, development of entry plans, permitting, supply of equipment for atmospheric testing and monitoring, ventilation, access and egress, entry, monitoring, control, rescue planning, and the initiation and implementation of rescue procedures in accordance with the Regulations.
- 6.4 The Contractor shall maintain all appropriate documentation required under the Regulation and provide daily copies to the City Representative.

- 6.5 The Contractor shall supply all required safety, monitoring, control and personal protective equipment required for confined space entry operation, including, but not limited to entry and rescue equipment, atmosphere monitors (see Section 5) and breathing apparatus/ respiratory protection.
- 6.6 The Contractor shall ensure that all workers entering or interacting with the identified confined spaces are appropriately trained and that proof of training is provided upon request.

7. STORAGE AND PROTECTION OF MATERIALS AND EQUIPMENT

- 7.1 Protect materials and equipment after unloading, from weather, dust, dirt and moisture, both before and after erection and placing. Observe manufacturer's written instructions for temporary storage.
- 7.2 Maintain equipment in good condition, as per manufacturer's instructions.
- 7.3 Provide manufacturer's written instructions for the storing of equipment during the construction period, well in advance of equipment delivery.
- 7.4 Store specialty items to ensure protection from damage to materials or finish.
- 7.5 Store materials subject to water absorption off the ground. Protect materials from other damage due to environmental conditions using waterproof covers.
- 7.6 As work proceeds and upon completion, promptly clean up and remove from site surplus materials resulting from foregoing work.

8. DISPOSAL OF MATERIAL OFF-SITE

- 7.1 Material designated to be removed from the site must be promptly removed.
- 7.2 Make necessary arrangements for environmentally safe transportation and ultimate disposal in compliance with all applicable Regulations and Guidelines at no cost to the City, unless noted otherwise.
- 7.3 Carry out additional chemical analysis of site materials suspected to be contaminated and determine applicable Regulations and Guidelines as may be required to determine the environmental quality of materials encountered and to determine suitable means for transportation and ultimate disposal. Notify the City Representative of concerns and provide copy of test results. Payment for haulage and disposal fees for contaminated excavated material will be considered Extra Work to this Contract as required.
- 7.4 Removal all waste material to the City's West 40 Landfill. Contractor will be responsible for all costs associated with loading, transportation and haulage, and tipping fees from the project site to the landfill.

9. ENVIRONMENTAL CONSIDERATIONS DURING CONSTRUCTION

9.1 Equipment Fueling:

- .1 Designate an area within the working limits, a minimum of 30 meters away from open water courses, to be used exclusively for fueling construction equipment.
- .2 Submit for review a plan for the interception and rapid clean-up of fuel spills should they occur.
- .3 Maintain the apparatus for cleaning up fuel spills on site.

9.2 Cleaning Equipment:

- .1 Keep construction equipment clean so that no debris is deposited on the City roadways.
- .2 Contain construction debris in a designated area within the working limits.
- .3 Dispose of debris off-site.

9.3 Noise Control:

- .1 Use only vehicles and equipment equipped with effective muffling devices. Provide noise barriers on stationary engines and compressors. Provide noise barriers on stationary engines and compressors.
- .2 Comply with City of Iqaluit Noise By-Law.
- .3 Consider noise attenuation measures in the approach and submissions for noise generating activities.

9.4 Dust Control:

- .1 Use water, or other methods to control dust as directed by the City Representative. Do not use chemical means of dust control without prior written approval from the City Representative. The use of petroleum products will not be allowed at any time.
- .2 Submit dust control plan detailing proposed methods to control dust on site for the review and acceptance by the City Representative.

10. PROTECTION OF EXISTING STRUCTURES AND PROPERTY

- 10.1 The Contractor will be held fully responsible by the City for any damage to utilities, properties, buildings, homes or structures adjacent to or in the general area of the work, through settlement of ground, vibration or shock resulting from any cause relating to the work carried out under this Contract. Make good and repair such damage at own expense.

- 10.2 Refer to Section N – Preservation and Protection.

11. EROSION AND SEDIMENT CONTROL

- 11.1 Prepare and implement a separate detailed erosion and sediment control plan for the duration of the work.
- 11.2 Correct all erosion control deficiencies noted by the City Representative. Maintain appropriate measures in place until the construction is fully completed.
- 11.3 Cooperate with the City Representative and the Owner for periodic inspections (during and after construction).

12. DAMAGE BY VEHICLES AND OTHER EQUIPMENT

- 12.1 If at any time, in the opinion of the City Representative, damage is being or is likely to be done to any road, highway, improvements or property therein, other than such portions as are part of the work, by the Contractor's vehicles or other equipment whether licensed or unlicensed, the Contractor shall, on the direction of the City Representative and at the Contractor's own expense, make changes in or substitutions for such vehicles or other equipment or shall alter loadings or shall in some manner remove the cause.

13. PROPERTY OWNER'S LETTER OF RELEASE

- 13.1 The Contractor will be required, when instructed by the City Representative, to provide a letter from the Owner and/or Owners of property adjacent to the work or on which the work was constructed, clearly stating that the reinstatement work carried out by the Contractor has been completed satisfactorily.
- 13.2 This letter of release will only be required where damage has been caused to private property or where work takes place on private property or easement.

14. UTILITY OWNER'S LETTER OF RELEASE

- 14.1 The Contractor will be required, when instructed by the City Representative, to provide a letter from the owners of utilities stating that all services damaged during construction of the work have been satisfactorily repaired.

15. INCLEMENT WEATHER

- 15.1 Make adequate protection and take all necessary precautions at times of inclement weather.
- 15.2 Inclement weather or extra work caused by such weather will not be accepted as reason for additional payment or an extension to the time of completion.

16. SNOW PLOWING

- 16.1 The Contractor shall be responsible for snow and ice removal in the designated construction area and related access roads for each group of primary clarifiers as well as Contractor's staging and storage area at its own cost.
- 16.2 Snow plowing shall be under the direction of the City Representative and shall not block any municipal roadways, easements, access roads or driveways for the general public or City operating staff to access.
- 16.3 Snow is to be disposed of at the designated snow disposal area, as directed by the City Representative.

END OF SECTION

F. CONSTRUCTION SEQUENCING

1. GENERAL

- 1.1 The Work is to be completed in the time stated in the Form of Tender. In this regard, the Contractor is responsible for scheduling the sequencing of work.
- 1.2 This Section includes mandatory construction sequencing constraints and a suggested general sequence of construction that will satisfy the mandatory constraints required in the execution of the Work.
- 1.3 The Contractor shall plan to perform the work activities in such a sequence that does not necessitate the removal from service any essential part or component of the existing works without first having a temporary facility to enable continuous normal operation of the existing water pollution control plant and process or has fully commissioned new facilities that are capable of operating in place of the part or component of the existing works that the Contractor must demolish and/or modify.
- 1.4 The Contractor's sequencing of work shall consider the submission of technical submittals and shop drawings for review and approval, prior to the commencement of work in the field.
- 1.5 The Contractor's schedule shall incorporate a logical sequence of construction activities, such that the work be completed in a manner that is safe, efficient, and interruption free as per the time stated in the Form of Tender.

2. COORDINATION

- 2.1 It is noted that the proposed works must be constructed so as not to interfere with or cause any un-scheduled interruption of operation of existing City process systems and services.
- 2.2 Coordinate the requirements of this Section with the other requirements of the Contract Documents.
- 2.3 Refer to Section C for other coordination requirements.

3. SERVICES PROVIDED BY THE CONTRACTOR

- 3.1 The Contractor shall coordinate the construction activities with the City Representative in advance as per Section C.
- 3.2 The Contractor shall provide the required temporary construction, drainage, grading, sedimentation and erosion control measures for the construction area.
- 3.3 The Contractor shall provide the necessary temporary power, pumping facilities, ventilation equipment, pipes, valves, fittings, diversions, temporary bulkheads, or any other equipment and systems, as required during construction.

4. SERVICES PROVIDED BY THE CITY

- 4.1 The City will undertake all necessary isolations and shut-downs of operating equipment and systems.
- 4.2 The City will provide access to existing City buildings, facilities, and structures.

5. SEQUENCE OF CONSTRUCTION

- 5.1 Prior to mobilization, the Contractor will be required to adhere to the following sequencing requirements:
 - .1 Submit technical submittals to the City Representative for review and approval. Technical submittals will consist of the following:
 - .i Contractor Site-Specific Health and Safety Plan.
 - .ii Contractor trade certificates and training records.
 - .iii Construction schedule.
 - .iv Traffic Control Plan (if applicable).
 - .v Erosion and Sediment Control Plan (if applicable).
 - .vi Quality Assurance and Quality Control Plan.
 - .2 Obtain confirmation from the City Representative that the technical submittals presented above have been approved.
- 5.2 The City Representative may choose to delay mobilization activities, at no additional cost or impact to the project schedule, should the specified technical submittals not be submitted and approved prior to the start of mobilization activities.
- 5.3 Prior to initiating construction activities in the field, the Contractor will be required to adhere to the following sequencing requirements:
 - .1 Submit relevant shop drawings to the City Representative for review and approval prior to commencing the installations in the field.
 - .2 Obtain confirmation from the City Representative that the shop drawing(s) have been approved.
 - .3 Commence relevant installations related to approved shop drawings in the field.
- 5.4 The City Representative may choose to reject the installations in the field, at no additional cost or impact to the project schedule, if the relevant shop drawings are not approved prior to installation in the field.

- 5.5 The City Representative will be provided five (5) business days to review relevant technical submittals and shop drawings. The City assumes only one (1) round of reviews for technical submittals and shop drawings. The Contractor will not be granted an extension of time or a change to the contract price, should the Contractor not address all review comments from the first submission, and require a subsequent review of a second or further resubmission(s).
- 5.6 Prior to backfilling an excavated trench where new civil installations or repairs have taken place, allow for the inspection of the works by the City Representative. Should the Contractor backfill the site, while failing to present the works and provide indication to the City Representative that the works are ready for an inspection, the Contractor will be required to re-excavate the site in order to allow for an inspection of the works to take place at no change to the contract price and no extension to the contract schedule.

END OF SECTION

G. PAYMENT PROCEDURES

1. TERMS OF PAYMENT

- 1.1 Make applications for payment on account as provided in Agreement as Work progresses.
- 1.2 Applications for payment will be made monthly.
- 1.3 The date for Contractors submission of monthly application for payment shall be on the last business day of the month.
- 1.4 The Contractor shall be reimbursed on a monthly basis in accordance with the instructions provided in the Bid Form.
- 1.5 For administrative purposes, the monthly application for payment shall be in the form of a progress payment and must indicate:
 - .1 Contract/ Project Title.
 - .2 City of Iqaluit Service Contract number.
 - .3 Progress payment number.
 - .4 Date progress payment issued.
 - .5 Period progress payment covers.
- 1.6 The Contractor is to provide all relevant back-up material to validate the work that is being claimed in the monthly progress payment. This includes, but is not limited to, daily timesheets for labor and equipment, material costs, back-up invoices, etc. For work completed on a time and materials basis where daily timesheets are produced, the Contractor must present timesheets to the City Representative at the end of each workday for review and approval.
- 1.7 The City shall reimburse Contractors for mark-ups from sub-contractors and/ or suppliers for parts, materials, and labor up to a maximum of 15%. Back-up invoices from sub-contractors and/ or suppliers/ vendors must be submitted as part of monthly application for payment. Monthly progress claims will be returned if back-up invoices are not provided.
- 1.8 No payment will be made for the cost of work incurred to remedy errors or omissions for which the Contractor is responsible.
- 1.9 Additional work that has been completed outside the scope of services identified in the contract, without written approval from the City Representative via the change order process, will not be paid. Contemplated changes must be presented to the City Representative for review. Should the contemplated change be endorsed, it will be presented to the City for approval via a change order. Once approved, the Contractor may proceed with the work in the field. Failure to comply with this requirement may result in no payment.

- 1.10 All progress payment claims are to be submitted to the City Representative; they are not to be submitted to the City's Finance Department.
- 1.11 The City will pay all invoices on a Net 30 basis, meaning payments will be made by the City within Thirty (30) calendar days of receipt and acceptance of the invoice, or the receipt and acceptance of the goods or services, whichever is later.

2. SCHEDULE OF VALUES

- 2.1 Make schedule of values out in such form and supported by such evidence as City Representative may reasonably direct and when accepted by City Representative, be used as basis for applications for payment.
- 2.2 Include statement based on schedule of values with each application for payment. Schedule of values to follow Terms of Reference sections outline.
- 2.3 Support claims for products delivered to Place of Work by not yet incorporated into Work by such evidence as City Representative may reasonably require establishing value and delivery of products.

3. APPLICATION FOR PAYMENT

- 3.1 Each month prepare a draft application for payment in the form of a progress payment claim for review and acceptance by the City Representative before submitting the monthly application for signature and payment.
- 3.2 Application for payment must show a schedule of values, for each item of approved breakdown of Contract Price established in the Contract, the following:
 - .1 Percentage and value of Work completed to date.
 - .2 Percentage and value of Work previously approved for payment.
 - .3 Percentage and value claimed this payment period.
 - .4 Percentage and value of Work remaining to be completed.
 - .5 Include separate line items for each approved Change Order executed, along with the information requested in 3.2(1), 3.2(2), 3.2(3), and 3.2(4).
- 3.3 Application for payment must include timesheets, back-up invoices from sub-contractors and/ or suppliers/ vendors, whichever applies. Where mark-ups apply per the Contract, ensure they are clearly shown.
- 3.4 Include an updated cash flow expenditure forecast with the application for payment.
- 3.5 Submit application for payment to the City Representative on the last business day of each month.

- 3.6 To assist the Contractor with preparation of application for payment, the City Representative is available to meet with the Contractor on an agreed date each month, on or prior to last day of month, to review progress of Work.
- 3.7 The Contractor and City Representative shall agree on quantity of Work performed and due for payment. Once quantity has been agreed upon, Contractor shall submit the final application for payment along with a corresponding invoice for the amount being claimed.
- 3.8 The following shall be included for the first application for payment:
- .1 Approved monthly progress claim.
 - .2 Coinciding invoice.
 - .3 A copy of Workers Safety Compensation Board Certificate of Clearance.
 - .4 Updated construction schedule.
 - .5 Updated cash flow projection.
- 3.9 The following shall be included for the second application for payment and onwards:
- .1 Approved monthly progress claim.
 - .2 Coinciding invoice.
 - .3 A copy of Workers Safety Compensation Board Certificate of Clearance.
 - .4 Statutory Declaration certifying that payment has actually been made in full to all subcontractors, suppliers, workmen, and others for labour, materials, and services required by Contract up to and including latest progress payment.
 - .5 Updated construction schedule.
 - .6 Updated cash flow projection.
- 3.10 The City shall not release monies for Payment Certificates until the Contractor has provided all of the supporting documentation, as specified herein.
- 3.11 Deviations from the above specified requirements or incomplete submissions shall require resubmission of the application for payment.

4. NONPAYMENT FOR REJECTED OR UNUSED PRODUCTS

- 4.1 Payment will not be made for the following:
- .1 Loading, hauling, and disposing of rejected material.
 - .2 Quantities of material wasted or disposed of in a manner not called for under Contract Documents.

- .3 Rejected loads of material, including material rejected after it has been placed by reason of failure of Contractor to conform to provisions of Contract Documents.
- .4 Material not unloaded from transporting vehicle.
- .5 Defective Work not accepted by Owner.
- .6 Material remaining on hand after completion of Work.

END OF SECTION

H. PROJECT MEETINGS

1. GENERAL

- 1.1 The City Representative will schedule the project meetings throughout progress of the Work.
- 1.2 The City Representative will prepare meeting agenda with regular participant input and distribute the written notice of each meeting, preside at meetings, record minutes to include significant proceedings and decisions, and reproduce and distribute copies of minutes within five (5) business days after each meeting to participants and parties affected by meeting decisions.
- 1.3 Representatives of Contractor, Subcontractor and suppliers attending meetings shall be qualified and authorized to act on behalf of the party each represents.

2. PRECONSTRUCTION MEETING

- 2.1 After award of Contract, the City Representative will request a meeting of parties in contract to discuss and resolve administrative, health and safety procedures and responsibilities.
- 2.2 Preconstruction meeting will be held via teleconference. Teleconference instructions will be provided by the City Representative.
- 2.3 Preconstruction meeting agenda may include the following, as a minimum:
 - .1 Introductions.
 - .2 Project Initiation.
 - .i Service Contract Review.
 - .ii Securities/ Bonds.
 - .iii Insurance.
 - .iv WSCC Certificate of Clearance.
 - .3 Safety.
 - .i Site Safety Requirements.
 - .ii WSCC “*New Operations & High Hazard Work*” Notice.
 - .iii Joint Health and Safety Committee or Occupational Health and Safety Representative.
 - .iv Site Audits, Inspections and Incident Reporting.
 - v. Training, Qualifications and Trade Certificates.

- .4 Project Execution Requirements .
 - .i Summary of Work.
 - .ii Working Hours, Working Days
 - .iii Construction Sequencing/ Coordination.
 - .iv Contractor's Use of Premises.
 - .v Authorities Having Jurisdiction (GN/ Federal permits and inspections).
 - .vi Special Project Procedures (Work Permits, Traffic Control, etc.).
 - .vii Project Meetings.
 - .viii Submittals and Shop Drawings.
 - .ix Payment Procedures.
 - .x Change Orders.
 - .xi Quality Control.
 - .xii Closeout Requirements.
- .5 Project Schedule.
 - .i Schedule Submission.
 - .ii Key Milestone Dates.
 - .iii Substantial Completion Submission Requirements.
 - .iv Warranty (if applicable).
- .6 Communication Structure
 - .i Stakeholder Representation.
 - .ii Communication Flow.
 - .iii Communication of Changes in Scope, Schedule or Cost.
 - .iv Site Communication Memos – RFI's, SI's, CCN's.
- .7 Document Control
- .8 Other Business and Questions.

2.4 Attendees will include:

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- .1 Owner's representatives.
- .2 City Representative.
- .3 Contractor's project manager.
- .4 Contractor's resident site superintendent.
- .5 Contractor's quality control representative.
- .6 Others as appropriate.

3. PROGRESS MEETINGS

- 3.1 City Representative will schedule regular progress meetings at site, conducted bi-weekly to review the Work progress, progress schedule, shop drawings and technical submittal schedule, application for payment, contract modifications, and other matters needing discussion and resolution.
- 3.2 Progress meetings will be held via teleconference. Teleconference instructions will be provided by the City Representative.
- 3.3 Project progress review meeting agenda may include the following, as a minimum:
 - .1 Introductions.
 - .i Confirm Acceptance of Previous Meeting Minutes.
 - .2 Safety.
 - .i Safety Share.
 - .ii Site Safety Audits, Inspections and Incident Reporting.
 - .3 Submittals and Shop Drawings.
 - .i Status of Technical Submittal Submissions/ Reviews.
 - .ii Status of Shop Drawing Submissions/ Reviews.
 - .4 Site Communications.
 - .i Request for Information (RFI) – Status Update/ Outstanding Items.
 - .ii Site Instructions (SI) – Status Update/ Outstanding Items.
 - .iii Contemplated Change Notices (CCN) – Status Update/ Outstanding Items.
 - .5 Financial.

- .i Progress Claims – Status Update/ Outstanding Items.
 - .ii Change Orders – Status Update/ Outstanding Items.
 - .iii Service Contract Financial Review.
 - .6 Work Progress.
 - .i Work Completed (Since Last Meeting).
 - .ii Work Planned (Three-Week Look-ahead/ Schedule) Review.
 - .iii Issues/ Concerns/ Risks and Mitigation Measures.
 - .iv City/ Engineer Coordination Requirements.
 - .7 Quality Control.
 - .i Contractor Activities.
 - .ii Status of Permitting and Inspections.
 - .8 Other Business and Questions.
- 3.4 Attendees will include:
- .1 Owner's representative.
 - .2 City representative.
 - .3 Contractor's project manager.
 - .4 Contractor's site superintendent.
 - .5 Others as appropriate.

4. OTHER MEETINGS

- 4.1 In accordance with Contract Documents and as may be required by the Owner and/or City Representative.
- 4.2 Brief meetings attended by the Contractor's key personnel, the City Representative and as required, the Owner's representative, may be coordinated in order to help assist with other project related discussions such as isolation requirements, critical path tasks, schedule, quality, commissioning, claims, deficiencies, etc. in order to help with the progress of the work. The Contractor is to accommodate other meetings at no additional cost to the contract.
- 4.3 Meetings will be held via teleconference. Teleconference instructions will be provided by the City Representative.



CONSTRUCTION SERVICES
PART IV – GENERAL REQUIREMENTS



END OF SECTION

I. CONSTRUCTION PROGRESS SCHEDULE

1. CONTRACTOR'S RESPONSIBILITIES

- 1.1 Prepare and submit to the City Representative a Construction Progress Schedule including a comprehensive work breakdown schedule complete with sequencing or implementation of each work tasks and work packages within five (5) business days of award of Contract. The schedule must reflect working days/ hours as per the contract. The schedule must show the following as a minimum:
 - .1 Mobilization and other preliminary activities such as installation of site fencing, trailer, signage, traffic control measures, etc.
 - .2 Submission of shop drawings, technical submittals, product data, material lists and samples.
 - .3 Delivery of any critical equipment and/or materials that will be key to the Works.
 - .4 Submission of key requests to the City such as isolation requests and City permit applications.
 - .5 Isolation and/or shutdown of City processes or systems by City Operations personnel, implementation of temporary by-pass systems, etc.
 - .6 Commencement and completion of work of each section of the terms of reference for each of the contract components as required y and described in the plans and terms and reference.
 - .7 Critical hold points which require the inspection and/or witness of the works by the City Representative, as described in the contract documents.
 - .8 Testing activities, commissioning, start-up and operating of the new equipment and/or systems.
 - .9 Substantial performance and final completion dates within time period required by the Contract Documents.
 - .10 Demobilization
- 1.2 Schedule shall represent a practical plan to complete the work within the Contract period and shall convey the plan to execute the work. Schedules as developed shall show the sequence and interdependencies of activities required for complete performance of the work.
- 1.3 Use extra forces and equipment, or revise method of operation when progress of work is not sufficient to meet Project Schedule.
- 1.4 Reviews of work progress based on Construction Schedule, will be conducted by the City Representative and schedule updated by Contractor in conjunction with and subject to approval of the City Representative.

- 1.4 Construction schedule shall be updated monthly with the payment schedule for the duration of the Contract.
- 1.5 Failure to include any element of work required for performance of the Contract or failure to properly sequence the work shall not excuse the Contractor from completing all work within the Contract Time.
- 1.6 All schedule submittals, excluding monthly progress reports, are subject to approval by the City Representative. The City Representative retains the right to withhold appropriate monies (up to the full value of the current progress payment) from progress payments until the Contractor submits an acceptable construction progress schedule. Update schedule updates acceptable to the City Representative.
- 1.7 Certify in writing and have signed by major subcontractors that the construction progress schedule have been discussed in detail with all major subcontractors and major suppliers as it relates to their respective work and submit a copy of the certificate to the City Representative.
- 1.8 All schedules shall be developed utilizing industry standard “best practices” including, but not limited to:
 - .1 No open-ended activities.
 - .2 No use of constraints other than those defined in the Contract Documents without the prior approval of the City Representative.
 - .3 No negative leads or lags.
 - .4 No excessive leads or lags without prior justification and approval from the City Representative.
 - .5 For individual schedule construction activities, do not exceed 14 calendar days in duration without prior approval of the City Representative. Subdivide activities exceeding 14 calendar days in duration to an appropriate level.
 - .6 Sufficiently describe schedule activities to include what is to be accomplished in each work area. Express activity durations in whole days. Clearly define work that is to be performed by subcontractors.
 - .7 Create the schedule in conformance with the work-hours, constraints, and Activity Code Structure, set forth in these Contract Documents.
 - .8 Activity Code Structure
 - .i Each activity shall be identified with codes including as a minimum:
 - .a The party responsible for performing the work.
 - .b Where work is to be subcontracted, the subcontractor to be responsible for performing the work.

2. CONSTRUCTION SEQUENCING

- 2.1 Contractor is instructed to perform this work without disrupting current operating facilities, structures, and/or City services when applicable.
- 2.2 Contractor to prepare schedule and duration of all anticipated by-passes or shutdown of any existing facility. Schedule to be reviewed by the Owner for approval. Furthermore, the Contractor shall provide notice as described in Section C - Coordination to the Owner for each and every scheduled by-pass, tie-in to and shutdown of existing facilities, structures, processes, or systems. Required notice plus the Owner's approval are required for all non-scheduled by-passes, tie-in to and shutdowns.
- 2.3 Any and all un-scheduled shutdown is the responsibility of the Contractor. Thus, all or any additional labour, testing, material and equipment required by the Owner to correct or assist in coordination and correction of deficiencies as a result of an un-scheduled shut down is at the Contractor's costs.

3. MONTHLY CONSTRUCTION SCHEDULE UPDATE

- 3.1 Submit once per month, a monthly construction progress schedule update showing the progress of the work to date. The updated progress schedule must be submitted with the monthly progress payment application.
- 3.2 Include with the update an electronic back-up of the native schedule file.
- 3.3 Payment will not be made without an approved construction progress schedule, and monthly construction progress schedule update.
- 3.4 The monthly construction progress schedule update shall have a data date as of the last day of the corresponding month (i.e. for schedules submitted at the beginning of February the data date shall be January 31).
- 3.5 Incorporate actual progress, start dates, completion dates, and progress up to the data date in the schedule update. All changes and revision made in the monthly construction progress schedule update shall be addressed in the narrative accompanying the submittal.
- 3.6 Change Orders will be addressed in accordance with the General Conditions and incorporated into the Contract construction progress schedule as individual schedule activities.
- 3.7 Payment will not be made without current approved monthly construction progress schedule update.
- 3.8 Any changes made to the schedule shall also include changes to the cost loading/ expenditure forecast. All the remaining activities to be completed shall equate to the remaining cost of the Work. Any addition or deletions to activities to the schedule will require subsequent revisions to ensure that the schedule continues to correlate to the current Schedule of Values.

- 3.9 If according to the current updated Contract construction progress schedule, the work is fourteen or more days behind the Contract completion date, or the schedule contains fourteen or more days of negative float, considering all granted time extensions, submit, prior to the next progress payment, a revised recovery schedule, showing a work plan to complete the work within the original schedule period. Include with the submittal a detailed narrative describing the means and methods proposed to achieve the work in the time period. The City Representative may withhold approximate progress payments until a revised schedule, acceptable to the City Representative, is submitted by the Contractor at no additional expense to the Owner.

4. RE-BASELINE CONTRACT CONSTRUCTION PROGRESS SCHEDULE

- 4.1 If, in the opinion of and at the request of the City Representative, the work has significantly fallen behind and/or the nature or plan of the work has changed from that which was originally portrayed in the Contract construction progress schedule, a Re-Baselined construction progress schedule shall be submitted that portrays the plan to complete the remaining Contract Work.
- 4.2 The Re-Baselined construction progress Contract Schedule shall be cost-loaded and be the basis for all subsequent monthly construction progress schedule updates.

5. THREE-WEEK LOOK-AHEAD

- 5.1 Submit a Gantt chart format depicting the intended work activities for the upcoming three-week period plus one-week retrospective look on a weekly basis.
- 5.2 All activities in the Three-Week Look-Ahead Schedule must correlate to an activity in the current monthly construction progress schedule update either as a one-to-one match, or as a subset of activities whose cumulative duration correlate to an activity in the monthly construction progress schedule update.
- 5.3 Note and explain in writing all deviations, including but not limited to sequences of work, timing, and durations or activities, from the Contract construction progress schedule or monthly construction progress schedule updates. These deviations must be addressed in the following monthly construction progress schedule update.
- 5.4 Portray all activities clearly and legibly on the schedule and include logical activity numbers.
- 5.5 Submit the schedule at the bi-weekly construction progress meeting.

6. MONTHLY EXPENDITURE/ CASH FLOW FORECAST

- 6.1 Submit on a monthly basis, an update to the monthly expenditure/ cash flow forecast. The cash flow forecast is to be submitted as part of the Contractors monthly progress payment application.
- 6.2 The Monthly Expenditure/ Cash Flow Forecast shall be presented in a manner that best illustrates how the Contractor intends to invoice, on a monthly basis, based on the Contractor understanding of the Work, methodologies to be used, and the Contract construction progress schedule.

7. REVIEW, UPDATE AND REVISIONS

- 7.1 Allow for the City Representative review and comments according to the following schedule from the date of receipt.
- .1 Draft Contract construction progress Schedule: 7 calendar days
 - .2 Contract construction progress Schedule: 4 calendar days
 - .3 Monthly construction progress schedule Updates: 4 calendar days
 - .4 Three-Week Look-Ahead Schedule: 2 calendar days
- 10.2 Make all corrections to the schedule requested by the City Representative and resubmit the schedule for approval if requested. If the Contractor does not agree with the City Representative's comments, provide written notice of disagreement within five (5) business days from the receipt of City Representative comments for the Preliminary 60-day, Contract Construction Progress Schedule, Monthly Construction Progress Schedule Updates, and Three-Week Look-ahead Schedules. City Representative's comments for which the Contractor disagrees shall be resolved in a meeting held for that purpose, if necessary.

8. REQUESTS FOR TIME EXTENSIONS

- 8.1 Be responsible for submitting a written request for all extensions of Contract Time in accordance with the General Conditions. Requests not submitted in writing, without the required documentation and not submitted in a time consistent with the General Conditions will not be considered.
- 8.2 Include in the request documentation and written justification for the extension of time, supporting evidence and specific references to the schedule.
- 8.3 Also include with request an analysis of a calendar time-scaled Construction Progress Schedule and reports depicting the time impact basis of the request with the affected areas prominently highlighted. Use only the most current accepted schedule at the time the impact occurred when determining time extension request.
- 8.4 If the City Representative finds that the Contractor is entitled to an extension of time of any completion date under the provisions of the Contract, the City Representative's determination of the total number of days extension will be based upon the current analysis of the Contract Construction Progress Schedule and upon data relevant to the extension. Extensions of time for performance under all of the provisions of the Contract will be granted only to the extent that equitable time adjustments for the activity or activities affected exceed the total float along the paths involved of the accepted and current Contract Construction Progress Schedule.

END OF SECTION

J. SUBMITTAL PROCEDURES

1. SUMMARY

- 1.1 This section defines the submittals to the Owner, or their designate, necessary before, during and after construction, which include as a minimum:
 - .1 Site-Specific Health and Safety Plan.
 - .2 Construction Progress Schedule.
 - .3 Shop Drawings for permanent and temporary works.
 - .4 Product data and samples.
 - .5 QA/QC tests and reports.
 - .6 Concrete mix design.
 - .7 Erosion and Sediment Control Plan.
 - .8 Selective Demolition Plan and Schedule.
 - .9 Guaranties and Warranties.
 - .10 Traffic Control Plan.
 - .11 Temporary works plans (i.e. By-Pass Plan, Servicing Plan, Water Management Plan, Shoring/ Bracing Plan, Critical Lift Plan, etc.).
- 1.2 For submittals facsimile transmissions will not be acceptable.
- 1.3 Do not proceed with work until the City Representative reviews relevant submissions.
- 1.4 Refer to individual sections for other submission requirements.

2. ADMINISTRATIVE

- 2.1 Submit to the City Representative a list of all submittals and shop drawings for review within seven (7) business days of the Award of the Contract. Submit within reasonable promptness and in orderly sequence so as not to cause delay in Work. Failure to submit in ample time is not considered sufficient reason for an extension of Contract Time and no claim for extension by reason of such default will be allowed.
- 2.2 Work affected by submittals shall not proceed until review is complete.
- 2.3 Present shop drawings, technical submittals, product data and reports in SI Metric units.
- 2.4 Present shop drawings, technical submittals, product data and reports in the English language.

- 2.5 Where items or information is not produced SI Metric units, converted values are acceptable.
- 2.6 Review submittals prior to submission to City Representative. 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. Submittals not stamped, signed, dated and identified as to specific project will be returned without being examined and shall be considered rejected.
- 2.7 Notify the City Representative, in writing at time of submission, identifying deviations from requirements of Contract Documents stating reasons for deviations.
- 2.8 Verify that field measurements and affected adjacent work are coordinated.
- 2.9 Contractor's responsibility for errors and omissions in submission is not relieved by City Representative's review of submittals.
- 2.10 Contractor's responsibility for deviations in submission from requirements of Contract Documents is not relieved by the City Representative's review.
- 2.11 Keep one reviewed copy of each submission on site for reference during the construction.
- 2.12 Refer to other individual sections for specific requirements on shop drawings submission.

3. PROCEDURES

- 3.1 Direct all submittals to the City Representative.
- 3.2 Unless indicated otherwise, submit one (1) electronic copy of all submittals.
- 3.3 Electronic Submittals:
 - .1 Each electronic submittal shall be searchable in Adobe Acrobat Portable Document Format (PDF).
 - .2 Electronic submittal that contains more than 10 pages in PDF format shall contain internal book marking from an index page to major sections of the document.
 - .3 PDF files shall be set to open "Bookmarks and Page" view.
 - .4 Include a copy of the Transmittal of Contractor's Submittal form with each electronic submittal.
 - .5 Submit new electronic files for each resubmittal.
 - .6 Detailed procedures for handling electronic submittals will be discussed at the preconstruction meeting.
 - .7 Submittals without electronic copies will be rejected by the City Representative.

3.4 List of Submittals:

- .1 Within seven (7) working days of Contract Award, submit a complete list of anticipated submittals and shop drawings, as per the requirements of the contract.
- .2 For each section of the general requirements and terms of reference, the Contractor shall provide a table listing all the submittals anticipated for that section of the Contract. The table shall include the following information:
 - .i General Requirements or Terms of Reference Section.
 - .ii Total number of submittals for this Section.
 - .iii Shop drawings associated with each submittal.
 - .iv Revision and status for each submittal.

3.5 Transmittal of Submittal:

- .1 Accompany each submittal with a transmittal letter, containing:
 - .i Project title and number.
 - .ii Date of submittal.
 - .iii Names of Contractor, Subcontractor or Supplier, and manufacturer as appropriate.
 - .iv Numbering and Tracking System:
 - .a Sequentially number each submittal.
 - .b Resubmission of submittal shall have original number with sequential alphabetic suffix.
 - .v Name, tag No. and quantity of equipment/ system included in each submittal.
 - .vi General Requirement and Terms of Reference Section and paragraph to which submittal applies.
 - .vii Deviation or variation from Contract Documents.
 - .viii Contractor's stamp, signature and statement to certify that the submittal has been reviewed, checked, and approved for compliance with Contract Documents.
 - .ix Include the Contractor's written response to each of the City Representative's review comments with resubmission of submittals stamped "Revise and Resubmit".

.x Other pertinent data.

3.6 Processing Time:

- .1 Time for review shall commence on City Representative's receipt of submittal.
- .2 The City Representative will act upon the Contractor's submittal and transmit response to Contractor not later than five (5) working days after receipt, unless otherwise specified.
- .3 Resubmittals will be same review time unless otherwise specified.
- .4 No claims will be allowed that arise because of delays in re-submissions and review of shop drawings.

3.7 Resubmittals:

- .1 Clearly identify each correction or change made and include revision date.
- .2 Provide clear response to each itemized comment by the City Representative on the submittal, whether or not action has been taken, and description of action.
- .3 No adjustment of Contract Times or Price will be allowed due to delays in progress of Work caused by rejection and subsequent resubmittals.
- .4 The Contractor is noted that the first two submission of each submittal (original submittal and subsequent resubmittal) will be reviewed at no charge to the Contractor. Any cost for processing/ reviewing submittals which have been reviewed two times or more will be deducted from the contract amount owed to the Contractor.

3.8 Incomplete Submittals:

- .1 The City Representative will return entire submittal for the Contractor's revision if preliminary review deems it incomplete.
- .2 When any of the following are missing, submittal will be deemed incomplete:
 - .i Transmittal of Contractor's submittal, completed and signed.
 - .ii Insufficient number of copies.
 - .iii All requested information is not provided.
 - .iv Submittals missing Professional Engineer's seal and signature, where it is required.

END OF SECTION

K. HEALTH AND SAFETY REQUIREMENTS

1. REFERENCES

- 1.1 Canada Labour Code, Part 2, Canada Occupational Safety and Health Regulations.
- 1.2 Nunavut Safety Act, R.S.N.W.T. 1988, c-S-1 most recently amended and in force June 19, 2016.
- 1.3 Nunavut Occupational Health and Safety Regulations, R-003-2016, most recently amended and in force June 19, 2016.

2. GENERAL REQUIREMENTS

- 2.1 The Contractor shall hold the responsibility of *Prime Contractor*, as described in the Nunavut Safety Act, and shall be solely responsible for construction safety, ensuring compliance to the Safety Act and Regulations.
- 2.2 Perform site specific safety hazardous assessment related to project.
- 2.3 Develop written site-specific Health and Safety Plan based on hazard assessment prior to commencing any site Work and continue to implement, maintain, and enforce plan until final demobilization from site.
- 2.4 The Contractor shall file a *New Operations & High Hazard Work* notice for the Works with the Workers' Safety and Compensation Commission (WSCC) prior to commencement of Work. Submit relevant documents to City Representative, providing indication that notice has been submitted. The Contractor will not be allowed to commence construction activities until notice has been filed and acknowledged by WSCC. Failure to submit a notice and provide record of such communication to the City Representative prior to the start of Works will not be considered sufficient reason for an extension of Contract Time and no claim for extension by reason of such default will be allowed. The *New Operations & High Hazard Work* notice must be posted at the construction site as per requirements of the Safety Act.
- 2.5 Meet or exceed the latest revision of all Local, Federal, Territorial laws, regulations, standards, and industry best practices relating to health and safety.
- 2.6 Be solely responsible for safety of the Work under this Contract and for complying with and ensuring that every person on the Site complies with the requirements contained within the Contract Documents and regulatory requirements.
- 2.7 Perform the Work, or ensure that it is performed, in a manner to avoid risk of injury, security or damage to persons or property, adjacent property, or environment.
- 2.8 Provide safe access, egress, and equipment in accordance with Occupational Health and Safety Regulations for entry into all areas by the employees, subcontractors, City, and Consultant. Where hazardous areas or confined space entry exists, implement procedures defined by the latest revision of the applicable Occupational Health and Safety Regulations or the Electrical Code.

- 2.9 Prior to the commencement of the Work, review and become fully familiarized with all Local, Territorial, and Federal regulatory requirements and the following documentation:
- i. Nunavut's Safety Act and applicable regulations.
 - ii. Nunavut's Workers' Compensation Act and applicable regulations.
 - iii. Nunavut's Environmental Protection Act and application regulations.
 - iv. Canadian Electrical Code.
 - v. Contract Documents.
- 2.10 The Contractor shall be solely responsible for construction safety for this Contract and for complying with and ensuring that every person on the Site complies with the measures and requirements contained in:
- i. Nunavut's Safety Act and applicable regulations.
 - ii. Nunavut's Workers' Compensation Act and applicable regulations.
 - iii. Nunavut's Environmental Protection Act and application regulations.
 - iv. Canadian Electrical Code.
 - v. Contract Documents.
- 2.11 In event of a conflict between any provisions of the above authorities, the most stringent provision shall govern.
- 2.12 Provide and maintain first aid, hygiene, washrooms, potable water, and fire protection equipment at the Site in accordance with the applicable regulatory requirements. The Contractor shall designate trained employees to be in charge of first aid on the Site.
- 2.13 Establish, maintain, and mark clear routes, paths and points for routine and emergency exit to, from and within the Site for personnel and vehicles.
- 2.14 The Contractor shall erect signs relating to safety on the Site, and signs or notices required by the applicable territorial and local regulations or by the Contract Documents.
- 2.15 Erect signage acceptable to the City at all entry points to the Site to advise personnel entering the Site of the requirements respecting the use and wearing of personal protective equipment. And the Contractor shall ensure compliance with these requirements.
- 2.16 Erect signage acceptable to the City at all entry points to the Site to advise the employees, Subcontractors and other individuals entering the Site that:
- i. All personnel and employees on the Site are required to comply with safety policies, procedures and instructions of the Contractor.

- ii. That any personnel failing to adhere to the safety policies, procedures and instructions of the Contractor may be removed from the Site and denied further access.
- 2.17 The Contractor shall post warning signs at hazardous areas or where hazardous materials are stored and install protective barriers. The Contractor shall instruct personnel of proper safety procedures.
- 2.18 The Contractor shall identify all areas which are considered to be hazardous locations and comply with requirements of the Government of Nunavut Labour Standards Office.
- 2.19 Smoking is not permitted in hazardous areas or other areas as designated by the City. The Contractor shall post “No Smoking” signs as required.
- 2.20 The Contractor shall inspect the physical condition of the workplace at least weekly, or as often as required by territorial health and safety regulatory requirements, in order to ensure that the Work is performed safely and that the Site is maintained in accordance with the territorial regulatory requirements and the Contract Documents. The Contractor shall prepare and maintain a documented record of each inspection describing the scope of inspection and findings. Copies of all safety inspections shall be kept on Site and available for review by the City Representative.
- 2.21 Safety equipment such as gas detection equipment for explosive or toxic gases or oxygen deficiency, fall protection devices, etc., shall be made available by the Contractor to the City Representative for the access to the site when required. The Contractor shall be responsible for the coordination of the multiple-party access to the hazardous and confined space on the Site.
- 2.22 The Contractor should use the lock-out /tag-out whenever electrical work is required. Switch off the breaker in the MCC or power panel and follow the lock and tag procedure before starting the work.
- 2.23 Ensure adequate coordination and communication between all parties on site in regard to safety.
- 2.24 In addition to Occupation Health and Safety Act and applicable Regulations reporting requirements, report all incidents, near misses, spills, environmental damage, and property damage to the City Representative immediately within four (4) hours of the event. An incident investigation must be conducted, and a copy of the complete report provided to the City Representative within 24 hours.
- 2.25 Ensure that all employees and subcontractors are competent, as prescribed by the applicable legislation, in performing the Work and have been trained on the Contractor's Site-Specific Health and Safety Plan and COVID-19 Mitigation Plan prior to starting Work on the Contract. The Contractor shall make available all training records for the City Representative's review.
- 2.26 The Contractor shall ensure all workers that perform work be certified under the Trades and Qualifications and Apprenticeship Act for their specific work activity. No worker shall perform a type of work unless he/ she is certified to do so.

- 2.27 The Contractor shall appoint a competent person, as defined by the Safety Act, as a supervisor.
- 2.28 The Contractor shall appoint a Joint Health and Safety Committee or Occupational Health and Safety Representative, as defined by the Safety Act, for the project.
- 2.29 The supervisor shall supervise the work at all times either personally or by having an identified assistant do so personally. The assistant must comply with all the same requirements that the supervisor is held to.
- 2.30 The supervisor shall inspect the work site and equipment associated with the project at least once a week. A copy of the inspection report must be provided to the City Representative.
- 2.31 The Contractor shall remove waste material and debris from the work site(s) to a disposal area at least once a day or more frequently if necessary, to prevent the creation of a hazardous condition.
- 2.32 The Contractor shall ensure that a First Aid kit is provided and maintained on site at all times, in accordance with relevant health and safety regulations.
- 2.33 The Contractor shall ensure that fire-extinguishing equipment is provided and maintained on site at all times, in accordance with relevant health and safety regulations.
- 2.34 The Contractor shall ensure that all vehicles, machinery, tools and equipment used on the work site are operated and maintained in accordance with relevant health and safety regulations.
- 2.35 The Contractor will be required to conduct weekly safety audits, in order to ensure compliance to the Site-Specific Health and Safety Plan. Safety Audit reports are to be submitted to the City Representative on a weekly basis.
- 2.36 City Representative may respond in writing, where deficiencies or concerns are noted and may request re-submission with correction of deficiencies or concerns.
- 2.37 Ensure applicable items, articles, notices and orders are posted in conspicuous location on site in accordance with Acts and Regulations of Territory having jurisdiction, and in consultation with City Representative.

3. SUBMITTALS

- 3.1 Make submittals in accordance with Section J – Submittal Procedures.
- 3.2 The Contractor shall submit a Site-Specific Health and Safety Plan within seven (7) business days after the Award of the Contract, to address the requirements of the above referenced regulations and contract documents.
- 3.3 A Site-Specific Health and Safety Plan must be in place prior to the start of construction activities. If a Site-Specific Health and Safety Plan has not been submitted prior to the start of the Works, the City Representative may issue a stop work order, until one is presented which meets the requirements of the regulations and contract documents.

Failure to submit a Site-Specific Health and Safety Plan within the required timelines, which meets the requirements of the contract, will not be sufficient reason for an extension of Contract Time or additional compensation, and no claim for extension or additional costs by reason of such default will be allowed.

3.4 The Contractor shall provide a health and safety plan which as a minimum will include:

.1 A Site-Specific Health and Safety Management Plan, includes:

- .i Introduction, roles and responsibilities for:
 - .a Site Supervisor
 - .b Project Manager
 - .c Site Safety Coordinator
 - .d Site Workers
 - .e Occupational Health and Safety Representative
 - .f Joint Health and Safety Committee
- .ii Contractor Project/ Contract Organizational Chart
- .iii Training and certification of workers.
- .iv Orientation for new works or visitors to site.
- .v Project hazard assessment and safety procedures.
- .vi Safety meetings format and schedule.
- .vii Site safety audits, inspections, and incident reporting.
- .viii Workplace hazardous materials information.
- .ix Tagging and lock out procedures.
- .x Confined space entry procedure.
- .xi Work on or near live apparatus.
- .xii Hot works procedures.
- .xiii Posting of information.
- .xiv Housekeeping.

.2 A Hazardous Identification Plan, includes primary environmental hazards, personal conduct and hygiene, potential hazards which include:

- .i Survey work in traffic.
- .ii Physical.
- .iii Working at heights.
- .iv Fire and explosion.
- .v Confined space entry.
- .vi Cranes, hoists, and rigging.
- .vii Crane suspended personnel platforms.
- .viii Biological.
- .ix Stress and fatigue.
- .x Noise.
- .xi Cold Weather.
- .xi Wildlife
- .xii Personal security.
- .xiii Adverse weather conditions.
- .xiv Other site activities.
- .3 A Personal Protective Equipment Inventory, which includes:
 - .i Requirements for all site personnel.
 - .ii Selection, maintenance and continual assessment.
- .4 An Emergency Preparedness and Response Plan, which addresses:
 - .i First aid.
 - .ii Fire protection.
 - .iii Critical injury.
 - .iv Accident or incident.
- .5 A COVID-19 Mitigation Plan, which addresses:
 - .i Isolation and quarantine.
 - .ii Social distancing.

- .iii Hand washing and hygiene.
- .iv Masks.
- .6 The plan shall be reviewed by all workers prior to the start of work. The Contractor must obtain sign-off from all workers providing acknowledgement that the plan has been reviewed.
- .7 The plan shall be posted in a visible location on the work site prior to the commencement of any work.

4. CHEMICALS

- 4.1 The Contractor must provide a list of all chemicals to be used on site and a copy of the Material Safety Data Sheet (MSDS) for each chemical to the City Representative prior to being brought onto the job site.
- 4.2 The Contractor must ensure each chemical container brought on site is clearly labelled with the identity of the chemical, information for the safe handling of the chemical and the location of the MSDS.
- 4.3 The Contractor must ensure adequate measures are taken to control the distribution, within the application area or throughout the building, of fumes/ vapours before applying flammable, noxious or volatile materials.
- 4.4 The Contractor may be required to schedule the application of hazardous materials which might affect the well-being of any workers or disrupt work of other contractors and cannot be adequately controlled to prevent such occurrences to evening or weekend periods.
- 4.5 The Contractor must ensure workers wear the required personal protective equipment (respiratory protection, protective clothing, hand protection, eye/face protection, etc.) when working with chemicals.
- 4.6 The Contractor must ensure the safe use and disposal of all chemicals that they are using. No chemicals and/or chemical waste product shall be disposed of on site without prior approval of City Representative.
- 4.7 The Contractor may not store chemicals and compressed gas cylinders on site without approval of the City Representative. If approved, the contractor must ensure incompatible chemicals are stored separately.

5. DESIGNATED SUBSTANCES / HAZARDOUS WASTE

- 5.1 The Contractor shall provide a work plan for the removal of designated substances, in accordance with all applicable legislation, for review and approval to the City Representative.
- 5.2 The Contractor shall provide evidence of competency with regards to the Environmental Protection Act and its regulations, a copy of safe handling work plan prior to commencing with work in the area.

- 5.3 The Contractor shall register the project as a waste generator site, if not already registered, for the waste that will be generated as a result of the work activities related to the project.
- 5.4 The Contractor shall ensure and provide evidence that all hazardous wastes removed from the sites sent to a licensed waste disposal site by a licensed carrier and advise the responsible individual when necessary testing is to be carried out.
- 5.5 The Contractor shall retain copies of all hazardous waste manifests on file.
- 5.6 The Contractor shall inspect the project daily to monitor compliance with designated substances and hazardous waste regulations.
- 5.7 The Contractor shall provide access to the responsible individual for review of all inspection reports.

6. FALL PROTECTION

- 6.1 The Contractor shall comply with the requirements of Sections 57 to 59 of R.R.N.W.T. 1990, c.S-1.
- 6.2 The Contractor shall provide, upon request, proof of worker training in the use of their fall protection systems.
- 6.3 The Contractor shall be responsible for supplying and maintaining all equipment needed to perform this role.

7. CONFINED SPACE ENTRY

- 7.1 The Contractor shall comply with the requirements of Section 36 to 37 of R.R.N.W.T. 1990, c.S-1.

8. LADDERS

- 8.1 The Contractor shall comply with the requirements of Sections 246 to 259 of R.R.N.W.T. 1990, c.S-1.
- 8.2 The Contractor shall be responsible for supplying and maintaining all equipment needed to perform this role.

9. WELDING/ CUTTING

- 9.1 The Contractor shall comply with the requirements of Sections 154 to 167 of R.R.N.W.T. 1990, c.S-1.
- 9.2 The Contractor shall be responsible for supplying and maintaining all equipment needed to perform this role.

10. SCAFFOLDING

- 10.1 The Contractor shall comply with the requirements of Sections 260 to 327 of R.R.N.W.T. 1990, c.S-1.
- 10.2 The Contractor shall design, erect, inspect, maintain and use scaffolding equipment materials, and components in accordance with CAN/CSA-S269.2-M87 (Access Scaffolding for Construction Purposes).
- 10.3 The Contractor shall be responsible for supply and maintaining all equipment needed to perform this role.

11. MOBILE EQUIPMENT

- 11.1 The Contractor shall comply with the requirements of Sections 200 to 242 of R.R.N.W.T. 1990, c.S-1.
- 11.2 The Contractor shall be responsible for supplying and maintaining all equipment needed to perform this role.

12. CONSTRUCTION TOWERS AND HOISTS

- 12.1 The Contractor shall comply with the requirements of Sections 433 to 464 of R.R.N.W.T. 1990, c.S-1.
- 12.2 The Contractor shall provide, upon request, proof of worker training in the safe operation of the crane or similar hoisting device.
- 12.3 The Contractor shall make available all logbooks, inspection records and tests for cranes of similar hoisting devices, upon request.
- 12.4 The Contractor shall be responsible for supplying and maintaining all equipment needed to perform this role.

13. EXCAVATING AND TRENCHING

- 13.1 The Contractor shall ensure no person enters and excavation unless another worker is working above ground close to the excavation or to the means of access to it.
- 13.2 The Contractor shall arrange the locating of buried services prior to commencing an excavation.
- 13.3 The Contractor shall comply with the requirements of Sections 396 to 432 of R.R.N.W.T. 1990, c.S-1.

14. UNFORESEEN HAZARDS

- 14.1 Should any unforeseen or peculiar safety-related factor, hazard, or condition become evident during performance of Work, and follow procedures in place for Employee's Right to Refuse Work in accordance with Acts and Regulations of Territory having jurisdiction. Advise City Representative verbally and in writing.

15. CORRECTION OF NON-COMPLIANCE

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- 15.1 Immediately address health and safety non-compliance issues identified by authority having jurisdiction or by City Representative.
- 15.2 Provide City Representative with written report of action taken to correct non-compliance of health and safety issues identified.
- 15.3 City Representative may stop Work if non-compliance of health and safety regulations is not corrected. Delays due to a stop work caused by non-compliance of health and safety regulations will not be considered sufficient reason for an extension of Contract Time and/or Price, and no claim for extension by reason of such default will be allowed.

END OF SECTION

L. QUALITY CONTROL

1. CONTRACTOR'S RESPONSIBILITY

- 1.1 The Contractor is to implement their own field quality control system that will include, but is not limited to, the following activities:
- .1 Shop drawings, technical submittals, product data and sample reviews.
 - .2 Compaction of backfill and granular base courses.
 - .3 Concrete testing, aggregate testing and cement testing for both cast-in-place concrete, and precast concrete items.
 - .4 Concrete mix design.
 - .5 Welding of structural steel and pipe joints.
 - .6 Pressure testing of pipes.
 - .7 Torque of high-strength bolts.
 - .8 Load tests of structural items.
 - .9 Subgrade examination for load bearing capability if required.
 - .10 Instrumentation calibration and testing.
 - .11 Performance testing of equipment.
- 1.2 The Contractor is responsible to coordinate and execute the necessary quality control systems, as per the instructions stipulated in the contract documents, in order to validate that the work meets the requirements of the contract documents.
- 1.3 The Contractor is responsible for providing results obtained from the inspection of testing of works as per the relevant field quality control systems, in order to validate compliance with the instructions provided in the contract documents.
- 1.4 Failure to submit relevant inspection and testing results to validate work conformance to the contract documents may render the work non-conforming and may require the Contractor to reperform the work. Delays and additional costs due to rework and re-performance of tests will not be considered sufficient reason for an extension of Contract Time and/or Price, and no claim for extension by reason of such default will be allowed.

2. SUBMITTALS

- 2.1 Make submittals in accordance with Section J – Submittal Procedures.
- 2.2 The Contractor shall submit a Quality Assurance & Quality Control Plan within ten (10) business days after the Award of the Contract.

- 2.3 A Quality Assurance & Quality Control Plan must be in place prior to the start of construction activities in order to ensure that necessary quality control systems are in place for the works. The Quality Assurance & Quality Control Plan must be reviewed by all Contractor workers in the field.
- 2.4 The Quality Assurance & Quality Control Plan Inspection must include the following sections at a minimum:
 - .1 Introduction and project description.
 - .2 Contractor key personnel
 - .3 Roles and responsibilities of Contractor, City Representative, and Owner.
 - .4 Submittals (shop drawings, technical submittals, product data, etc.).
 - .i Submittal schedule.
 - .ii Process, review and acceptance.
 - .5 Quality control systems.
 - .6 Inspection and verification requirements.
 - .7 Acceptance criteria.
 - .8 Sample inspection and test forms.
 - .9 Construction deficiencies.
 - .10 Documentation process.
- 2.5 The Contractor shall include relevant inspection and testing milestones within the Construction Progress Schedule. Relevant milestones must also be captured in the Contractor's Three-Week Look-Ahead Schedule.

3. INSPECTION

- 3.1 Allow City Representative access to Work. If part of Work is in preparation at locations other than Place of Work, allow access to such Work whenever it is in progress.
- 3.2. Give timely notice requesting inspection if Work is designated for special test, inspections or approvals by City Representative instructions, or law of Place of Work.
- 3.3 If Contractor covers or permits to be covered Work that has been designated for special tests, inspections or approvals before such is made, uncover such Work, have inspections or tests satisfactorily completed and make good such Work.
- 3.4 City Representative may order any part of Work to be examined if Work is suspected to be not in accordance with Contract Documents. If, upon examination such work is found not in accordance with Contract Documents, correct such Work and pay cost of

examination and Documents, correct such Work and pay cost of examination and correction. If such Work is found in accordance with Contract Documents, Owner shall pay cost of examination and replacement.

4. INDEPENDENT INSPECTION AGENCIES

- 4.1 Unless indicated otherwise, independent Inspection/ Testing Agencies may be engaged by City Representative for purpose of inspecting and/or testing portions of Work. Cost of such services will be borne by Owner.
- 4.2 Employment of inspection/ testing agencies does not relax responsibility to perform Work in accordance with Contract Documents.
- 4.3 If defects are revealed during inspection and/or testing, appointed agency will request additional inspection and/or testing to ascertain full degree of defect. Correct defect and irregularities as advised by City Representative at no cost to Owner. Pay costs for retesting and reinspection.

5. ACCESS TO WORK

- 5.1 Allow inspection/ testing agencies access to Work, off site manufacturing and fabrication plants.
- 5.2 Cooperate to provide reasonable facilities for such access.

6. PROCEDURES

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

7. REJECTED WORK

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

8. REPORTS

- 8.1 Submit of inspection and test reports to City Representative.
- 8.2 Provide copies to Subcontractor of work being inspected or tested.

9. SPECIAL INSTRUCTIONS

- 9.1 Compaction Testing:
 - .1 Complete compaction tests as per the requirement of the Contract Documents, when performing trenching, bedding and backfilling work.
 - .2 All material testing (backfill densities and concrete testing) shall be performed by an accredited agency and certified by a Professional Engineer. All test results shall be submitted to the City Representative with a report indicating any deficiencies and remediation.
- 9.2 Pressure Tests:
 - .1 Complete pressure tests for new pipeline installations to verify installation meets required design and operating scenarios.
 - .2 Visual inspections of all lines are required prior to Substantial Certificate of Completion. Any deflections, sags obstructions and other defects affecting the performance of the line shall be corrected and the line re-inspected prior to Substantial Certificate of Completion.

END OF SECTION

M. TEMPORARY UTILITIES

1. INSTALLATION AND REMOVAL

- 1.1 Provide temporary utilities controls in order to execute work expeditiously.
- 1.2 Remove from site all such work after use.

2. DEWATERING

- 2.1 Provide temporary drainage and pumping facilities to keep excavations and site free from standing water.

3. WATER SUPPLY

- 3.1 Provide continuous supply of potable water for construction use.
- 3.2 Arrange for supply and appropriate utility company and pay all costs for installation, maintenance and removal.
- 3.3 Pay for utility charges at prevailing rates.

4. TEMPORARY HEATING AND VENTILATION

- 4.1 Provide temporary heating required during construction period, including attendance, maintenance and fuel.
- 4.2 Construction heaters used inside building must be vented to outside or be non-flameless type. Solid fuel salamanders are not permitted.
- 4.3 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 condensation on surfaces.
 - .4 Provide ambient temperatures and humidity levels for storage, installation and curing of materials.
- 4.4 Provide adequate ventilation to meet health regulations for safe working environment.
- 4.5 Ventilating:
 - .1 Provide local exhaust ventilation to prevent harmful accumulation of hazardous substances into atmosphere of occupied areas.
 - .2 Dispose of exhaust materials in manner that will not result in harmful exposure to persons.

- .3 Prevent accumulations of dust, fumes, mists, vapours or gases in areas occupied during construction.
- .4 Ventilate storage spaces containing hazardous or volatile materials.
- .5 Ventilate temporary sanitary facilities.
- .6 Continue operation of ventilation and exhaust system for time after cessation of work process to assure removal of harmful contaminants.
- 4.7 Permanent heating system of building, may be used when available. Be responsible for damage to heating system if use is permitted.
- 4.8 On completion of Work for which permanent heating system is used, replace filters, seals, etc. to ensure system is 'like-new' at substantial completion.
- 4.9 Pay costs for maintaining temporary heat, when using permanent heating system.
- 4.10 Maintain strict supervision of operation of temporary heating and ventilating equipment and be responsible for damage to Work due to failure in providing adequate heat and protection during construction.

5. TEMPORARY POWER AND LIGHT

- 5.1 Pay for temporary power during construction for temporary lighting and operating of power tools.
- 5.2 Arrange for connection with appropriate utility company. Pay all costs for installation, maintenance and removal.
- 5.3 Temporary power for electric cranes and other equipment requiring in excess of above is responsibility of Contractor.
- 5.4 Provide and maintain temporary lighting throughout project. Ensure level of illumination on all floors and stairs is not less than 162 lx.
- 5.5 Connect to power supply in accordance with Canadian Electrical Code and provide meters and switching.
- 5.6 Electrical power and lighting systems installed under this Contract may be used for construction requirements only with prior approval of City Representative provided that guarantees are not affected. Make good damage to electrical system caused by use under this Contract. Replace lamps which have been used for more than 3 months.

6. TEMPORARY COMMUNICATION FACILITIES

- 6.1 Provide and pay for cell phone usage for own use. Provide and pay for connection to Internet for own use.

7. FIRE PROTECTION

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- 7.1 Provide and maintain temporary fire protection equipment during performance of Work required by governing codes, regulations and bylaws.
- 7.2 Burning rubbish and construction waste materials is not permitted on site.

END OF SECTION

N. PRESERVATION AND PROTECTION

1. DESCRIPTION

- 1.1 This Section specifies requirements for preservation and protection of existing and new utilities, services, buildings and structures.

2. GENERAL

- 2.1 Comply with all requirements and regulations of the City of Iqaluit and Utility Companies, especially those pertaining to protective work, inspection and safety.

3. MAINTENANCE AND PROTECTION OF EXISTING UTILITIES, SERVICE, STRUCTURES AND PROPERTIES

- 3.1 The Contractor will be held fully responsible by the Owner for any damage to utilities, services, properties, buildings, or structures adjacent to or in the general area of the work, through settlement of ground, vibration or shock resulting from any cause relating to the work carried out under this Contract. Make good and repair all such damage at own expense.
- 3.2 The Contractor shall supply and install the shoring, bracing and support system at his own judgment and at his own cost to protect the existing utilities, services, buildings and structures from damage for the duration of the construction. The cost for this item shall be included in the tender price and the contractor shall not make any claim against the Owner for extra work on this item.
- 3.3 Confirm all underground services to locate, stake and clearly mark in the field all services which are located on or near the line of the proposed work.
- 3.4 Sustain in their places and protect from direct or indirect injury, all water and gas mains, sewers and drains, conduits, cables, service pipes, poles, sidewalks, curbs, embankments, structures, equipment and other property in the vicinity of the work.
- 3.5 Sustain and support structures that are uncovered, weakened, endangered or threatened.
- 3.6 Notify the City Representative immediately (and follow up in writing) if and when any damage to such facilities occur during the planned execution of work. Provide all necessary written documentation such as incident reports, accident reports, investigative reports and preventative measures to be implemented within 48 hours of any incident taking place, in a format that clearly identifies details such as the report author, his/her role in the project, the company the author represents, date, signature, etc., all on Company letterhead.
- 3.7 Repair immediately all items that are damaged during construction, at no cost to the Owner.
- 3.8 Immediately report all damages occurred on the plant's property, existing services and structure during construction to the City Representative.

- 3.9 Prevent dust and dirt from entering existing buildings or areas where equipment is stored or is operating.
- 3.10 Prevent dust, water or other deleterious substances from entering areas with existing electrical, heating, ventilating, pumping and other equipment. The Contractor will be held responsible for any damage caused by work carried out under this Contract.
- 3.11 Where existing wall sections are removed or where pipes are installed through existing walls or where any dust-generating operation is necessary, provide a suitable temporary wall or enclosure suitably reinforced and sealed to prevent dust or water entering the area. When work is completed, remove temporary dust control device and thoroughly clean all areas affected by the work.
- 3.12 Control groundwater level to prevent damage to any pipe or structure due to water pressure during and after construction and until the completed works are accepted.
- 3.13 Control vibration levels to prevent damage to concrete work during construction, existing structures, equipment, and utilities. Control use of vibration producing construction techniques or equipment.

4. PROTECTION, SOUNDNESS AND REPAIR OF NEW CONSTRUCTION

- 4.1 Protect all newly constructed work from damage. Prevent heavy loading of newly constructed work and repair all damage. Construct all works watertight and correct all imperfect work.
- 4.2 If, in the final inspection, any deficiencies are found, repair or replace the defective work. Be responsible for satisfactory maintenance and repair of all work undertaken for the specified guaranteed maintenance period. Protect and store all equipment supplied under this Contract.

5. PROTECTION AGAINST FREEZING

- 5.1 Furnish all necessary temporary hoarding, heating equipment and fuel for heated workspaces where required, in order to ensure installation of equipment and materials are performed per the specifications and guidelines of manufacturer.

6. SURVEY MONUMENTS

- 6.1 Maintain survey monuments, iron bars, round iron pipes and stakes for marking property boundaries and locations.
- 6.2 Where monuments, pipes or stakes are located on the line of the trench or within the limits of the work, the Contractor shall report to the City Representative.
- 6.3 Do not remove survey monuments without receiving prior approval. Pay for or replace monuments which were removed without approval.

END OF SECTION

O. MATERIALS AND EQUIPMENT

1. GENERAL

- 1.1 Provide all materials and equipment new. Reconditioned equipment is not acceptable.
- 1.2 Co-operate with other trades prior to installation of work under the contract. Should the Contractor fail to do so, such works, if required, shall be removed, relocated and/or modified as directed by the City Representative, without additional cost to the Owner.
- 1.3 Should the Contractor fail to correspond with requests, or should they misdirect other trades, such corrections and/or additional work, as directed by the City Representative shall be at the Contractor's expense.
- 1.4 Work shall be performed in accordance with the Safety Act and Regulations.

2. SUBMITTALS

- 2.1 Make submittals in accordance with Section J – Submittal Procedures.
- 2.2 Submit shop drawings and product data sheets, as described in the Contract Documents, for all civil, structural, architectural, building mechanical, process mechanical, electrical, instrumentation and communication installations.

3. EQUIPMENT DELIVERY AND INSPECTION

- 3.1 The Works shall be delivered, F.O.B. to the WTP site, City of Iqaluit, Nunavut. The Supplier shall coordinate delivery, offloading and on-site storage of the equipment.
- 3.2 Deliver products in accordance with accepted current progress schedule and coordinate to avoid conflict with the Work and conditions at site. Coordinate the delivery of materials and equipment in advance of the work in order to ensure there are no impacts to downstream installation activities.
- 3.3 Deliver products in undamaged condition, in manufacturer's original container or packaging, with identifying labels intact and legible. Include on label, date of manufacture and shelf life, where applicable.
- 3.4 Unload products in accordance with manufacturer's instructions for unloading or as specified. Record receipt of products delivered to the site. Inspect for completeness and evidence of damage during shipment.
- 3.5 Remove damaged products from site and expedite delivery of identical new undamaged products, and remedy incomplete or lost products to provide that specified, so as not to delay progress of the Work.

4. HANDLING, STORAGE, AND PROTECTION

- 4.1 Handle and store products in accordance with manufacturer's written instructions and in a manner to prevent damage. Provide manufacturer's recommended maintenance during storage, installation, and until products are accepted for use by Owner.
- 4.2 Arrange storage in a manner to provide easy access for inspection. Make periodic inspections of stored products to assure that products are maintained under specified conditions, and free from damage or deterioration. Keep running account of products in storage to facilitate inspection and to estimate progress payments for products delivered, but not installed in the Work.
- 4.3 Store electrical, instrumentation, and control products, and equipment with bearings in weather-tight structures as per manufacturer's instructions. Protect electrical, instrumentation, and control products, and insulation against moisture, water, and dust damage. Connect and operate continuously all space heaters furnished in electrical equipment.
- 4.4 Store fabricated products above ground on blocking or skids and prevent soiling or staining. Store loose granular materials in well-drained area on solid surface to prevent mixing with foreign matter. Cover products that are subject to deterioration with impervious sheet coverings; provide adequate ventilation to avoid condensation.
- 4.5 Store finished products that are ready for installation in dry and well-ventilated areas. Do not subject to extreme changes in temperature or humidity.
- 4.6 Hazardous Materials: Prevent contamination of personnel, storage building, and site. Meet requirements of product specification, codes, and manufacturer's instructions.

END OF SECTION

P. CONSTRUCTION FACILITIES

1. MOBILIZATION

- 1.1 Mobilization shall include, but not be limited to, the following items:
- .1 Obtaining required permits.
 - .2 Filing necessary notices with WSCC.
 - .3 Moving in the Contractor's field offices and equipment required within the first month after issuance of the Commence Work Order.
 - .4 Providing temporary construction fencing to prevent unauthorized access to the work area before starting construction on site.
 - .5 Providing temporary construction roads and signage if required.
 - .6 Providing temporary construction power, wiring, and lighting facilities.
 - .7 Providing onsite communication facilities, including telephones and internet services.
 - .8 Providing onsite sanitary facilities and potable water facilities as specified and as required by Laws and Regulations, and governing agencies.
 - .9 Arranging for and erection of Contractor's work and storage yard including temporary fencing.
 - .10 Posting required notices and establishing safety programs and procedures.
 - .11 Coordinate safety programs and procedures with the Owner.
 - .12 Having Contractor's superintendent at site full time.
 - .13 Removing debris and trash, etc. as needed for Contractor to gain access to do his Work.
- 1.2 Use area designated for Contractor's temporary facilities as shown in the Contract Documents.

2. INSTALLATION AND REMOVAL

- 2.1 Provide construction facilities in order to execute work expeditiously.
- 2.2 Remove from site all such work after use.

3. SCAFFOLDING

- 3.1 Provide and maintain scaffolding, ramps, ladders, platforms and temporary stairs.

4. HOISTING

- 4.1 Provide, operate and maintain hoists cranes required for moving of materials and equipment. Make financial arrangements with Subcontractors for use thereof.
- 4.2 Hoists cranes shall be operated by qualified operator.

5. STAGING AREA

- 5.1 The staging area (the Contractor's laydown area) as shown within the contractor documents.

6. SITE STORAGE/ LOADING

- 6.1 Confine work and operations of employees by Contract Documents. Do not unreasonably encumber premises with products.
- 6.2 Do not load or permit to load any part of Work with a weight or force that will endanger the Work.
- 6.3 Ensure that any aerosol or gas products are stored according to manufacturer's written instructions in a securely locked facility.

7. CONSTRUCTION PARKING

- 7.1 Parking will be permitted on site provided it does not disrupt performance of Work or interfere with access, egress and parking for neighboring sites, or local traffic.
- 7.2 Provide and maintain adequate access to project site.
- 7.3 Build and maintain temporary roads where indicated or required and provide snow removal during period of Work.

8. SECURITY

- 8.1 Provide and pay for responsible security personnel to guard site and contents of site after working hours and during holidays.

9. OFFICES

- 9.1 Provide office heated to 22°C, lighted 750 lx and ventilated, of sufficient size to accommodate site office, eating area for workers, and furnished with drawings laydown table. Furnish site trailer as required.
- 9.2 Provide a clearly marked and fully stocked first-aid case in a readily available location.
- 9.3 Subcontractors may provide their own offices as necessary. Direct location of these offices to be approved by the City Representative.

10. EQUIPMENT, TOOL AND MATERIALS STORAGE

- 10.1 Provide and maintain, in a clean and orderly condition, lockable weatherproof sheds for storage of tools, equipment and materials.
- 10.2 Locate materials not required to be stored in weatherproof sheds on site in a manner to cause least interference with work activities.
- 10.3 Stored materials and debris on site must be secured and contained within the construction site, so not to disturb the general public.

11. SANITARY FACILITIES

- 11.1 Provide lockable sanitary facilities for work force in accordance with governing regulations and ordinances.
- 11.2 Post notices and take such precautions as required by local health authorities. Keep area and premises in sanitary condition.

12. CONSTRUCTION SIGNAGE

- 12.1 Provide and erect, within 5 working days prior to construction mobilization, a project sign in a location designated by the City Representative.
- 12.2 Provide a construction sign 1220 x 2440mm, of plywood construction painted with exhibit lettering produced by a professional sign painter. Details of sign message to be provided to City Representative for review/ approval prior to fabrication. Wording shall in in Inuktitut, English and French official languages.
- 12.3 Provide site sign temporary mounting comprising foundation, framing, and supports.
- 12.4 Direct requests for approval to erect a Contractor signboard to City Representative. For consideration general appearance of Contractor signboard must conform to project identification site sign. Wording shall in in Inuktitut, English and French official languages.
- 12.5 Signs and notices for safety and instruction shall be in all Nunavut official languages graphic symbols.
- 12.6 Maintain approved signs and notices in good condition for duration of project, and dispose of off-site on completion of project, or earlier if directed by City Representative.

13. CLEAN-UP

- 13.1 Remove construction debris, waste materials, packaging material from work site daily.
- 13.2 Clean dirt or mud tracked onto paved or surfaced roadways.
- 13.3 Store materials resulting from demolition activities that are salvageable.
- 13.4 Stack stored new or salvaged material not in construction facilities.

END OF SECTION

Q. TEMPORARY BARRIERS AND ENCLOSURES

1. INSTALLATION AND REMOVAL

- 1.1 Provide temporary controls in order to execute Work expeditiously.
- 1.2 Remove from site all such work after use.

2. GUARD RAILS AND BARRICADES

- 2.1 Provide secure, rigid guard rails and barricades around deep excavations, open shafts, open stair wells, open edges of floors and roofs.
- 2.2 Provide concrete jersey barriers for use as barricades around deep excavation sites, and as a means to separate vehicular traffic.
- 2.2 Provide as required by governing authorities.

3. WEATHER ENCLOSURES

- 3.1 Provide weather tight enclosures to unfinished door and window openings, tops of shafts and other openings in floors, walls, and roofs.
- 3.2 Close off floor areas where walls are not finished; seal off other openings; enclose building interior work for temporary heat.
- 3.3 Design enclosures to withstand wind pressure and snow loading.

4. DUST TIGHT SCREENS

- 4.1 Provide dust tight screens or insulated partitions to localize dust generating activities, and for protection of workers, finished areas of Work and public.
- 4.2 Maintain and relocate protection until such work is complete.

5. ACCESS TO SITE

- 5.1 Provide and maintain access roads, crossings, ramps and construction access routes as may be required for access to Work.
- 5.2 Provide temporary fencing around perimeter of Work site, in order to delineate construction site from the public.

6. PUBLIC TRAFFIC FLOW

- 6.1 Provide and maintain competent signal flag operators, barricades and lights as required to perform Work and protect the public.
- 6.2 Refer to Section E – Special Project Procedures (Traffic Control).

7. FIRE ROUTES

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- 7.1 Maintain access to property including overhead clearances for use by emergency response vehicles.

8. PROTECTION FOR OFF-SITE AND PUBLIC PROPERTY

- 8.1 Protect surrounding private and public property from damage during performance of Work.
- 8.2 Be responsible for damage incurred.

9. PROTECTION OF BUILDING FINISHES

- 9.1 Provide protection for finished and partially finished building finishes and equipment during performance of Work.
- 9.2 Provide necessary screens, covers, and hoardings.
- 9.3 Be responsible for damage incurred due to lack of or improper protection.

END OF SECTION

R. CLOSEOUT PROCEDURES

1. SECTION INCLUDES

- 1.1 Administrative procedures preceding preliminary and final inspections of Work.

2. INSPECTION AND DECLARATION

- 2.1 Contractor's Inspection: Contractor and all Subcontractors shall conduct an inspection of Work, identify deficiencies and defects, and repair as required to conform to Contract Documents.
- i. Notify City Representative in writing of satisfactory completion of Contractor's Inspection and that corrections have been made.
 - ii. Request City Representative's Inspection.
- 2.2 City Representative's Inspection: City Representative and Contractor will perform inspection of work to identify obvious defects or deficiencies. Contractor shall correct Work accordingly.
- 2.3 Completion: submit written certificate that following have been performed:
- i. Work has been completed and inspected for compliance with Contract Documents.
 - ii. Defects have been corrected and deficiencies have been completed.
 - iii. Equipment and systems have been tested, adjusted and are fully operational.
 - iv. Certificates required by other Regulatory Agencies have been submitted.
 - v. Operation of systems have been demonstrated to Owner's personnel.
 - vi. Work is complete and ready for final inspection.
- 2.4 Final Inspection: when items noted above are completed, request final inspection of Work by Owner, City Representative, and Contractor. If Work is deemed incomplete, complete outstanding items and request reinspection.
- 2.5 Declaration of Substantial Performance: when Owner and City Representative consider deficiencies and defects have been corrected and it appears requirements of Contract have been substantially performed, make application for certificate of Substantial Performance. No later than 21 calendar days after receipt of application, City Representative will review Work to verify validity of application, and no later than 7 calendar days after completing review, will notify Contractor if Work or designated portion of Work is substantially performed.
- 2.6 Commencement of Lien and Warranty Periods: date of Owner's acceptance of submitted declaration of Substantial Performance shall be date for commencement for warranty

period and commencement of lien period unless required otherwise by lien statute of Place of Work.

- 2.7 Final Payment: when Owner and City Representative consider final deficiencies and defects have been corrected and it appears requirements of Contract have been totally performed, make application for final payment. If Work is deemed incomplete by Owner and City Representative, complete outstanding items and request reinspection. City Representative will, no later than 21 calendar days after receipt of an application for final payment, review Work to verify validity of application. City Representative will give notification that application is valid or give reasons why it is not valid, no later than 7 calendar days after reviewing Work
- 2.8 Payment of Holdback: after issuance of certificate of Substantial Performance of Work, submit an application for payment of holdback amount in accordance with terms of payment.

END OF SECTION

S. CLOSEOUT SUBMITTALS

1. SECTION INCLUDES

- 1.1 As-built, samples, and terms of reference.
- 1.2 Equipment and systems.
- 1.3 Product data, materials and finishes, and related information.
- 1.4 Operations and maintenance data.
- 1.5 Spare parts, special tools and maintenance materials.
- 1.6 Warranties and bonds.
- 1.7 Final site survey.

2. SUBMISSION

- 2.1 Make submittals in accordance with Section J – Submittal Procedures.
- 2.2 Prepare inspections and data using personnel experience in maintenance and operation of described products.
- 2.3 Copy will be returned after final inspection, with City Representative's comments.
- 2.4 Revise content of documents as required prior to final submittal.
- 2.5 Provide evidence as to type, source and quality of products provided as part of the Work.
- 2.6 Defective products will be rejected, regardless of previous inspections. Replace products at own expense.
- 2.7 Pay costs of transportation.

3. AS-BUILTS AND SAMPLES

- 3.1 In addition to requirements in General Conditions, maintain at the site on record copy of:
 - i. Contract Drawings.
 - ii. Terms of Reference.
 - iii. Addenda.
 - iv. Change Orders and other modifications to Contract.
 - v. Reviewed shop drawings, product data, and samples.
 - vi. Field test reports.

- vii. Inspection certificates.
 - viii. Manufacturer's certificates.
 - 3.2 Store record documents and samples in field office apart from documents used for construction. Provide files, racks, and secure storage.
 - 3.3 Label record documents and file in accordance with Section number listings in List of Contents of this Project Manual.
 - 3.4 Maintain record documents in clean, dry and legible condition. Do not use record documents for construction purposes.
 - 3.5 Keep record documents and samples available for inspection by City Representative.
- 4. RECORDING ACTUAL SITE CONDITIONS**
 - 4.1 Record information on set of blue line opaque drawings.
 - 4.2 Provide felt tip marking pens, maintaining separate colours for each major system, for recording information.
 - 4.3 Record information concurrently with construction progress. Do not conceal Work until required information is recorded.
 - 4.4 Contract Drawings and shop drawings: legibly mark each item to record actual construction.
- 5. EQUIPMENT AND SYSTEMS**
 - 5.1 Each Item of Equipment and Each System: include description of unit or system, and component parts. Give function, normal operation characteristics, and limiting conditions. Include performance curves, with engineering data and tests, and complete nomenclature and commercial number of replaceable parts.
 - 5.2 Panel board circuit directories: provide electrical service characteristics, controls, and communications.
 - 5.3 Include installed color coded wiring diagrams.
 - 5.4 Operating Procedures: include start-up, break-in, and routine normal operating instructions and sequences. Include stopping, shut-down, and emergency instructions. Include summer, winter, and any special operating instructions.
 - 5.5 Maintenance Requirements: include routine procedures and guide for troubleshooting; disassembly, repair, and reassembly instructions; and alignment, adjusting, balancing, and checking instructions.
 - 5.6 Providing servicing and lubrication schedule, and list of lubricants required.
 - 5.7 Include manufacturer's printed operation and maintenance instructions.

- 5.8 Include sequence of operation by controls manufacturer.
- 5.9 Provide original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.
- 5.10 Provide installed control diagrams by controls manufacturer.
- 5.11 Provide Contractor's coordination drawings, with installed color-coded piping drawings.
- 5.12 Provide charts of valve tag numbers, with location and function of each valve, keyed to flow and control diagram.
- 5.13 Provide list of original manufacturer's spare parts, current prices, and recommended quantities to be maintained in storage.
- 5.14 Include test and balancing reports as specified in Section J – Quality Control.
- 5.15 Additional requirements: as specified in individual terms of reference sections.

6. MATERIALS AND FINISHES

- 6.1 Building Products, Applied Materials, and Finishes: include product data, with catalogue number, size, composition, and color and texture designations. Provide information for re-ordering products.
- 6.2 Instructions for cleaning agents and methods, precautions against detrimental agents and methods, and recommended schedule for cleaning and maintenance.
- 6.3 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.
- 6.4 Additional Requirements: as specified in individual terms of reference sections.

7. SPARE PARTS

- 7.1 Provide spare parts, in quantities specified in individual terms of reference sections.
- 7.2 Provide items of same manufacturer and quality as items in Work.
- 7.3 Deliver to site; place and store in location designated by City Representative.
- 7.4 Receive and catalogue all items. Submit inventory listing to City Representative. Include approved listings in Maintenance Manual.
- 7.5 Obtain receipt for delivered products and submit prior to final payment.

8. MAINTENANCE MATERIALS

- 8.1 Provide maintenance and extra materials, in quantities specified in individual terms of reference sections.

- 8.2 Provide items of same manufacturer and quality as items in Work.
- 8.3 Deliver to site; place and store in location designated by City Representative.
- 8.4 Receive and catalogue all items. Submit inventory listing to City Representative. Include approved listings in Maintenance Manual.
- 8.5 Obtain receipt for delivered products and submit prior to final payment.

9. STORAGE, HANDLING AND PROTECTION

- 9.1 Store spare parts, maintenance materials, and special tools in manger to prevent damage or deterioration.
- 9.2 Store in original and undamaged condition with manufacturer's seal and labels intact.
- 9.3 Store components subject to damage from weather in weatherproof enclosures.
- 9.4 Store paints and freezable materials in a heated and ventilated room.
- 9.5 Remove and replace damaged products at own expense and to satisfaction of City Representative.

10. PRE-WARRANTY CONFERENCE

- 10.1 Meet with City Representative, to develop understanding of requirements of this section. Schedule meeting prior to contract completion, and at time designated by City Representative.
- 10.2 City Representative will establish communication procedures for:
 - i. Notification of construction warranty defects.
 - ii. Determine priorities for type of defect.
 - iii. Determine reasonable time for response.
- 10.3 Provide name, telephone number and address of licensed and bonded company that is authorized to initiate and pursue construction warranty work action.
- 10.4 Ensure contact is located within local service area and warranted construction, is continuously available, and is responsive to inquiries for warranty work action.

11. WARRANTIES AND BONDS

- 11.1 Separate each warranty or bond with index tab sheets keyed to Table of Contents listing.
- 11.2 List subcontractor, supplier, and manufacturer, with name, address, and telephone number of responsible principal.

- 11.3 Obtain warranties and bonds, executed in duplicate by subcontractors, suppliers, and manufacturers, within ten (10) working days after completion of the applicable item of work.
- 11.4 Except for items put into use with Owner's permission, leave date of beginning of time of warranty until the Date of Substantial Performance is determined.
- 11.5 Verify that documents are in proper form, contain full information, and are notarized.
- 11.6 Co-execute submittals when required.
- 11.7 Retain warranties and bonds until time specified for submittal.

END OF SECTION